

School of Medicine

2002–2003



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The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

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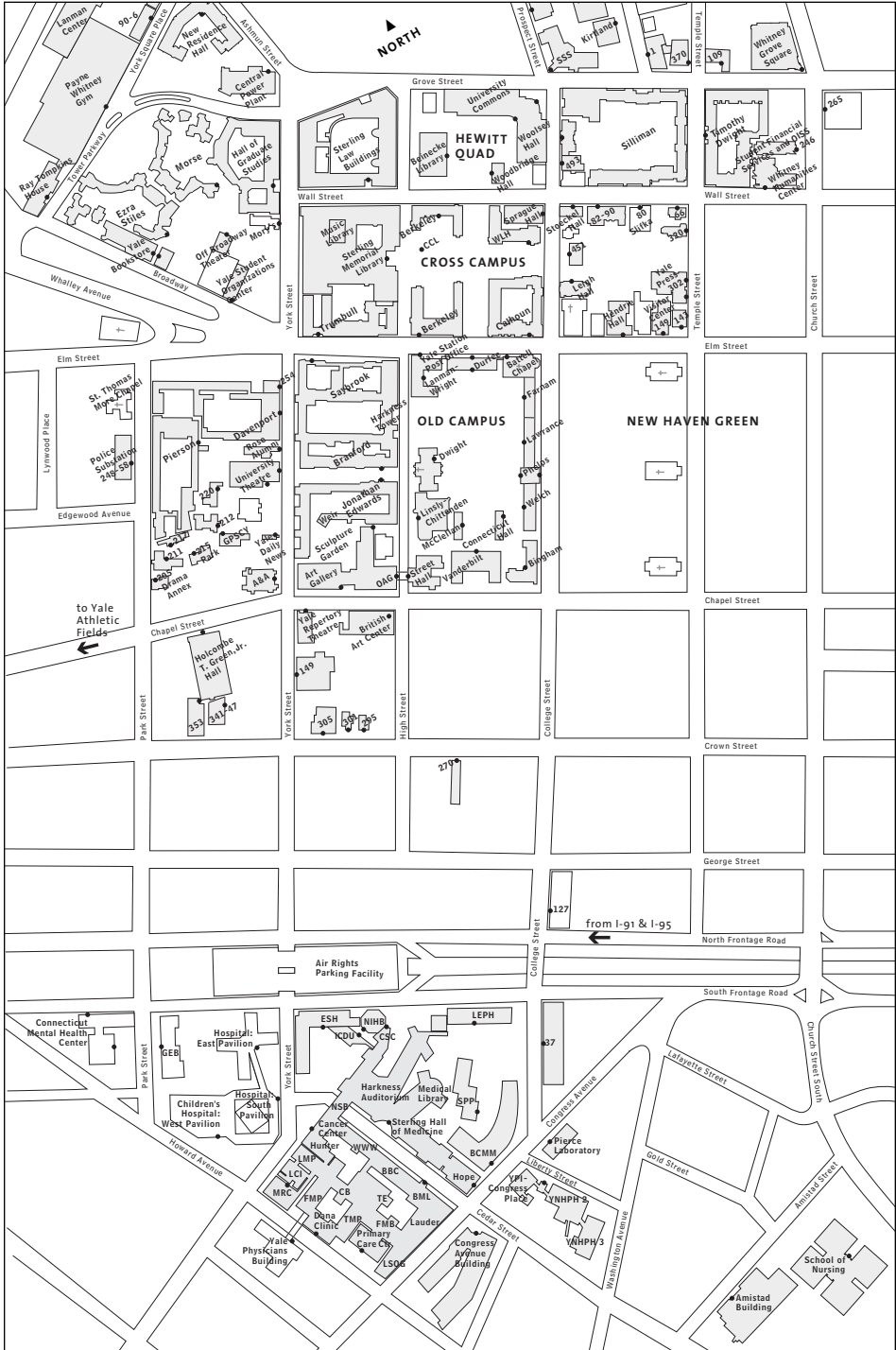
School of Medicine

2002–2003

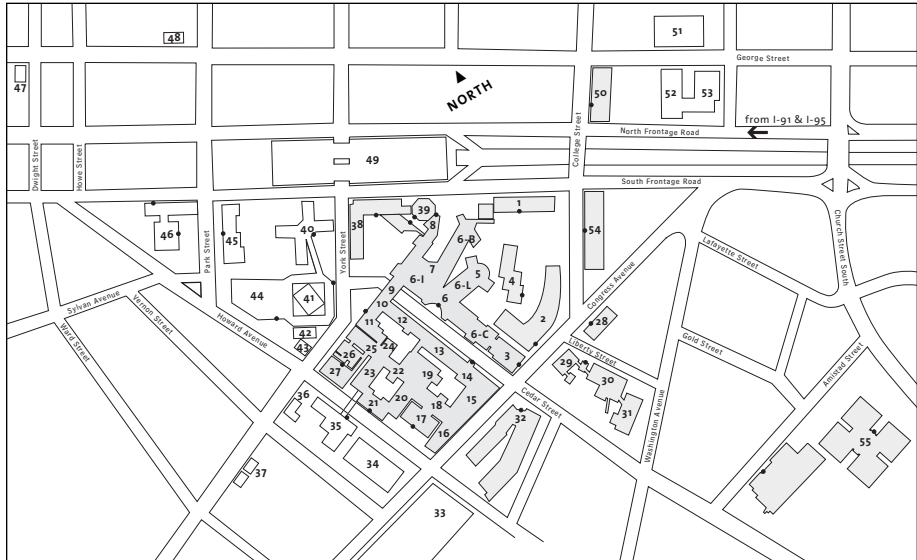
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YALE UNIVERSITY CAMPUS SOUTH & YALE MEDICAL CENTER (see also p. 4)



YALE MEDICAL CENTER BUILDINGS AND ADDRESSES



1. Laboratory of Epidemiology and Public Health, 60 College St.
2. Boyer Center for Molecular Medicine
3. Jane Ellen Hope Building
4. Sterling Power Plant
5. Harvey Cushing/John Hay Whitney Medical Library
6. Sterling Hall of Medicine, 333 Cedar St. Wings: B, C, I & L
7. Mary S. Harkness Memorial Auditorium
8. Child Study Center
9. Nathan Smith Building (Bridge)
10. Yale Cancer Center
11. Hunter Building, 15 York St.
12. William Wirt Winchester Building
13. Yale Eye Center (Boardman Building), 330 Cedar St.
14. Brady Memorial Laboratory, 310 Cedar St.
15. Lauder Hall
16. Laboratory for Surgery, Obstetrics and Gynecology
17. Primary Care Center
18. Farnam Memorial Building
19. Tompkins East
20. Tompkins Memorial Pavilion
21. Charles A. Dana Building, 789 Howard Ave.
22. Clinic Building
23. Fitkin Memorial Pavilion
24. Fitkin Amphitheater
25. Laboratory for Medicine and Pediatrics
26. Lippard Laboratory of Clinical Investigation
27. Magnetic Resonance Center
28. John B. Pierce Laboratory, 290 Congress Ave.
29. Yale Psychiatric Institute-Congress Place, 301 Cedar St. The Yale Medical Bookstore, 320 Congress Ave.
30. Yale-New Haven Psychiatric Hospital 2, 184 Liberty St.
31. Yale-New Haven Psychiatric Hospital 3, 184 Liberty St.
32. Congress Avenue Building, 350-382 Congress Ave.
33. 464 Congress Ave. and 726 Howard Ave.
34. **Howard Ave. Garage**
35. Yale Physicians Building, 800 Howard Ave.
36. 110 Davenport Ave. (YNHH Day Care Center)
37. 132-138 Davenport Ave. (Lead Program)
38. Edward S. Harkness Memorial Hall, 367 Cedar St.
39. Neison and Irving Harris Building, 230 S. Frontage Rd.
40. East Pavilion, 20 York St. (Yale-New Haven Hospital Main Entrance)
41. South Pavilion, 20 York St.
42. **Emergency Services Parking**
43. **Children's Hospital Parking Garage**
44. Children's Hospital (West Pavilion)
45. Grace Building, 25 Park St.
46. Connecticut Mental Health Center
47. Ronald McDonald House, 501 George St.
48. 425 George St.
49. **Air Rights Parking Garage**
50. 135 College St.
51. New Haven Hotel, 229 George Street
52. **Temple Garage**
53. Temple Medical Center, 40-60 Temple St.
54. College Plaza, 47 College St.
55. Medical Center South, 100 Church St. (Yale School of Nursing)

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Calendar

FALL 2002

June 24	Mon.	Clerkship year for third-year students begins, 8 A.M.
Aug. 12–23	Mon.–Fri.	Registration for third- through fifth-year students, 9 A.M.–4:30 P.M.
Aug. 27	Tues.	Matriculation for first-year students, 8 A.M.–11 A.M.
Sept. 3	Tues.	First term begins for first- and second-year students.
Sept. 3–13	Tues.–Fri.	Registration for second-year students, 9 A.M.–4:30 P.M.
Nov. 25–Dec. 1	Mon.–Sun.	Fall recess for first- and second-year students.
Dec. 7	Sat.	Winter recess begins for third- and fourth-year students.
Dec. 21	Sat.	Winter recess begins for first- and second-year students.

SPRING 2003

Jan. 6	Mon.	Winter recess ends, 8 A.M. Second term begins for first- and second-year students, 8:30 A.M. Registration, 9 A.M.–4:30 P.M. Clerkships begin for third- and fourth-year students.
Jan. 20	Mon.	Martin Luther King Day. No classes.
March 7	Fri.	Spring recess begins, 5 P.M. (No recess for students on clerkships.)
March 17	Mon.	Spring recess ends, 8 A.M.
Apr. 18	Fri.	Good Friday. No classes for first- and second-year students.
May 6	Tues.	Student Research Day. No afternoon classes.
May 16	Fri.	Second term ends for second- and fourth-year students, 5 P.M.
May 23	Fri.	Second term ends for fourth-year students, 5 P.M.
May 26	Mon.	University Commencement.
May 30	Fri.	Second term ends for first-year students, 5 P.M.
June 20	Fri.	Clerkship year for third-year students ends, 5 P.M.

The President and Fellows of Yale University

President

Richard Charles Levin, B.A., B.LITT., PH.D.

Fellows

His Excellency the Governor of Connecticut, *ex officio*.

Her Honor the Lieutenant Governor of Connecticut, *ex officio*.

George Leonard Baker, Jr., B.A., M.B.A., *Palo Alto, California*.

Edward Perry Bass, B.S., *Fort Worth, Texas*.

Roland Whitney Betts, B.A., J.D., *New York, New York (June 2005)*.

Benjamin Solomon Carson, Sr., B.A., M.D., *Upperco, Maryland (June 2003)*.

Gerhard Casper, LL.M., PH.D., *Atherton, California*.

Susan Crown, B.A., M.A., *Chicago, Illinois*.

Charles Daniel Ellis, B.A., M.B.A., PH.D., *New Haven, Connecticut*.

Holcombe Tucker Green, Jr., B.A., LL.B., *Atlanta, Georgia*.

Maya Ying Lin, B.A., M.ARCH., D.F.A., *New York, New York (June 2008)*.

Linda Anne Mason, B.A., M.B.A., *Belmont, Massachusetts (June 2004)*.

The Rt. Rev. Victoria Matthews, B.A., M.DIV., TH.M., *Edmonton, Alberta, Canada*.

Indra Nooyi, B.S., M.B.A., M.P.P.M., *Greenwich, Connecticut*.

Barrington Daniel Parker, Jr., B.A., LL.B., *Stamford, Connecticut*.

John Ennis Pepper, Jr., B.A., M.A., *Cincinnati, Ohio*.

Theodore Ping Shen, B.A., M.B.A., *Brooklyn Heights, New York (June 2007)*.

Janet Louise Yellen, B.A., PH.D., *Berkeley, California (June 2006)*.

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Vice President for Development

Charles James Pagnam, B.A.

Vice President and Director of New Haven and State Affairs

Bruce Donald Alexander, B.A., J.D.

Vice President for Finance and Administration

Robert Loren Culver, B.A., M.A., M.P.A.

Administration and Faculty

GENERAL ADMINISTRATION

As one of the coordinate schools of the University, the general administration of the School of Medicine is conducted in accordance with the bylaws of the Yale Corporation. The affairs of the School are under the direction of the dean and the faculty, subject to the approval of the Corporation. The Medical School Council serves as the central focus for review of School of Medicine activities and provides an influential forum for discussion of significant schoolwide issues. The council is composed of both faculty and student members. The Educational Policy and Curriculum Committee oversees the educational program of the School and reports to the Board of Permanent Officers.

COMMITTEES FOR 2002 – 2003

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* Clinical Professor

† Associate Professor

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* Clinical Professor

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* Clinical Professor

† Associate Professor

Medical School Council

Steering Committee of the Medical School Council
Committee for the Well-Being of Students

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Admissions Committee
Affirmative Action Committee
Animal Resources
Children's Clinical Research Center Advisory Committee
Educational Policy and Curriculum Committee
Funds and Fellowships Committee
General Clinical Research Center Medical Advisory Committee
Human Investigation Committee
International Health Committee
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Medical Library Committee
Scholars Award Committee
Senior Appointments and Promotions Committee
Senior Faculty Allotment Committee
Status of Women in Medicine Committee
Term Appointments and Promotions Committee

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Walid Abi-Saab, M.D., *Assistant Professor (Adjunct) of Psychiatry.*
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Yukinori Akiyama, M.D., *Associate Research Scientist in Neurology.*
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Louis Alexander, PH.D., *Assistant Professor of Epidemiology.*
Francis D. Alfano, M.D., *Assistant Clinical Professor of Medicine.*
Todd Alford, M.D., *Clinical Instructor in Psychiatry.*
Stephen Allegretto, M.P.H., *Lecturer in Public Health.*
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Keun S. Chung, M.D., *Associate Clinical Professor of Anesthesiology*.

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- Kenneth A. Cohen, M.D., *Assistant Clinical Professor of Dermatology.*
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- Robert M. Cohen, M.D., *Clinical Instructor in Medicine.*
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- George L. Cohn, M.D., *Associate Clinical Professor of Psychiatry (Retired).*
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Jonathan E. Gage, M.D., *Assistant Clinical Professor of Medicine.*
Kara C. Gagnon, O.D., *Assistant Clinical Professor of Ophthalmology and Visual Science.*
Helmuth W. Gahbauer, M.D., *Assistant Clinical Professor of Diagnostic Radiology.*
Vivian Gahtan, M.D., *Associate Professor of Surgery (Vascular).*
J. David Gaines, M.D., *Associate Clinical Professor of Medicine.*
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James R. Gallagher, M.D., *Clinical Professor Emeritus of Pediatrics.*
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- Luis R. Gonzalez, M.D., M.P.H., *Assistant Clinical Professor of Psychiatry.*
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- Ramon Gonzalez, M.D., *Assistant Clinical Professor of Diagnostic Radiology.*
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- Elaine Grant, P.A., *Lecturer in Medicine.*
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Donald R. Greene, M.D., *Assistant Clinical Professor of Dermatology*.
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Mark H. Vincent, M.D., *Clinical Instructor in Pediatrics*.

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- Norman R. Vincent, M.D., *Associate Clinical Professor of Diagnostic Radiology.*
Eugenia M. Vining, M.D., *Clinical Instructor in Surgery (Otolaryngology).*
Michael D. Virata, M.D., *Clinical Instructor in Medicine.*
Christophe Viret, Ph.D., *Associate Research Scientist in Immunobiology.*
Catherine Viscoli, Ph.D., *Research Scientist in Medicine.*
Gail Vitagliano, M.D., *Clinical Instructor in Medicine.*
Jo-Ann Vitarelli, L.C.S.W., *Clinical Instructor in Psychiatry.*
Lawrence A. Vitulano, Ph.D., *Associate Clinical Professor in the Child Study Center.*
Kenneth P. Vives, M.D., *Assistant Professor of Neurosurgery.*
Robert M. Vogel, M.D., *Assistant Clinical Professor of Medicine.*
Dolores Vojvoda, M.D., *Assistant Professor of Psychiatry.*
Fred R. Volkmar, M.D., *Professor in the Child Study Center and of Psychiatry, Pediatrics, and Psychology.*
Michael B. Vollmar, M.D., *Clinical Instructor in Psychiatry.*
George Vratsanos, M.D., *Lecturer in Medicine.*
Thomas W. Vris, M.D., *Clinical Instructor in Surgery (Otolaryngology).*
Jean D. Vulte, B.A., *Lecturer in Obstetrics and Gynecology.*
Meena Vythilingam, M.B.B.S., *Lecturer in Psychiatry.*
Frans J. Wackers, M.D., Ph.D., *Professor of Diagnostic Radiology and Medicine.*
Peter Wade, M.D., *Clinical Instructor in Neurology.*
Krystn Wagner, M.D., Ph.D., *Assistant Professor of Medicine.*
Christopher J. Wahl, M.D., *Clinical Instructor in Orthopaedics and Rehabilitation.*
Stephanie L. Wain, M.D., *Clinical Instructor in Pathology.*
Linda Ann Waldman, M.D., *Clinical Instructor in Pediatrics.*
Milton B. Wallack, D.D.S., *Assistant Clinical Professor of Surgery (Dental).*
Dale J. Wallington, M.D., *Assistant Clinical Professor of Psychiatry.*
Francis X. Walsh, M.D., *Assistant Clinical Professor of Medicine.*
James F. Walsh, M.D., *Assistant Clinical Professor of Surgery (Urology).*
Susan A. Walsh, M.D., *Clinical Instructor in Pediatrics.*
Thomas J. Walsh, M.D., *Clinical Professor of Ophthalmology and Visual Science and Neurology.*
Juan N. Walterspiel, M.D., *Assistant Clinical Professor of Pediatrics.*
Zenta Walther, MD., Ph.D., *Associate Research Scientist in Pathology.*
Gary R. Wanerka, M.D., *Assistant Clinical Professor of Pediatrics.*
Hong Wang, M.D., Ph.D., *Assistant Professor of Public Health (Global Health).*
Jimin Wang, Ph.D., *Research Scientist in Molecular Biophysics and Biochemistry.*
Jingming Wang, Ph.D., *Associate Research Scientist in Medicine (Pulmonary and Critical Care).*
Lin Wang, Ph.D., *Associate Research Scientist in Medicine (Digestive Diseases).*
Shu-Ming Wang, M.D., *Assistant Professor of Anesthesiology.*
Tong Wang, M.D., *Research Scientist in Cellular and Molecular Physiology.*
Wengang Wang, M.D., *Associate Research Scientist in Neurology.*
Xiu-Jie Wang, M.D., *Research Affiliate in Surgery (Vascular).*

- Xue Feng Wang, PH.D., *Associate Research Scientist in Ophthalmology and Visual Science.*
- Yinong Wang, M.D., *Associate Research Scientist in Surgery (Cardiothoracic).*
- Yongfei Wang, M.S., *Lecturer in Medicine (Cardiology).*
- Yongmei Wang, PH.D., *Associate Research Scientist in Diagnostic Radiology.*
- David C. Ward, PH.D., *Professor of Genetics and Molecular Biophysics and Biochemistry.*
- Henry Ward, M.D., *Assistant Clinical Professor of Medicine.*
- Nadia Ward, PH.D., *Assistant Professor of Psychiatry.*
- Stephen C. Wardlaw, M.D., *Clinical Professor of Laboratory Medicine.*
- John H. Warner, PH.D., *Professor of the History of Medicine, American Studies, and History.*
- Graham B. Warren, PH.D., *Professor of Cell Biology.*
- Wayne S. Warren, M.D., *Assistant Clinical Professor of Medicine.*
- Lawrence J. Wartel, M.D., *Clinical Professor of Obstetrics and Gynecology.*
- Hetty A. Waskin, M.D., *Assistant Professor (Adjunct) of Medicine.*
- Joel A. Wasserman, M.P.H., *Lecturer in Epidemiology (Environmental Health).*
- Dennis Wasson, M.B.B.CH., *Assistant Clinical Professor of Surgery (Gastroenterology).*
- John M. Watkins-Pitchford, M.B.B.S., *Assistant Professor of Anesthesiology.*
- Kalman L. Watsky, M.D., *Associate Clinical Professor of Dermatology.*
- H. Kirk Watson, M.D., *Assistant Clinical Professor of Surgery (Plastic).*
- George J. Watstein, M.D., *Associate Clinical Professor of Psychiatry.*
- Jason N. Watt, M.ED., *Lecturer in the Child Study Center.*
- Peter Waxman, M.D., *Assistant Clinical Professor of Diagnostic Radiology.*
- Stephen G. Waxman, M.D., PH.D., *Professor of Neurology, Pharmacology, and Neurobiology.*
- Marvin A. Wayne, M.D., *Assistant Clinical Professor of Surgery (Emergency Medicine).*
- Stephen D. Wayne, Jr., M.S.W., *Assistant Clinical Professor of Psychiatry (Social Work).*
- Josiah F. Wedgwood, M.D., PH.D., *Assistant Clinical Professor of Pediatrics.*
- V. Robin Weersing, PH.D., *Assistant Professor in the Child Study Center.*
- Albert C. Weihl, M.D., *Assistant Professor of Surgery (Emergency Medicine).*
- Ulrich H. Weil, M.D., *Clinical Professor of Orthopaedics and Rehabilitation.*
- Richard B. Wein, M.D., *Clinical Instructor in Medicine.*
- John C. Weinberg, M.B.B.CH., *Assistant Clinical Professor of Anesthesiology.*
- Norman J. Weinberger, M.D., *Assistant Clinical Professor of Pediatrics.*
- Jay J. Weiner, M.D., *Assistant Clinical Professor of Medicine.*
- David A. Weinshel, M.D., *Assistant Clinical Professor of Medicine.*
- Mark H. Weinstein, M.D., *Assistant Clinical Professor of Surgery (Plastic).*
- Norman Weinstein, M.D., *Assistant Clinical Professor of Pediatrics.*
- Alan D. Weinstock, M.D., *Associate Clinical Professor of Anesthesiology.*
- Stuart A. Weinzimer, M.D., *Assistant Professor of Pediatrics (Endocrinology).*
- Eleanor C. Weir, B.V.M.S., *Professor (Adjunct) of Comparative Medicine.*
- Otto G. Weis, M.D., *Clinical Instructor in Medicine.*
- Bertrand S. Weisbart, D.D.S., *Associate Clinical Professor of Surgery (Dental).*
- Irwin M. Weisbrot, M.D., *Associate Clinical Professor of Pathology.*
- Philip I. Weisinger, M.D., *Assistant Clinical Professor of Medicine.*
- Erica Weiss, M.D., *Clinical Instructor in Psychiatry.*
- Gordon Weiss, *Clinical Instructor in the Child Study Center.*

Pnina G. Weiss, M.D., *Assistant Clinical Professor of Pediatrics.*
Robert M. Weiss, M.D., *Professor of Surgery (Urology).*
Roger P. Weissberg, PH.D., *Research Affiliate in the Child Study Center.*
Sharon B. Weissman, M.D., *Assistant Clinical Professor of Medicine.*
Sherman M. Weissman, M.D., *Sterling Professor of Genetics and Professor of Medicine.*
James M. Weisz, M.D., *Clinical Instructor in Ophthalmology and Visual Science.*
Carol C. Weitzman, M.D., *Assistant Professor of Pediatrics and in the Child Study Center.*
Marc L. Weitzman, M.D., *Assistant Clinical Professor of Ophthalmology and Visual Science.*
Andrew C. Wells, M.D., *Clinical Instructor in Medicine.*
Carolyn K. Wells, B.A., *Lecturer in Medicine.*
Thomas Welte, PH.D., *Associate Research Scientist in Pathology.*
Li Wen, M.D., PH.D., *Assistant Professor of Medicine (Endocrinology).*
Detlef Wencker, M.D., SC.D., *Assistant Professor of Medicine.*
Markus R. Wenk, PH.D., *Associate Research Scientist in Cell Biology.*
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Michael J. Werdmann, M.D., *Assistant Clinical Professor of Surgery (Emergency Medicine).*
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Joan M. P. Wexler, M.S.W., *Assistant Clinical Professor of Psychiatry (Social Work).*
Richard F. Whelan, M.D., *Assistant Clinical Professor of Pediatrics.*
John C. Whetham, M.D., *Associate Clinical Professor of Obstetrics and Gynecology.*
Michael L. Whitcomb, M.D., *Assistant Clinical Professor of Medicine.*
Cay White, M.D., *Clinical Instructor in the Child Study Center.*
Colin White, M.D., *Ira Vaughn Hiscock Professor Emeritus of Public Health and Statistics and Lecturer in Public Health (Biostatistics).*
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Jules White, M.D., *Assistant Clinical Professor of Diagnostic Radiology.*
Kathleen P. White, M.D., *Assistant Clinical Professor of Medicine.*
Kevin P. White, PH.D., *Assistant Professor of Genetics.*
Robert E. White, M.D., *Assistant Clinical Professor of Medicine.*
Robert I. White, Jr., M.D., *Professor of Diagnostic Radiology.*
Robert S. White, M.D., *Assistant Clinical Professor of Psychiatry.*
William D. White, PH.D., *Associate Professor of Public Health.*
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C. Preston Wiles, Jr., M.D., *Assistant Clinical Professor in the Child Study Center.*

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Joseph A. Wilkinson, M.D., *Assistant Clinical Professor of Surgery (Emergency Medicine)*.
J. Michael Willett, M.D., *Assistant Clinical Professor of Surgery (Otolaryngology)*.
Debra J. Williams, M.D., *Assistant Clinical Professor of Medicine*.
James E. Williams, M.D., *Clinical Instructor in Medicine*.
Janet E. Williams, M.D., *Assistant Clinical Professor of Psychiatry and in the Child Study Center*.
Keith P. Williams, M.D., *Associate Professor of Obstetrics and Gynecology*.
Kenneth R. Williams, Ph.D., *Professor (Adjunct) of Research in Molecular Biophysics and Biochemistry*.
Anne Williamson, Ph.D., *Associate Professor of Neurosurgery*.
Lynn D. Wilson, M.D., *Associate Professor of Therapeutic Radiology and Dermatology*.
Madeline S. Wilson, M.D., *Assistant Professor of Medicine (General Medicine)*.
Robert D. Windom, M.D., *Assistant Clinical Professor of Pediatrics*.
Goldie O. Winn, M.S.W., *Clinical Instructor in the Child Study Center (Social Work)*.
Stephen M. Winter, M.D., *Associate Clinical Professor of Medicine*.
Diane Wirz, M.D., *Clinical Instructor in Neurology*.
Claire V. Wiseman, Ph.D., *Assistant Clinical Professor of Psychiatry*.
Prescott S. Wiske, M.D., *Associate Clinical Professor of Medicine*.
Daryl J. Wisler, M.D., *Clinical Instructor in Pediatrics*.
Adam V. Wisniewski, Ph.D., *Assistant Professor of Medicine (Occupational Medicine)*.
David H. Witt, M.D., *Clinical Instructor in Medicine*.
Robert A. Wiznia, M.D., *Associate Clinical Professor of Ophthalmology and Visual Science*.
Sandy E. Wolf, M.S.W., *Clinical Instructor in Psychiatry*.
Emanuel C. Wolff, M.D., *Lecturer in the Child Study Center*.
David M. Wolfsohn, M.D., *Clinical Instructor in Medicine*.
Steven Wolfson, M.D., *Associate Clinical Professor of Medicine*.
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Andrew S. Wong, M.D., *Clinical Professor of Ophthalmology and Visual Science*.
Brian Wong, M.D., *Associate Professor of Medicine (Infectious Diseases)*.
Jeffrey G. Wong, M.D., *Associate Clinical Professor of Medicine*.
Raymond P. Wong, M.D., *Assistant Clinical Professor of Medicine*.
Suchat Wongcharatrawee, M.D., *Associate Research Scientist in Medicine (Digestive Diseases)*.
Chester C. Wood, M.D., *Assistant Clinical Professor of Pediatrics*.
Larry Wood, M.Sc., *Research Affiliate in the Child Study Center*.
Deborah Woodruff, Ph.D., *Assistant Clinical Professor of Psychiatry*.
Charles A. Woods, M.D., *Assistant Clinical Professor of Pediatrics*.
Scott W. Woods, M.D., *Associate Professor of Psychiatry and Diagnostic Radiology*.
Joseph L. Woolston, M.D., *Professor in the Child Study Center and of Pediatrics*.
Andrew C. Wormser, M.D., *Assistant Clinical Professor of Medicine*.
Steven Wormsley, Ph.D., *Associate Research Scientist in Medicine (Infectious Diseases)*.

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- Fred S. Wright, M.D., *Professor of Medicine and Cellular and Molecular Physiology.*
- Hastings K. Wright, M.D., *Professor Emeritus of Surgery.*
- Olivia R. Wright, M.D., *Clinical Instructor in Medicine.*
- Sarah A. Wright, M.S.N., *Lecturer in Surgery (Emergency Medicine).*
- Ann C. Wu, M.D., *Clinical Instructor in Pediatrics.*
- Barry J. Wu, M.D., *Associate Clinical Professor of Medicine.*
- Joseph Wu, M.D., *Assistant Clinical Professor of Orthopaedics and Rehabilitation.*
- Kun Wu, M.D., PH.D., *Associate Research Scientist in Neurosurgery.*
- Min Wu, PH.D., *Associate Research Scientist in Psychiatry.*
- Yan Yun Wu, M.D., PH.D., *Assistant Professor of Laboratory Medicine.*
- Yuan-Ming Wu, M.D., *Associate Research Scientist in Neurology.*
- Stephen A. Wyatt, D.O., *Research Affiliate in Psychiatry.*
- Harold W. Wyckoff, PH.D., *Professor Emeritus of Molecular Biophysics and Biochemistry.*
- Joanna Wynne, M.D., *Assistant Clinical Professor of Pediatrics.*
- Michael G. Wysoki, M.D., *Assistant Professor of Diagnostic Radiology.*
- John J. Wysolmerski, M.D., *Associate Professor of Medicine (Endocrinology).*
- Ying Xia, M.D., PH.D., *Associate Professor of Pediatrics (Respiratory Medicine).*
- Bing Xie, M.D., *Research Affiliate in Pathology.*
- Fuqiang Xu, PH.D., *Associate Research Scientist in Diagnostic Radiology.*
- Jianchao Xu, M.D., PH.D., *Associate Research Scientist in Medicine (Nephrology).*
- Tian Xu, PH.D., *Associate Professor of Genetics.*
- Heng-Lin Yan, PH.D., *Associate Research Scientist in Pediatrics.*
- Jun Yan, PH.D., *Associate Research Scientist in Medicine (Rheumatology).*
- Eiji Yanagisawa, M.D., *Clinical Professor of Surgery (Otolaryngology).*
- Kay Yanagisawa, M.S., *Lecturer in Surgery (Otolaryngology).*
- Ken Yanagisawa, M.D., *Assistant Clinical Professor of Surgery (Otolaryngology).*
- Guangwei Yang, PH.D., *Associate Research Scientist in Molecular Biophysics and Biochemistry.*
- Jinghua Yang, PH.D., *Assistant Professor of Surgery (Trauma and Surgical Critical Care).*
- Kai H. Yang, M.D., *Assistant Clinical Professor of Medicine.*
- Youshan Yang, PH.D., *Associate Research Scientist in Cellular and Molecular Physiology.*
- Teresa Yang-Feng, PH.D., *Professor (Adjunct) of Genetics.*
- Gang-Qing Yao, M.D., *Research Scientist in Comparative Medicine.*
- Hang Yao, PH.D., *Associate Research Scientist in Anesthesiology.*
- Yukio Yasukochi, M.D., PH.D., *Associate Research Scientist in Genetics.*
- Bogdan Yatsula, PH.D., *Associate Research Scientist in Pathology.*
- Reza Yavari, M.D., *Clinical Instructor in Medicine.*
- Mark F. Yeckel, PH.D., *Assistant Professor of Neurobiology.*
- Arthur Yee, M.D., *Assistant Clinical Professor of Medicine.*
- Raymond Yesner, M.D., *Professor Emeritus of and Senior Research Scientist in Pathology.*
- Paul Yeung, M.D., *Assistant Clinical Professor in the Child Study Center.*
- Jean K. Yi, M.D., *Clinical Instructor in Diagnostic Radiology.*
- Y. Whitney Yin, M.D., PH.D., *Associate Research Scientist in Molecular Biophysics and Biochemistry.*

- Zhinan Yin, M.D., PH.D., *Assistant Professor of Medicine (Rheumatology)*.
- Kimberly A. Yonkers, M.D., *Associate Professor of Psychiatry and Lecturer in Epidemiology*.
- David C. Youmans, M.D., *Clinical Instructor in Diagnostic Radiology*.
- Eytan Young, M.D., *Assistant Clinical Professor of Surgery (Otolaryngology)*.
- Jennifer L. Young, M.D., *Clinical Instructor in Pediatrics*.
- John L. Young, M.D., *Associate Clinical Professor of Psychiatry*.
- Lawrence H. Young, M.D., *Professor of Medicine (Cardiology)*.
- Richard S. Young, M.D., *Associate Clinical Professor of Pediatrics and Neurology*.
- Herbert Yu, M.D., PH.D., *Assistant Professor of Epidemiology*.
- Joseph Yu, M.D., *Clinical Instructor in Medicine*.
- Xiaofeng Yu, M.D., PH.D., *Associate Research Scientist in Genetics*.
- James Yue, M.D., *Assistant Professor of Orthopaedics and Rehabilitation*.
- Ning Yue, PH.D., *Associate Clinical Professor of Therapeutic Radiology*.
- George Yuen, M.D., *Assistant Clinical Professor of Medicine*.
- Joseph A. Zaccagnino, M.P.H., *Lecturer in Public Health*.
- Dino Zacharakos, M.D., *Assistant Clinical Professor of Anesthesiology*.
- Craig S. Zalis, M.D., *Clinical Instructor in Medicine*.
- Alicia Zalka, M.D., *Clinical Instructor in Dermatology*.
- Leonard H. Zamore, M.D., *Associate Clinical Professor of Obstetrics and Gynecology*.
- Theodore Zanker, M.D., *Associate Clinical Professor in the Child Study Center*.
- Barry L. Zaret, M.D., *Robert W. Berliner Professor of Medicine and Professor of Diagnostic Radiology*.
- Joel S. Zaretsky, M.D., *Assistant Clinical Professor of Medicine*.
- Stuart W. Zarich, M.D., *Assistant Clinical Professor of Medicine*.
- Hitten P. Zaveri, PH.D., *Associate Research Scientist in Neurology*.
- Marlene Zawin, M.D., *Assistant Professor of Diagnostic Radiology*.
- Dejan P. Zecevic, PH.D., *Research Scientist in Cellular and Molecular Physiology*.
- Caroline J. Zeiss, PH.D., B.V.M.S., *Assistant Professor of Comparative Medicine and Ophthalmology and Visual Science*.
- Joseph H. Zelson, M.D., *Clinical Professor of Pediatrics*.
- Daniel Zelterman, PH.D., *Professor of Public Health (Biostatistics)*.
- David Zenisek, PH.D., *Assistant Professor of Cellular and Molecular Physiology*.
- John S. Zesk, M.D., *Assistant Clinical Professor of Medicine*.
- Heping Zhang, PH.D., *Associate Professor of Public Health (Biostatistics) and Statistics and in the Child Study Center*.
- Hui Zhang, PH.D., *Associate Professor of Genetics*.
- Junhui Zhang, M.D., *Associate Research Scientist in Medicine (Nephrology)*.
- Ping Zhang, PH.D., *Associate Research Scientist in Cellular and Molecular Physiology*.
- Ping-Xia Zhang, M.D., *Associate Research Scientist in Pediatrics (Immunology)*.
- Shao-Min Zhang, M.D., PH.D., *Associate Research Scientist in Pathology*.
- Xuchen Zhang, PH.D., *Associate Research Scientist in Medicine (Pulmonary and Critical Care)*.
- Zhiyuan Zhang, M.D., *Associate Research Scientist in Immunobiology*.

Zhushan Zhang, PH.D., *Associate Research Scientist in Pathology.*
Hongyu Zhao, PH.D., *Ira V. Hiscock Associate Professor of Public Health and Genetics.*
Zhiyong Zhao, PH.D., *Associate Research Scientist in Pediatrics (Endocrinology).*
Jian-Yu Zheng, PH.D., *Associate Research Scientist in Genetics.*
Liangbiao Zheng, PH.D., *Associate Professor of Epidemiology.*
Tao Zheng, M.D., *Assistant Professor of Medicine (Pulmonary and Critical Care).*
Tongzhang Zheng, D.Sc., *Associate Professor of Epidemiology (Environmental Health).*
Wenxin Zheng, M.D., *Associate Professor of Pathology.*
Xiaobo Zhong, PH.D., *Associate Research Scientist in Genetics.*
Yuehan Zhou, M.D., *Associate Research Scientist in Cellular and Molecular Physiology.*
Qingbing Zhu, M.D., *Assistant Professor of Anesthesiology.*
Zhou Zhu, M.D., *Assistant Professor of Medicine (Pulmonary and Critical Care).*
Edward F. Zigler, PH.D., *Sterling Professor of Psychology and in the Child Study Center.*
Erio Ziglio, PH.D., *Lecturer in Public Health (Global Health).*
Benjamin J. Zigun, M.D., *Assistant Clinical Professor of Psychiatry.*
Kristan Zimmerman, M.D., *Assistant Clinical Professor of Diagnostic Radiology.*
Lynne D. Zimmerman, PH.D., *Assistant Clinical Professor in the Child Study Center.*
Susan E. Zimmerman, M.S.W., *Assistant Clinical Professor of Psychiatry (Social Work).*
Zoran Zimolo, M.D., PH.D., *Assistant Clinical Professor of Psychiatry.*
Jonathan R. Zirn, M.D., *Clinical Instructor in Dermatology.*
Ronald A. Zlotoff, M.D., *Clinical Instructor in Medicine.*
Ada Zohar, PH.D., *Research Affiliate in the Child Study Center.*
Howard V. Zonana, M.D., *Professor of Psychiatry.*
Tony Zreik, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology.*
I. George Zubal, PH.D., *Associate Professor of Diagnostic Radiology.*
Bella Zubkov, M.D., *Clinical Instructor in Dermatology.*
Bernard D. Zuckerman, M.D., *Assistant Clinical Professor of Ophthalmology and Visual Science.*
Felice R. Zwas, M.D., *Assistant Clinical Professor of Medicine.*

History and Facilities

HISTORY

The School of Medicine was established by passage of a bill in the Connecticut General Assembly in 1810 granting a charter for “The Medical Institution of Yale College,” to be conducted under the joint supervision of the college and the Connecticut State Medical Society. The institution was formally opened in 1813, and the first degrees were conferred the following year. In 1884, with the approval of the Medical Society, the original charter was amended to place the School definitely in the control of the College as the Medical School of Yale College. The name Yale College was changed to Yale University in 1887, and the name of the Medical School was automatically changed. The present name was adopted in 1918.

Shortly after the establishment of the School, members of its faculty and physicians in the state joined with other citizens in raising funds for a hospital in New Haven to provide, among other services, clinical facilities for the instruction of medical students. The outcome of these efforts was the incorporation of the General Hospital Society of Connecticut in 1826, and the opening of the New Haven Hospital in 1832. The New Haven Dispensary was founded in 1872 and later became a division of the New Haven Hospital. Instruction in clinical medicine has been conducted in the hospital continuously since its establishment.

A merger was effected in 1945 between the New Haven Hospital and Grace Hospital to form the Grace–New Haven Community Hospital. The affiliation agreement between the hospital and University was revised in 1965 and the name of the institution changed to Yale–New Haven Hospital.

The combined facilities of the School of Medicine, the School of Nursing, the Connecticut Mental Health Center, and the Yale–New Haven Hospital constitute the Yale–New Haven Medical Center.

Members of the professional staffs of the Veterans Affairs Connecticut Health Care System, West Haven, and the Connecticut Mental Health Center, 34 Park Street, hold appointments in Yale University.

FACILITIES

Located southwest of the New Haven Green and Yale’s Old Campus, Yale–New Haven Medical Center includes the School of Medicine, School of Nursing, Yale–New Haven Hospital (Y-NHH), Connecticut Mental Health Center, and the John B. Pierce Laboratory.

The School of Medicine’s Sterling Hall of Medicine, 333 Cedar Street, is the central building. This handsome granite structure with domed roof includes administrative offices, the 450-seat Mary S. Harkness Auditorium, the Child Study Center, the departments of Cellular and Molecular Physiology, Pharmacology, Molecular Biophysics and Biochemistry, Genetics, Microbial Pathogenesis, and Cell Biology, and the sections of Neurobiology, Comparative Medicine, and History of Medicine.

The Harvey Cushing/John Hay Whitney Medical Library, also located in Sterling Hall of Medicine, houses over 433,000 volumes, subscribes to more than 2,400 print journals, and offers electronic access to resources to facilitate the use of the international biomedical literature.

Connected to the south end of Sterling Hall is the Jane Ellen Hope Building, a teaching facility of conference rooms and lecture halls. At Sterling's north end is the Nathan Smith Building, which spans Cedar Street, joining the School of Medicine and Yale-New Haven Hospital patient-care facilities, including the Hunter Building. The Children's Hospital at Yale-New Haven is connected to two other hospital pavilions by a four-story atrium. The Nathan Smith Building contains offices and laboratories of the Yale Cancer Center and the departments of Internal Medicine and Genetics. Entrance to the Hope and Nathan Smith buildings is at 333 Cedar Street.

Yale-New Haven Hospital (Y-NHH), 20 York Street, including the Children's Hospital at Yale-New Haven, is a 944-bed facility with 92 bassinets. School of Medicine faculty are attending physicians at Y-NHH, the School's primary teaching hospital. All medical and surgical specialties are represented at the hospital, which discharged 43,516 inpatients in the year ending September 30, 2002. During that period, ambulatory services treated 359,473 outpatients and emergency services had 91,259 visits. The hospital also houses the clinical component of the Yale Cancer Center, a joint program of Y-NHH and the School of Medicine.

The Children's Hospital provides most inpatient and outpatient pediatric services, and also includes a rooftop helipad, high-risk maternity and newborn units, and labor, delivery, and postpartum services.

Yale-New Haven Hospital is the flagship hospital of the Yale New Haven Health System, an integrated delivery system that includes the Southern Connecticut Health System, the parent corporation of Bridgeport Hospital, and Greenwich Health Care, the parent corporation of Greenwich Hospital. Yale New Haven Health System also has relationships for managed care with the Westerly Hospital and Norwalk Hospital. The Yale New Haven Health System, the state's largest, is among the fifty largest health systems in the nation.

The Laboratory of Epidemiology and Public Health is the School's other major teaching facility. The nine-story building at 60 College Street contains classrooms, laboratories, and an auditorium. It also is the site of two World Health Organization collaborating centers, one focusing on arbovirus research and the other on health promotion policy and research. A newly renovated building at 47 College Street houses the Epidemiology and Public Health library and various administrative offices.

Laboratories and offices for the School's clinical departments are located in contiguous buildings across Cedar Street from Sterling Hall. The Anthony N. Brady Memorial Laboratory and the adjoining Lauder Hall provide offices and laboratories for the departments of Pathology, Ophthalmology and Visual Science, Anesthesiology, and Diagnostic Radiology. Farnam Memorial Building and the Laboratory of Surgery, Obstetrics and Gynecology provide facilities for the departments of Pathology, Surgery, Orthopaedics and Rehabilitation, and Obstetrics and Gynecology, and for the Section of Comparative Medicine.

The Y-NHH Clinic Building connects Farnam with the Laboratory for Medicine and Pediatrics (LMP). Adjacent to the Clinic Building are Tompkins Memorial Pavilion and Fitkin Memorial Pavilion, facilities shared by the hospital and the School. They contain the departments of Anesthesiology and Neurosurgery; sections of Endocrinology and Cardiology; and laboratories and offices for the Department of Pediatrics. On the other side of the Clinic Building is Fitkin Amphitheater, the LMP, and the Lippard Laboratory for Clinical Investigation, where clinical research is conducted in the departments of Dermatology, Internal Medicine, Neurology, and Pediatrics.

Offices of the Department of Psychiatry are located in the Grace Building, 25 Park Street. Many of this department's teaching, research, and patient-care activities are conducted at the Connecticut Mental Health Center, the Yale Psychiatric Institute, and the Yale Psychiatric Hospitals.

The Yale Physicians Building, a four-story structure on the southwest corner of Howard and Davenport avenues, contains outpatient specialty and consultative services, X-ray, laboratories, and a pharmacy. It also houses academic offices for orthopaedics and rehabilitation, urology, otorhinolaryngology, and plastic surgery.

The Magnetic Resonance (MR) Center, on the corner of Davenport and Howard avenues, includes a whole body magnet for metabolic studies in humans and a high-field spectrometer, used by the Department of Molecular Biophysics and Biochemistry for basic research. The Department of Diagnostic Radiology maintains three MR imaging systems, two for clinical examination and one for research.

The Boyer Center for Molecular Medicine, at the intersection of Congress Avenue and College Street, houses multidisciplinary programs in molecular genetics, molecular and developmental neurobiology, molecular oncology and development, and molecular cardiobiology for Yale and Howard Hughes Medical Institute scientists.

The Congress Avenue Building, completed in November 2002, is not only the medical school's largest major state-of-the-art research and educational facility; it is the largest on the entire Yale campus. This outstanding facility is located on the corner of Cedar Street and Congress Avenue and encompasses a full city block. The new building includes six floors of laboratories for disease-based research, core facilities for genomics and magnetic resonance imaging, and state-of-the-art teaching space for anatomy and histology. This facility will provide laboratories and offices for the departments of Internal Medicine, Genetics, Immunobiology, and Diagnostic Radiology.

Edward S. Harkness Memorial Hall, 367 Cedar Street, is a student dormitory with the Nicholas P. R. Spinelli student lounge, the Class of 1958 Fitness Center, dining facilities, and the Phyllis Bodel Childcare Center. The School of Medicine offices of admissions, student affairs, financial aid, and international health and student programs are located on the second floor. The offices of education, student research, M.D./Ph.D. Program, and multicultural affairs are located on the third floor.

The Veterans Affairs Connecticut Health Care System, West Haven, a major teaching affiliate of the School of Medicine, is the site of the Paralyzed Veterans of America/EPVA Center for Neuroscience and Regeneration Research of Yale University and the Yale/VA Positron Emission Tomography Center, an advanced imaging facility.

Harvey Cushing / John Hay Whitney Medical Library

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The Cushing/Whitney Medical Library serves the entire Yale-New Haven Medical Center and the health care needs of Yale University, and also offers services to health professionals at large and to other libraries.

The Medical Library is a comprehensive resource for research, patient care, and educational materials. The library collects books, journals, databases, and reference materials in print and electronic formats in support of programs in the health sciences, including medicine, nursing, and public health as well as basic science research. The library, which was renovated in 1990, houses over 433,000 volumes and has over 2,400 current print journal subscriptions. At present, the library Web site lists over 3,000 electronic journals and 268 electronic books.

The Medical Library has two large computing clusters in the Information Room for access to a wide array of electronic and educational resources. The library's Web site provides access to Orbis, the Yale Online Catalog, the Ovid Gateway (MEDLINE, PsycInfo, Current Contents, and more), electronic journals and textbooks, and an A-Z list of many more electronic resources. An extensive collection of medical education software is available from the workstations in the Information Room and the Computer Resource Laboratory. The Computer Resource Laboratory contains twenty-two workstations with access to electronic resources, e-mail, word processing, and the Internet, as well as scanners, printers, and imaging equipment.

A staff of fifteen professional librarians and twenty-three library assistants provide reference assistance and in-depth consultation, conduct tours, teach classes in database and Web searching, acquire and organize the collection, lend materials, and provide a photocopy and document delivery service (obtaining material the library does not own).

The Historical Library, a section of the Cushing/Whitney Medical Library, contains a large and unique collection of rare medical books plus medical journals to 1920, a collection of prints and drawings, pamphlets, and photographs, as well as current works on the history of medicine. The library also owns 325 medical incunabula, over seventy-five manuscript volumes from the twelfth through sixteenth centuries, and one of the most extensive collections of weights and measures in the world.

The Epidemiology and Public Health Library is associated with the Medical Library and contains over 25,000 volumes and 350 current journal subscriptions as well as information in electronic format on biostatistics, epidemiology, health policy and administration, environmental health, and global health.

Sterling Memorial Library, Yale's main library and the largest library on campus, houses more than four million volumes and serves as the center of the library system. Twenty-two libraries are included in the Yale University Library system, including Kline Science Library, the Law Library, and the Seeley G. Mudd Library, which houses the government documents collection. EliExpress (Yale Libraries document delivery service) couriers transport library books daily among these and the other library units on campus.

ASSOCIATES OF THE YALE MEDICAL LIBRARY

Martin E. Gordon, M.D., *Chair*

Toby A. Appel, *Secretary*

Telephone: 785-4354

The associates were formed in 1948 to assist in extending the library's services, particularly thorough development of the collections. Membership information is available from the secretary.

Degree Programs

Students at the School of Medicine may be candidates for the degrees of Doctor of Medicine (M.D.), Master of Public Health (M.P.H.), or Doctor of Public Health (Dr.P.H.). The School of Medicine, jointly with the Graduate School, administers a combined program leading to the degrees of Doctor of Medicine (M.D.) and Doctor of Philosophy (Ph.D.). In addition, the School of Medicine administers a combined program leading to the Doctor of Medicine (M.D.) and Master of Public Health (M.P.H.) degrees. Special arrangements may be made with the appropriate associate deans to receive the combined Doctor of Medicine (M.D.) and Doctor of Jurisprudence (J.D.) degrees, the combined Doctor of Medicine (M.D.) and Master of Divinity (M.Div.) degrees, and the combined Doctor of Medicine (M.D.) and Master of Business Administration (M.B.A.) degrees. The School of Medicine also offers a program leading to a Physician Associate certificate combined with a Master in Medical Science.

DOCTOR OF MEDICINE

The degree of Doctor of Medicine is conferred upon students who have satisfactorily completed the requirements stated below.

1. Pass all of the required basic science courses.
2. Pass all of the required clinical clerkships.
3. Pass the examinations of the United States Medical Licensing Examination (USMLE), Steps I and II.
4. Submit an approved dissertation by mid-March of the year of graduation.
5. Meet all of the requirements of the Progress Committee and Board of Permanent Officers concerning academic standing, moral and ethical character, emotional stability, and professional conduct.

Because of the heavy demands in terms of time and energy required for the study of medicine, the Yale School of Medicine discourages students from assuming extracurricular activities that may prove burdensome. Such extracurricular work and/or professional activity will not justify inadequate academic performance. Any student wishing to work or pursue a professional activity other than medicine that would consume a significant amount of time must have the permission of the associate dean for student affairs.

Admissions

The Yale University School of Medicine seeks to provide an education in the scholarly and humane aspects of medicine and to foster the development of leaders who will advance medical practice and knowledge. The Committee on Admissions in general seeks to admit students who seem best suited for the educational programs and aims of the School. In particular, the committee looks for intelligent, mature, and highly motivated students who show the greatest promise for becoming leaders and contributors in

medicine. The Committee on Admissions also considers very carefully personal qualities necessary for the successful study and practice of medicine. These include integrity, common sense, personal stability, dedication to the ideal of service, and the ability to inspire and maintain confidence.

School of Medicine graduates must have the knowledge and skills to function in a broad variety of clinical situations and to render a wide spectrum of patient care. In addition to scholastic accomplishments and potential, applicants must have the physical capacities and personal characteristics to meet the full requirements of the School's curriculum and to graduate as skilled and effective practitioners of medicine. The policy of the School of Medicine regarding nonacademic considerations in the admissions process is available upon request from the Office of Admissions.

The School also attempts to ensure adequate representation of women and all minority groups and a diversity of interests and backgrounds. All applications to the Yale University School of Medicine are given careful consideration without regard to sex, race, age, religion, national origin, sexual orientation, or financial status. In evaluating candidates, the committee takes into consideration many factors including academic record, MCAT scores, record of activities and accomplishments, recommendations from pre-medical committees and individual science teachers, and personal interviews.

It is recommended that students enter medical school after four years of study in a college of arts and sciences. Students holding advanced degrees in science or other fields are also considered. Foreign students must have completed at least one year of study in an American college prior to application. Students who have been refused admission on three prior occasions are ineligible to apply for admission to the first-year class.

The minimum requirements for admission to the first-year class are:

1. Attendance for three academic years, or the equivalent, at an accredited college of arts and sciences or institute of technology.
2. Satisfactory completion of the following courses including laboratory work:
 - General Biology or Zoology
 - General Chemistry
 - Organic Chemistry
 - General Physics

(Acceptable courses in these subjects usually extend over one year and are given six to eight term hours credit.) These courses should be completed in a U.S. college or university. Advanced courses may be substituted for introductory-level courses in each of these subjects.

The Committee on Admissions has no preference as to a major field for undergraduate study and leaves this decision to students, with the advice that they advance beyond the elementary level in the field of their choice rather than pursue an undirected program. A liberal education is the supporting structure for graduate study, and must encompass understanding of the humanities, arts, and society as well as the scientific foundations of technology and civilization. The student of medicine enters a profession closely allied to the natural sciences and must be prepared to cope with chemistry and

biology at the graduate level. Students entering college with a strong background in the sciences, as demonstrated by advanced placement, are encouraged to substitute advanced science courses for the basic requirements listed above.

Application Process

The Yale University School of Medicine participates in the “common” application process of the American Medical College Application Service (AMCAS). Applicants must first submit their AMCAS application, on which they indicate that they wish to apply to the Yale School of Medicine. After submitting the AMCAS application, applicants must complete the Yale Supplemental Application, which must be submitted online (see below for details).

Inquiries regarding AMCAS should be addressed to the American Medical College Application Service, 2501 M Street NW, Lobby 26, Washington DC 20037-1300. AMCAS can also be reached by telephone at 202.828.0600 or by e-mail at amcas@aamc.org. Extensive information can also be obtained at the AMCAS Web site: www.aamc.org/.

Inquiries to the Yale School of Medicine regarding the degree of Doctor of Medicine should be addressed to the Office of Admissions, Yale University School of Medicine, Edward S. Harkness Hall, 367 Cedar Street, New Haven CT 06510. The e-mail address of the admissions office is medical.admissions@yale.edu. Information can also be obtained online at <http://info.med.yale.edu/education/admissions/>. Inquiries are welcome at any time.

AMCAS applications may not be submitted earlier than June 1 and must be submitted no later than October 15 of the year prior to the fall in which enrollment is sought. Yale Supplemental Applications must be submitted online no later than November 15. Applicants seeking admission under the Early Decision Plan must submit the AMCAS application by August 1 and the Yale Supplemental Application by August 31. The number of students admitted each year for studies leading to the M.D. degree is approximately 100.

A complete application consists of the following components:

1. AMCAS application and all required components of the application (see 2 and 5 below).
2. Complete official transcripts from all colleges attended. Transcripts should be sent from the colleges directly to AMCAS.
3. Yale Supplemental Application submitted online no later than November 15. The Supplemental Application may be found at <http://info.med.yale.edu/education/admissions/>.
4. An evaluation from the applicant’s Premedical Advisory Committee, or individual letters from three of the applicant’s teachers, two of whom should be in science fields. These evaluations must be sent directly to Yale.
5. Scores from the Medical College Admission Test (MCAT) must be submitted in conjunction with the AMCAS application. For information on the MCAT, applicants should communicate directly with the MCAT Program Office, PO Box 4056, Iowa City IA 52243. Information on the MCAT can also be obtained online at www.aamc.org/. Scores of tests taken earlier than 1999 will not be accepted.

6. A fee of \$75 or an AMCAS fee waiver must accompany the Yale supplemental application. The fee is not refundable.

During the course of the admissions process, selected applicants will be invited for personal interviews with members of the Committee on Admissions at Yale. Regional interviews can be arranged when necessary.

Early Decision Plan

The Yale School of Medicine offers an Early Decision Plan (EDP). Under this plan, a student may make a single early application to the school of his or her first choice and is guaranteed a prompt decision by the school. AMCAS applications for the EDP program must be submitted by August 1. Yale Supplemental Applications must be submitted by August 31.

Admission to Advanced Standing

Because of a limited number of available positions, the Yale University School of Medicine does not routinely consider requests for transfer with advanced standing. The only exception to this policy is that the School will consider applications into the second-year or third-year class from students who are enrolled in LCME-accredited medical schools in the United States or Canada and who have a compelling personal need to be at Yale.

The following three circumstances constitute “compelling personal need” under this policy:

1. The applicant’s spouse holds, or has been accepted for, a position in the Yale-New Haven Medical Center community as a student, a member of the house staff at Yale-New Haven Hospital, a postdoctoral fellow, or a faculty member.
2. There is a serious illness in the immediate family of the applicant, requiring the ill person to be in New Haven for treatment and the applicant to be in New Haven as the primary supportive member of the family during the time of the illness.
3. The applicant is on leave from his/her medical school and is enrolled in a doctoral degree program at Yale University, and completion of medical studies at the Yale School of Medicine would enable the applicant to achieve important and unique educational objectives that are not available at the original medical school.

The distance of the applicant from New Haven will also be taken into consideration. Regardless of other factors, students attending medical school in New York City, Connecticut, or Rhode Island will not normally be eligible to apply for advanced standing.

Transfer into the second-year class is possible only from medical schools with a basic science curriculum compatible with that at Yale. Transfer into the third-year class is contingent upon passing Step I of the United States Medical Licensing Examination (USMLE), and an applicant who fails USMLE Step I will not be considered for admission under any circumstances. Transfer into either the second- or third-year class is also contingent upon successful completion of courses being taken at the current medical school and upon the availability of space at Yale.

Eligible applicants will be evaluated competitively by the School's admissions committee, with decisions based on academic credentials, supporting material, interviews, and the urgency of the personal need to transfer. Overall qualifications are expected to be comparable to those of Yale students admitted through the regular admissions process.

All accepted applicants must matriculate in the year accepted. Applicants whose eligibility is established by marriage must be married at the time of matriculation, and the applicant's spouse must be in residence in New Haven and holding a position in the Yale-New Haven Medical Center community. Transfer students must complete all required clinical clerkships (including the fourth-year Primary Care Clerkship and the Integrative Clinical Medicine Clerkship) and the thesis requirement at the Yale University School of Medicine. If a transfer student wishes to spend an extra (fifth) year at Yale, one-half of the tuition for that year will be waived.

Completed transfer applications consist of Yale School of Medicine application forms, letters of recommendation, MCAT scores, college transcripts, a transcript from the current medical school, and a letter from the dean of students (or comparable official) at the current medical school. Inquiries regarding transfer applications should be addressed to the Office of Admissions, Yale University School of Medicine, 367 Cedar Street, New Haven CT 06510 or medical.admissions@yale.edu. **Transfer applications, including all supporting credentials, must be submitted by April 1 of the year the student wishes to enter Yale.**

Educational Objective

The educational objective of the School of Medicine is to develop physicians who are highly competent and compassionate practitioners of the medical arts, schooled in the current state of knowledge of both medical biology and patient care. It is hoped that Yale-trained physicians will establish a lifelong process of learning the medical, behavioral, and social sciences by independent study. The aim is to produce physicians who will be among the leaders in their chosen field, whether it be in the basic medical sciences, academic clinical medicine, or medical practice in the community. Belief in the maturity and responsibility of students is emphasized by creating a flexible program through anonymous examinations and the elimination of grades in pre-clerkship courses and by encouraging independent study and research.

Educational Philosophy: The Yale System

The Yale System of Medical Education remains unique among medical schools. It has been an important part of life at the Yale School of Medicine since 1931. Although it has undergone minor modifications in the intervening years, its essential spirit has remained intact, and it is a major reason why many students choose to come to Yale for their medical education.

The fundamental element of the system is the concept that Yale medical students are mature individuals, strongly motivated to learn, requiring guidance and stimulation rather than compulsion or competition for relative standing in a group. The corollary of

this concept is that students must assume more than usual responsibility for their education. Students should be considered adults in a graduate school and be permitted to enjoy as much freedom as is consistent with the fulfillment of requirements for the degree of Doctor of Medicine. Memorization of facts should be far less important than a well-rounded education in fundamental principles, training in methods of investigation, and the acquisition of the scientific habit of mind.

During the pre-clerkship years, attendance in basic science courses is not taken, lectures are held to a minimum, and much instruction occurs in small-group seminars or conferences. Students evaluate themselves through anonymous examinations. Their performance is assessed by the faculty through participation in seminars, by an anonymous qualifying examination at the end of each course, and by passing of the United States Medical Licensing Examinations.

In the first two years there are no grades, and there is no class ranking throughout medical school. While grades are not given and rank order not established, evaluation of students is an important part of the educational process. The faculty considers small-group teaching with interchange between faculty and students to be the most effective means of teaching and evaluation. Students should expect direct questioning at seminars and labs as an important adjunct to the evaluation process. The final decision of acceptable performance for a given course will remain with the chairperson of the department and/or the designated director of the course. Freed from the usual anxieties provoked by examinations, students tend to learn for their future rather than for tests. Competition for grades is eliminated and students are eager to help one another. Class spirit is remarkably high year after year. Upon completing a course, all students are strongly encouraged to submit an evaluation so that course directors can make changes based on student feedback, which is taken very seriously.

Finally, the Yale System requires each student to engage in a form of research activity, designed to foster development of a lifelong commitment to learning (see Required Thesis, pp. 120–21.).

Curriculum Management

THE EDUCATIONAL POLICY AND CURRICULUM COMMITTEE (EPCC)

The Board of Permanent Officers, composed of the tenured faculty of the School, had delegated during the 1960s the governance of educational matters to the Medical School Council. The tenured faculty has now accepted direct responsibility for the curriculum. Currently, a single body, the Educational Policy and Curriculum Committee, holds a broad mandate to change, integrate, or manage the curriculum, as appropriate to adapt to emerging needs.

The chair of the EPCC is the deputy dean for education, who oversees the activities of the EPCC, its subcommittees, and the Office of Education, and is responsible for implementation of new curricular policies that have been approved by the Board of Permanent Officers.

The EPCC consists of three chairs of departments, five faculty elected by their peers, eight students (two from each class year), and *ex officio* members: the associate dean for

student affairs, the chair of the Medical School Council, the director of the M.D./Ph.D. Program, the director of the Office of Student Research, the associate dean for admissions, the associate dean for administration, and an elected representative of the Yale Medical School Alumni. The chair of the EPCC reports during each academic year before the Board of Permanent Officers and the Medical School Council. The chair also makes presentations throughout the year to the Friday meetings of the collegium of departmental chairs as well as meeting weekly with the associate dean for student affairs.

In addition to responsibility for the curriculum, the EPCC is further charged with addressing the status of teaching at the School of Medicine, the evaluation and rewarding of the teaching process, the advisory relationships between teachers and students, and the general philosophy of the educational system. The EPCC has the authority to arbitrate final proposals. The chair of the EPCC is an *ex officio* member of all subcommittees.

MANAGEMENT OF EDUCATIONAL MISSION

Reporting to the EPCC are three education subcommittees that oversee specific aspects of the educational mission: *Curriculum Design*, *Teaching*, and *Assessment*. Specific issues under the purview of each of these subcommittees are managed by various education working groups. Students from each medical school class are elected to serve on each of the twelve education working groups. They also automatically become members of the education subcommittees to which their working group reports. Several times a year the faculty leaders and elected students assemble to discuss issues of school-wide importance.

Curriculum Design Subcommittee

This subcommittee is charged with establishing the goals and curriculum of the educational program. Four education working groups report to this subcommittee: School-wide Objectives; Knowledge; Skills; and Attitudes.

Teaching Subcommittee

This subcommittee is charged with overseeing various aspects of the teaching mission. Three education working groups report to this subcommittee: Allocation of Resources; Technology; and Faculty Development.

Assessment Subcommittee

This subcommittee is charged with evaluating the quality and success of the educational program. Five education working groups report to this subcommittee: Assessment of Pre-clinical Curriculum; Assessment of Clinical Curriculum; Assessment of Electives; Assessment of Students (Pre-clinical); and Assessment of Students (Clinical).

THE THESIS COMMITTEE

The Thesis Committee is charged with the oversight of the M.D. thesis requirement, the selection of thesis prizes, and policy concerning the thesis and all aspects of independent research performed by medical students. The chair of the Thesis Committee is also appointed by the chair of the EPCC.

Pre-Clinical Curriculum

The first two years of the curriculum at Yale School of Medicine focus on providing students with a foundation in the science and art of medical practice. In the first year, the science of normal human biology is explored in four major areas. The structure of the human body is taught in *Principles of Human Anatomy and Development* via dissections and in *Diagnostic Imaging*. The normal function of the human body is taught in *Molecules to Systems*, which includes material from former departmental courses in biochemistry, cell biology and histology, and physiology. The structure and function of the brain and nervous system are taught in the *Neurobiology* and *Biological Basis of Behavior* courses. Teaching of the art of medicine begins the first day of school, which is devoted to the discussion of the importance of understanding the patient's culture in practicing medicine. The *Pre-Clinical Clerkship*, also called the *Doctor-Patient Encounter* course, introduces students to the principles and skills of medical interviewing and physical examination. In addition to didactic sessions, which now include sessions on "Understanding Your Patient: Psychosocial Aspects of Medical Practice," this course provides weekly opportunities for students to see patients and to meet in small groups with a *Clinical Tutor* (throughout the first two years). Further understanding of the patient is achieved in *Aspects of Child and Adolescent Development*, which presents a developmental approach to human behavior. The *Professional Responsibility* course is an opportunity to discuss the attitudes and behaviors of caring and ethical physicians who practice in this complex era of managed care. Integrating the art and science in medical practice requires problem-solving skills, which are developed in the *Principles of Clinical Reasoning* course. A major focus of this effort is discussing how to assess the value of information in the medical literature by understanding and applying the basic principles of *Biostatistics*. Throughout the year, students can hear various talks on the *History of Medicine*, which add depth and texture to the curriculum as well as provide some insight into the time continuum within which the practice of medicine exists.

The first year ends with a focus on the mechanisms of disease: *Pathology*, *Genetics*, and *Immunobiology*. The second year emphasizes abnormal human biology. During the fall term the major courses are *Microbiology*, *Pharmacology*, and *Epidemiology and Public Health*. Late in the first term and continuing throughout the year, students participate in *The Modules*, a large interdisciplinary course. Content traditionally taught in the separate disciplines of pathology, pathophysiology, pharmacology, clinical examination, laboratory medicine, and diagnostic radiology is organized according to organs or systems. The individual modules are: Blood, Cardiovascular, Clinical Neuroscience, Clinical Sciences of Psychiatry, Endocrine System, Digestive, Respiratory, Musculo-skeletal, Oncology, Renal and Urinary Tract, Reproduction, and Skin. Teaching the art of medicine continues throughout the year in the *Pre-Clinical Clerkship*, or *Doctor-Patient Encounter* course, which emphasizes developing greater skills in history taking and physical examination. Students continue to meet in small groups with their *Clinical Tutors*. In the second year, students are given the opportunity to assess their acquired clinical skills in the Standardized Patient Program at the University of Connecticut School of Medicine.

Pre-Third Year Information

In order to proceed to the third year, a student must satisfy the following requisites:

1. Pass the mandatory qualifying examinations for all first- and second-year courses.
2. Pass the *Doctor-Patient Encounter* course.
3. Complete assessment exercises in second-year modules.
4. Have a minimum of five commentaries from different required basic science courses in his/her evaluation folder.
5. Comply with all immunization requirements.

In addition, students are strongly encouraged to evaluate all of the basic science required courses.

The Third Year

USMLE

All students are required to sit for Step I of the United States Medical Licensing Examination for the first time by the end of December of the third year. The United States Medical Licensing Examination (USMLE) Steps I, II, and III are computer-administered at Prometric Testing Centers. This system has given students considerable flexibility over choice of test time and place. Students should consult the USMLE Web site for more information (<http://www.usmle.org/>).

The Office of Student Affairs holds an informational session in February. Applications may be downloaded from the USMLE Web site, or you may apply for the USMLE online at the NBME (National Board of Medical Examiners) Interactive Website for Applicants and Examinees (https://external1.nbme.org/ciwc/java/candidate_menu). CD-ROMs containing test simulations are available throughout the year in the Office of Student Affairs. Students should return their completed applications for Step I and Step II to the Office of Student Affairs, which will certify and mail them directly to the NBME for processing. The application form must be accompanied by one passport photo and a check made out to the NBME for \$420. The student must also indicate one of the three-month periods during which he or she wishes to sit for the exam. Within six weeks, the student will receive an identification card with a student identification number. The student can then call any Prometric test site in the world to schedule a specific test day.

All Yale medical students are required to pass Steps I and II in order to graduate. If a student fails Step I, he or she may reschedule it at any time before May of the third year. Three failures of Step I will require consultation with the Progress Committee, and only in extraordinary circumstances will the student receive permission to take it a fourth time. In the absence of that permission, the student will be terminated from the School of Medicine.

If Step I is failed more than once, the student may be asked to discontinue clinical rotations until he or she takes and passes the exam.

CLINICAL CLERKSHIPS

The third year is devoted almost entirely to clinical clerkships. The required clinical clerkships that must be taken in the third year are:

Internal Medicine	8 weeks
Ambulatory Medicine	4 weeks
Surgery A	4 weeks
Surgery B	4 weeks
Pediatrics	8 weeks
Obstetrics and Gynecology (Inpatient)	4 weeks
Psychiatry (Inpatient)	4 weeks

Clerkship scheduling will be arranged through the Office of Student Affairs. There is no required order for taking clerkships, and there is no advantage to any particular order. It is to your advantage to complete as many required clerkships as possible during the third year. In order to change your clerkship schedule after it is assigned to you, you must (1) fill out a clerkship/elective change form giving your reasons for the change and (2) meet with the registrar. Changes are not guaranteed, and no change except in the case of a legitimate emergency will be considered less than four weeks before the start of the scheduled clerkship. You may receive a lower priority for rescheduling these postponed clerkships in your fourth year than new third-year students. All changes must be approved by the associate dean for student affairs.

The Fourth Year

Required clerkships that may be taken in the fourth year are:

Surgery C	4 weeks
Clinical Neuroscience	4 weeks
Combined Outpatient Ob/Gyn and Psychiatry	4 weeks
Primary Care	4 weeks
Integrative Clinical Medicine	3 weeks

The Office of Student Affairs holds a meeting in the spring of the third year to discuss the fourth year. A majority of the meeting centers on the National Residency Matching Program, residency applications, and the Medical Student Performance Evaluation (MSPE), also known as the dean's letter, but issues of scheduling subinternships, electives, and the thesis requirement are also addressed.

Graduating students are required to submit a thesis plan to the Office of Student Research prior to fall registration of the final year. Students must provide a tentative thesis title as well as identify their thesis adviser.

A required Primary Care Clerkship is generally completed during the fourth year. This four-week clerkship provides students with an opportunity to experience primary care in an outpatient or office setting. Many students also take a number of clinical electives, including a subinternship in some clinical discipline. The residency application process and completion of the thesis are also major activities of the fourth year.

In the spring, students attend one final required course, entitled *Integrative Clinical Medicine: The Biological, Social, and Behavioral Bases of Clinical Medicine*. This three-week course provides an opportunity for graduating students to come together one last time before leaving for internships and residencies, and serves to integrate basic and clinical science knowledge with the social and behavioral sciences. The course devotes one week to each of three clinical case studies, the complexity of which gradually unfolds as the week progresses. It employs small-group and large-group formats, and independent research with group decision making and consensus. It runs concurrently with a course led by the Emergency Medicine section, which focuses on preparatory skills for internship.

Course Schedules

FIRST YEAR

Aspects of Child and Adolescent Development in the Practice of Medicine
 Biological Basis of Behavior
 Pre-Clinical Clerkship, also called Doctor-Patient Encounter, including
 Understanding Your Patient: Psychosocial Aspects of Medical Practice
 History of Medicine is incorporated into relevant courses during the first two years
 Human Anatomy and Development including Diagnostic Imaging
 Human Genetics
 Immunobiology
 Molecules, Cells, Tissues, and Systems (integrated course combining Cell Biology,
 Molecular Foundations of Medicine, Physiology)
 Neurobiology
 Pathology
 Principles of Clinical Reasoning
 Professional Responsibility
 Basic Life Support

SECOND YEAR

Pre-Clinical Clerkship, also called Doctor-Patient Encounter
 Epidemiology and Public Health
 The Modules*
 Blood/Hematology
 Cardiovascular System
 Clinical Neurosciences (including Ophthalmology)
 Clinical Science of Psychiatry
 Digestive Diseases
 Endocrine Systems
 Lungs/Respiratory Diseases
 Musculo-Skeletal System
 Oncology

* Including Clinical Examination, Diagnostic Radiology, Laboratory Medicine, Pathology, Pathophysiology, and Pharmacology.

Renal/Urinary Tract (including Male Reproductive System)
 Reproduction
 Skin
 Medical Microbiology
 Pathology: Tutorials
 Pharmacology: Basic Principles
 Advanced Cardiac Life Support
 Universal Precautions

THIRD YEAR

Internal Medicine

Inpatient	8 weeks
Ambulatory	4 weeks

Surgery

Surgery A	4 weeks
Surgery B	4 weeks
*Surgery C	4 weeks

Pediatrics

Inpatient	4 weeks
Ambulatory	4 weeks

*Clinical Neuroscience	4 weeks
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Obstetrics and Gynecology (Inpatient)	4 weeks
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Psychiatry (Inpatient)	4 weeks
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*Combined Outpatient Ob/Gyn and Psychiatry	4 weeks
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FOURTH YEAR

Primary Care	4 weeks
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Integrative Clinical Medicine	3 weeks
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Electives

Research

Thesis

Required Thesis

Yale is the only medical school with a long tradition requiring a dissertation based on original research. The M.D. thesis, a requirement since 1839, is an essential part of the curriculum, designed to develop critical judgment, habits of self-education, and application of the scientific method to medicine. The thesis requirement gives students the opportunity to work closely with faculty who are distinguished scientists, clinicians, and scholars. The investigation may have its origins in basic science or in clinical, laboratory, or environmental medicine. A hypothesis must be defined, experimental methods developed, and data gathered to prove or disprove the hypothesis. Stipends are provided for summer and all other short-term research periods (four deadlines throughout the year), and there are many one-year research fellowships available. Conduct of the research is

* Clerkship may be taken in fourth year.

continued during free periods in the third and fourth year and often over summer vacations. A significant percentage of students elect to take an additional year of medical school to pursue their research project in greater depth, but this is not a requirement. A doctoral dissertation in the biological sciences that has previously been accepted as a part of the requirements for the Ph.D. degree may be submitted in lieu of a School of Medicine dissertation at the discretion of the director of the Office of Student Research and the Thesis Committee. Information about the thesis and research opportunities may be obtained from the Office of Student Research, 203.785.6633.

Required National Examinations

For the past several decades it has been a requirement of Yale School of Medicine that all students pass the Step I and Step II examinations of the United States Medical Licensing Examination. No student will be allowed to postpone Step I beyond three years from matriculation except in extraordinary circumstances. Students are granted three attempts to pass.

Students take Step I of the USMLE by the end of December of the third year, but they are strongly encouraged to take it before starting their clinical clerkships in June. Students are given up to nine weeks after the end of classes to study for Step I. The purpose of Step I is to determine if an examinee understands and can apply important concepts of the basic biomedical sciences, with a special emphasis on principles and mechanisms underlying health, disease, and modes of therapy. If a student fails Step I, he or she must take it again by the end of the academic year, but there is no requirement to stop clinical work unless the exam is failed twice in succession.

Step II is generally taken after completion of the third year; however, it must be taken by December 31 of the final year. Successful completion of Step II, like Step I, is a requirement for graduation. Students who fail Step II will have time to retake it before graduation.

Each student is required to show proof of sitting for Step II of the boards by December 31 of his/her fourth year, or that student's dean's letter will be held. In the case of a student who has shown evidence of intention to sit for the boards by that date, but who subsequently fails to do so, all residency programs to which that student applies may be notified that there is a danger the student may not pass the boards in time to graduate.

A student who has not passed the USMLE exam, or who has failed to complete any requirement for graduation, will be placed on "In Absentia to Submit" (IAS) status at the end of the academic year. Students in this status are not charged tuition and are not eligible for University services or loan deferments. There is no health insurance, disability insurance, or other amenity that would otherwise be offered to a full-time student in good standing. Student names are kept in the system so that when they register for the USMLE again, the School can act as the sponsoring agent. Students on IAS will be granted an additional five attempts to pass Step II within a three-year period from the first failure date. After the three-year period, if the student has not successfully passed Step II, he or she will be dismissed from the School of Medicine. It is the student's responsibility to maintain yearly contact with the Office of Student Affairs and to find out about registration deadlines.

If a student cannot graduate because of failure in Step II, residency programs will be contacted by the associate dean and the student may or may not be able to begin the residency under the status of a “sub-intern.” This is totally up to the residency program director’s discretion.

It is a policy of the USMLE that once a student has obtained a passing total test grade, he or she may not repeat the examination in order to obtain a higher score. Students may take Step II any time after passing Step I.

Step III is taken after the M.D. degree has been received and the Step III requirements set by the medical licensing authority to which you are applying have been met.

The USMLE program states that medical licensing authorities require completion of USMLE Steps I, II, and III within a seven-year period. This seven-year period begins after passing the first step. However, in some cases, combined-degree students may remain a student longer than seven years. Such individuals must petition for an extension.

COMBINED DEGREE PROGRAMS

Combined M.D./Ph.D. Degree

A limited number of highly qualified students will be admitted into the M.D./Ph.D. Program each year. Students accepted into this program have an excellent academic record and a strong motivation toward a career in academic medicine and the biomedical sciences, and will have had previous research experiences of a high caliber.

The goal of the M.D./Ph.D. Program at Yale University School of Medicine is to train physician-scientists and provide them with a broad exposure to human biology and medicine and to an in-depth and rigorous training in one of the scholarly disciplines relevant to medicine. It is expected that these individuals will develop into academic physicians capable of assuming faculty positions in either basic science or clinical departments of schools of medicine, and in these positions provide leadership in academic medicine and in research related to medicine and human welfare.

The joint-degree program is intended for students who wish to obtain a research degree in an established Ph.D. program. Departments participating in the program are Cell Biology; Cellular and Molecular Physiology; Chemistry; Epidemiology and Public Health; Experimental Pathology; Genetics; Immunobiology; Microbiology; Molecular Biophysics and Biochemistry; Molecular, Cellular, and Developmental Biology; Neurobiology; Neuroscience; and Pharmacology. Students interested in taking the joint degree in another department may do so, provided they can work out, in advance, a program that is approved by the department concerned, the director of the M.D./Ph.D. Program, the dean of the School of Medicine, and the dean of the Graduate School.

All applicants selected for admission will receive support for stipend, tuition, and health fees. Funding is provided largely by the Medical Scientist Training Program (MSTP), a grant provided from the National Institute of General Medical Sciences. In order to be considered for MSTP support, candidates must be U.S. citizens or permanent residents. Some funding is also available through fellowships from the School of Medi-

cine. The average length of time students spend completing the requirements for the M.D./Ph.D. Program is seven and one-half years.

REQUIREMENTS OF THE M.D./PH.D. DEGREE

Students may apply to the M.D./Ph.D. Program at the time of admission to the School of Medicine or no later than November 15 of their second year of study in either the M.D. or Ph.D. program, and must be admitted to the joint program no later than the end of the spring term of that year. Applications for admission are reviewed by a special committee composed of faculty members and deans from both schools.

Candidates for M.D./Ph.D. degrees will normally begin their thesis research after completing the first four terms of the School of Medicine curriculum, although alterations in the sequence of the curriculum are possible where appropriate for individuals. For example, students may complete a series of clinical rotations at the end of the second year of medical school which will enable them to participate in longitudinal clinical experiences during their Ph.D. years; students following this schedule are expected to affiliate with a graduate program by the beginning of the third year of the program. Since the choice of a particular Ph.D. program will best be made after some exposure to areas of graduate study at Yale, students take courses in the Graduate School during their first and second years. The summer between the first and second years is spent in lab rotation(s). However, students must request affiliation with a particular department in the Graduate School by the middle of their third year of study in the joint program. Any exceptions must be approved by the director of the program and the dean of the Graduate School.

A student admitted to the combined program must satisfy the Graduate School Honors requirement by the end of the second year of study and must complete all remaining predissertation requirements within four terms of affiliation with the Ph.D. department. These include course requirements, teaching requirements if applicable, a departmental qualifying examination, and the submission of an approved prospectus. At that point, the student is then admitted to candidacy. Students in the M.D./Ph.D. Program must be admitted to candidacy one full year before they expect to be awarded the Ph.D. degree. An average of three to four years is spent completing the Ph.D. requirements.

The remainder of the program encompasses clinical clerkships and electives. This advanced clinical work is best incorporated in the first six months of the student's third year and the last year of the program, after the doctoral dissertation has been completed. Only under unusual circumstances will students be allowed to take more than six months of clerkships prior to the beginning of their Ph.D. work. Students are encouraged to take at least the eight-week Internal Medicine Clerkship and one other clerkship prior to beginning their research, which will enable them to participate in outpatient clinical activities during their dissertation work.

The Ph.D. dissertation will be accepted as the thesis requirement for the School of Medicine, providing the Ph.D. degree is received before or at the same time as the M.D. degree. If the M.D. degree is to be awarded before the Ph.D., an approved thesis must be

submitted to the School of Medicine by May 1 in order to meet the School of Medicine thesis requirement for graduation. Students will be eligible for the M.D. and Ph.D. degrees providing the degree requirements for both the School of Medicine and the Graduate School have been fulfilled, usually at the end of seven years. If requirements have not been completed, additional time will be required.

Combined M.D./M.Div. Degree

Students who have been admitted to the Yale School of Medicine and are enrolled for the M.D. degree may apply to the Divinity School for admission to a combined program leading to the award of the degrees of Doctor of Medicine and Master of Divinity. Students who apply to the joint M.D./M.Div. program are expected to do so at the same time that they apply to the School of Medicine or by the end of their second year at the School of Medicine in order to qualify for the special tuition arrangement. (Please see “Financial Aid.”)

The joint program is tailored to the individual interests and needs of those students seeking professional education and training in a theological understanding of the self, society, and work; in bioethics; in international health and missions; in relating a ministry of healing to hospice or similar patient-care facilities; in a biblical understanding of person; or in academic work in teaching, counseling, and chaplaincy.

Six years are required for the combined M.D./M.Div. degree.

Combined M.D./J.D. Degree

The Yale School of Medicine has a formal relationship with the Law School to allow students to seek degrees from both schools. This can be done in six years instead of seven, as would be the case if these disciplines were studied separately. Students pay three and one-half years’ tuition to the School of Medicine and two and one-half years’ tuition to the Law School. Students interested in this program must confer early with the associate deans at both schools to plan curriculum and determine whether they qualify for the special tuition arrangement.

Students who apply to the joint M.D./J.D. program are expected to do so at the same time that they apply to the School of Medicine or by the end of their second year at the School of Medicine in order to qualify for the special tuition arrangement. (Please see “Financial Aid.”) Students must be found acceptable by both admissions committees. It is suggested that the student state on each application that he or she is applying to both schools in order to pursue the joint-degree program.

Combined M.D./M.B.A. Degree

The purpose of the joint-degree program in medicine and management is to develop clinician-managers capable of pursuing careers that balance delivery of patient care with sound management in a changing health-care environment. The joint-degree program normally requires five years of study and simultaneous award of the degrees of Doctor of Medicine and Master of Business Administration at the conclusion of the five-year period. A joint-degree student pays three and one-half years’ tuition to the School of

Medicine and one and one-half years' tuition to the School of Management, in a pattern determined in advance by the two schools. Students interested in this program must discuss their intentions with the associate deans at both schools.

EPIDEMIOLOGY AND PUBLIC HEALTH

The Department of Epidemiology and Public Health (EPH) is also an accredited school of public health where students may earn the Master of Public Health (M.P.H.) degree and the Doctor of Philosophy (Ph.D.) degree through the Graduate School.

Master of Public Health Program

The M.P.H. program is a two-year, 60-credit course of study. For students with health-related doctoral degrees or those in joint programs with other Yale schools, the program is 45 credits.

The program consists of a required core curriculum, required curricula within divisions, and electives. The purpose of the core curriculum is to ensure that students master the skills and knowledge that are fundamental to the practice of public health. The divisions admitting master's students are Biostatistics, Chronic Disease Epidemiology/Social and Behavioral Sciences, Environmental Health Science, Epidemiology of Microbial Diseases, Global Health, and Health Policy Administration/Health Policy Management.

The EPH core curriculum consists of a one-year sequence in statistical thinking and four other term courses, an internship, and a thesis. The core courses are designed to provide skills in statistical methodology and data analysis as well as to introduce students to the breadth of the public health profession. This program ensures a solid grounding in the basic and applied sciences, and also provides students with learning experiences in the field or the laboratory. The final requirement is the thesis.

Each of the divisions has its own required curriculum. Students are encouraged to take electives in divisions other than the one in which they are entered.

Four terms are usually spent in residence. Students holding health-related doctoral degrees may request a 45-credit program. This must be done at the time of admission.

Applications for the M.P.H. program are available from the Office of Admissions, Department of Epidemiology and Public Health, Yale University School of Medicine, PO Box 208034, New Haven CT 06520-8034, or online at <http://publichealth.yale.edu/>. Completed applications should be submitted no later than March 1 of the calendar year for which admission is sought.

EPH requires the submission of official undergraduate and graduate transcripts, GRE scores, letters of recommendation, and a personal statement as part of the application for admission. The GMAT or MCAT may be substituted in lieu of the GRE.

Combined M.D./M.P.H. Degree

Students enrolled for the M.D. degree at the Yale School of Medicine may apply to the Department of Epidemiology and Public Health for admission to a combined program

leading to the degrees of Doctor of Medicine and Master of Public Health. This program is designed for students with special interest in aspects of medicine dealing with biostatistics, epidemiology of acute or chronic disease, organization and management of health services, or aspects of preventive medicine and public health.

Normally the combined program requires five years of study. One thesis satisfies both degree requirements provided it is approved and carried out under the supervision of a faculty member of the Department of Epidemiology and Public Health and is in an appropriate subject area.

A medical student may carry out research and write a thesis under the supervision of Epidemiology and Public Health faculty without being a candidate for the combined degree.

Applications for this joint-degree program are available at the EPH Office of Admissions and should be filed by March 1 of the calendar year for which admission is sought. Medical students interested in the joint-degree program should learn about the requirements of the joint program during their first year in the School of Medicine. Detailed information may be obtained from the associate dean for student affairs in the Department of Epidemiology and Public Health, from the director of medical studies in EPH, or from the associate dean for student affairs at the School of Medicine.

Doctoral Program

The degree of Doctor of Philosophy (Ph.D.) is offered through the Graduate School of Arts and Sciences. Preliminary inquiries should be addressed to the Director of Graduate Studies, PO Box 208034, New Haven CT 06520-8034. Four or five academic years are usually needed to complete the Ph.D. degree. All doctoral candidates must pass comprehensive examinations and design and successfully execute a dissertation prospectus, approved by a dissertation advisory committee, before being admitted to candidacy. There are five divisions in EPH in which doctoral students may choose a specialty: Biostatistics, Chronic Disease Epidemiology, Environmental Health Sciences, Epidemiology of Microbial Diseases, and Health Policy and Administration.

Application should be made to the Graduate School of Arts and Sciences, Yale University. Applications should be filed by the first working day in January specifying interest in Epidemiology and Public Health. Admission is normally only in the fall. The GRE is required. The TOEFL is also required of foreign applicants whose native language is not English. Students may enter the program with a baccalaureate. Knowledge of a foreign language is not required for admission, although it may be needed in the course of study.

 2002–2003 EPH Calendar

FALL TERM 2002

Aug. 29	Thur.	Registration and orientation for incoming students begin, 9 A.M.
Aug. 30	Fri.	Orientation ends.
Sept. 3	Tues.	Registration for returning students begins, 8.30 A.M. <i>Fall-term classes begin.</i>
Sept. 11	Wed.	Course registration deadline (late fee: \$25).
Oct. 18	Fri.	Final date for course withdrawal.
Nov. 27	Wed.	Thanksgiving recess begins, 6 P.M.
Dec. 2	Mon.	Thanksgiving recess ends, 8.30 A.M.
Dec. 9	Mon.	Reading period begins.
Dec. 13	Fri.	Reading period ends.
Dec. 16–20	Mon.–Fri.	Final examination week.
Dec. 20	Fri.	Fall term ends, 6 P.M.

SPRING TERM 2003

Jan. 13	Mon.	Registration begins, 8.30 A.M. <i>Spring-term classes begin.</i>
Jan. 20	Mon.	Martin Luther King Day; no classes.
Jan. 21	Tues.	Course registration deadline (late fee: \$25).
Mar. 7	Fri.	Final date for course withdrawal. Spring recess begins, 6 P.M.
Mar. 24	Mon.	Spring recess ends, 8.30 A.M.
Apr. 28	Mon.	Reading period begins.
May 2	Fri.	Reading period ends.
May 5–9	Mon.–Fri.	Final examination week.
May 15	Thur.	<i>Final due date for M.P.H. thesis.</i>
May 26	Mon.	University Commencement.

2002–2003 EPH GRADING CALENDAR

Jan. 6	Mon.	Grades for all students due in the registrar's office.
May 15	Thur.	Grades for all graduating students due in the registrar's office.
May 29	Thur.	Grades for all continuing students due in the registrar's office.

THE YALE PHYSICIAN ASSOCIATE PROGRAM

The concept of a physician assistant (or Physician Associate) was first developed in 1965. Today the Physician Associate is a widely accepted, highly valued member of the health-care team where this individual is distinguished from other advanced health-care practitioners by the extent to which he or she is given decision-making authority regarding patient care, diagnosis, and treatment. The twenty-five-month Yale program, established in 1971, is committed to educating students in the highest clinical skills of primary care. As of September 2002, the Yale Physician Associate Program has graduated 720 Physician Associates who are employed in a variety of settings throughout the nation. Responsible to their supervising physicians, these graduates are located in rural as well as urban areas, in emergency rooms, health maintenance organizations, clinics, and solo and group practices. They perform a variety of tasks, including history-taking and physical examination, diagnosis, formulation and follow-up of patient treatment, patient counseling and health education, medical procedures ranging from suturing of lacerations to lumbar puncture, and assisting in surgery.

Curriculum Structure and Goals of the Yale Physician Associate Program

The program is divided into a didactic phase of ten months and a clinical phase of fifteen months. The rigor of the studies precludes students working. As a result, applicants should be fully prepared to finance their education through other means. Tuition is \$21,400 per year; other expenses are similar to those estimated for medical students. A Master of Medical Science degree is awarded upon completion of the program.

The Didactic Phase. The first ten months are devoted to course work in basic and clinical sciences. Anatomy is taken with Yale medical students. Courses are listed below.

Anatomy (lecture and laboratory)	Medical Ethics
Clinical Laboratory Medicine (Hematology, Urinalysis, Chemistries)	Medicine and Surgery
Clinical Practicum	Medicine and the Law
Clinical Psychiatry	Microbiology
Diagnostic Imaging	Nutrition
Electrocardiography	Pathology
Emergency Medicine	Pharmacotherapeutics
History-Taking and Physical Examination	Physician Associate Profession
Human Sexuality	Physiology
Introduction to Surgical Skills	Quantitative Methods in Clinical Research
	Substance Abuse

The Clinical Phase. During the clinical phase, each student completes thirteen four-week rotations and one eight-week rotation in a variety of medical services to acquire broad experience in primary and emergency care. Eight rotations are mandatory: Internal Medicine I, Internal Medicine II, General Surgery, Family/General Medicine (eight

weeks), Psychiatry, Pediatrics, Obstetrics and Gynecology, and Emergency Medicine. The remaining five rotations are electives.

Although many rotations take place in the New Haven area, the experience of the student is broadened by exposure to rotations in other geographic settings. Consequently, students entering the program should expect to spend at least eight weeks in areas such as New York, Kentucky, Maine, or Massachusetts. Students should be prepared to provide their own transportation and housing for all elective rotations away from New Haven; housing is provided for out-of-state mandatory rotations.

In order to graduate from the program, a student must successfully complete all rotations as well as a research study proposal in clinical medicine.

MANDATORY ROTATIONS

Emergency Medicine	Internal Medicine II
Family/General Practice	Obstetrics and Gynecology
General Surgery	Pediatrics
Internal Medicine I	Psychiatry

ELECTIVE ROTATIONS

Ambulatory Medicine	Infectious Disease
Anesthesiology	Neonatology
Cardiology	Neurosurgery
Cardiothoracic Surgery	Ophthalmology
Dermatology	Orthopaedic Neurosurgery
Diagnostic Imaging	Orthopaedics
Endocrinology	Otolaryngology
Gastroenterology	Pediatric Cardiology
Geriatrics	Plastic Surgery
Hematology/Oncology	Rehabilitative Medicine
Hospice	Rheumatology
Industrial and Occupational Medicine	Sports Medicine
	Trauma

Admission to the Yale Physician Associate Program

The admissions process is highly selective and the competition each year is keen. Selection is based on three fundamental criteria: academic history, patient care experience, and interpersonal effectiveness.

Academic. Applicants must have baccalaureate degrees before entrance. In addition, the Admissions Committee closely examines applicant records for evidence that individuals are capable of successfully completing graduate-level science work. Premedical science majors are not necessary, but anatomy, physiology, microbiology, introductory chemistry, and psychology are prerequisites. The program considers Scholastic Aptitude Test (SAT) scores, Graduate Record Exam (GRE) scores, and other indicators of academic ability in light of applicants' past records.

Experience. The Admissions Committee is concerned that applicants have some awareness of the intricacies of medical care delivery as it exists today and can realistically commit themselves to a profession that helps the sick and injured. The majority of the program's students have had two or more years of direct patient contact experience in a variety of health-care roles such as orderly, nurses' aide, military corpsman, nurse, surgical technician, or emergency medical technician. Experience need not be in a hospital setting.

Interpersonal. The program values ability to work skillfully, thoughtfully, responsibly, and constructively with people. Compassionate health care is a basic goal of physician assistant education. The Admissions Committee screens applicants to determine their career commitment, awareness of the physician assistant role, and willingness to work with the supervision of a physician.

In addition to scholastic potential and interpersonal skills, applicants must have the physical capacities and personal characteristics necessary to meet the full requirements of the program's curriculum and to graduate as skilled and effective physician assistants. Policy on nonacademic considerations in the admissions process is available upon request from the Physician Associate Program office or on the program's Web site.

The application deadline for the class entering in 2003 is December 1, 2002. Program catalogues may be obtained by writing to the Director of Admissions, Yale Physician Associate Program, 47 College Street, Suite 220, New Haven CT 06510-3209, by telephoning 203.785.4252, or by accessing the program's Web site at <http://www.med.yale.edu/phyassoc/>. The Yale program participates in CASPA (centralized application service). Applications can be accessed at <http://www.caspaonline.org/>.

Expenses and Financial Aid

TUITION AND SPECIAL FEES

Tuition for candidates for the M.D. degree (per academic year)	\$32,300
Yale Health Plan Hospitalization coverage	\$1,152*
Examination fees for candidates for the M.D. degree, United States Medical Licensing Examination:†	
Step I	\$420†
Step II	\$420†

Bills for tuition, room, and board are mailed to the student at the beginning of each term. The regulations of the University require that the term bill must be either paid in full or satisfied by special arrangements accepted by the Office of Student Financial Services prior to the due date specified on the bill. The Office of Student Financial Services will impose a late charge if any part of the term bill is not paid when due. The Office of Student Financial Services will also notify the dean as to the delinquency and request the appropriate disciplinary action.

Charge for returned checks: A processing charge of \$20 is assessed for checks returned for any reason by the bank. In addition, the following penalties may apply due to a returned check:

- (a) If the check was in payment of a term bill, a \$110 late fee is charged for the period that the bill was unpaid.
- (b) If the check was in payment of a term bill to permit registration, the student's registration may be revoked.
- (c) If the check was given in payment of an unpaid balance in order to receive a diploma, the University may refer the account to an attorney for collection.

Bills for miscellaneous charges such as Dining Hall board extras and on-campus telephone are mailed to the student on the fifteenth of each month.

No degree will be conferred and no transcript will be furnished until all bills due the University are paid in full.

Students must pay four full years of tuition. Students who spend five years in medical school at Yale without receiving a joint degree are billed full tuition for the first four years and a registration fee thereafter.‡

Students who take a leave of absence pay a registration fee for the year(s) on leave. They pay full tuition for the four years they are in residence. If a student decides to begin his or her leave of absence in the middle of any year, he or she pays full tuition for that year and a registration fee for the following year.‡

* Includes prescription coverage of \$300. (Fall term, \$125; spring term, \$175.)

† Effective November 1, 2002.

‡ The student is responsible for his or her own health insurance at a cost of \$2,808 for a single student. (Fall term, \$1,170; spring term, \$1,638.)

Students who spend five years in the School of Medicine in order to receive a joint M.D./M.P.H. degree pay four years of full tuition to the School of Medicine. They pay half of the School of Medicine tuition to the Department of Epidemiology and Public Health during the year in which they are enrolled in EPH.

M.D./Ph.D. students pay three and one-half years' tuition to the School of Medicine and two and one-half years' tuition to the Graduate School. If a student is in the program after six years, he or she pays a minimal registration fee to the school he or she is attending.[‡]

Students who apply to the joint M.D./J.D., M.D./M.B.A., or M.D./M.Div. program are expected to do so at the same time that they apply to the School of Medicine or by the end of their second year at the School of Medicine in order to qualify for the special tuition arrangements.

Students in the M.D./J.D. Program pay three and one-half years' tuition to the School of Medicine and two and one-half years' tuition to the Law School. Students enrolled in the M.D./M.Div. Program pay three and one-half years' tuition to the School of Medicine and two and one-half years' tuition to the Divinity School. Students in the M.D./M.B.A. Program pay three and one-half years' tuition to the School of Medicine and one and one-half years' tuition to the School of Management.

It is strongly suggested that students interested in any joint program make an appointment to speak with the director of financial aid and the registrar at each school to discuss the tuition payment schedule.

If a student is asked to repeat one or more years of course work because of academic failure in curriculum requirements, he or she pays full tuition for each additional year of study.

Enrollment in courses in other schools of the University may subject the student to additional fees.

First-year students should anticipate a minimum cost of \$48,275, including tuition, for necessary expenses in an academic year. Married students and/or students with dependents have a federally established standard maintenance allowance deducted from their income.

Upon admission each medical student is required to have a microscope for unrestricted personal use. Nikon student microscopes are available for rental from the University at a charge of \$75 for the academic year. The charge is added to the student's Office of Student Financial Services bill. First-year students may also wish to purchase some of their equipment, such as an ophthalmoscope, which costs approximately \$750. Each medical student must have special equipment for individual courses.

All students are required to pay a \$300 Activity Fee. If a student is enrolled beyond the fourth year, a \$150 Activity Fee is charged.

Upperclassmen are reminded that they should anticipate the expenses of travel for interviews related to internship applications and also the cost of typing and binding their theses.

[‡] The student is responsible for his or her own health insurance at a cost of \$2,808 for a single student. (Fall term, \$1,170; spring term, \$1,638.)

FINANCIAL AID

Yale University recognizes the increasing cost of acquiring a medical education and wants students to pursue their medical studies at Yale as free of financial concerns as possible. Therefore, since the amount of funds available to the School is limited, and in order to meet the financial needs of students in a fair and equitable manner, the method for determining the financial aid for individual students is as follows.

In the spring of each year the budgets for students are established. These budgets include all projected expenses, including tuition, books and other educational supplies, microscope rental, and living expenses.

They do not include the cost of purchasing, maintaining, or insuring an automobile.

The Federal Selective Service law was amended in 1982 to provide that no student receive Title IV funds (Stafford [Subsidized and Unsubsidized]) unless he or she has executed a Statement of Registration Compliance (SRC) that either confirms that the individual has registered for Selective Service or states the reason why he or she is not required to do so. Because most of the school's financial aid awards include funds from at least one Title IV program, failure to execute a Statement of Registration Compliance will render students ineligible for that portion of the financial aid award that would normally be provided through these programs. Students for whom this law presents special problems, and who are subject to Selective Service, should consult the financial aid officer.

The amount of the budget considered the student's responsibility is determined using the *Free Application for Federal Student Aid (FAFSA)* and the *Need Access Application*, and includes money from the student's own resources (assets, salaries, etc.), from the spouse's income, when applicable, and from a parental contribution. The difference between the amount for which the student is responsible and the basic budget constitutes the financial support for which each student is eligible.

The availability of financial aid is dependent on a student's status.

(a) *Full-Time*. An individual who has matriculated at this school and is pursuing a full course of studies as outlined in this catalogue is a full-time student. This includes the required basic science courses in the first and second years and the required clinical clerkship in the third year. In addition, during the fourth year the student works on and completes a required thesis, and completes an adviser-approved schedule of electives. This student is charged full tuition, and financial aid is available if the student completes all the necessary forms and a need for aid has been determined.

(b) *Leave of Absence*. No financial aid is available to students not attending classes or working toward the requirements of the M.D. degree at Yale or elsewhere. This student is charged a registration fee. If a student is studying at another Yale graduate or professional school, that student is charged tuition by the school he or she is attending.

(c) *Extended Study*. A student who is not taking a full course load but is attending at least one class at Yale, or elsewhere, and/or is doing research toward the thesis requirement. This student is charged a registration fee and is eligible for financial aid only in the form of a Guaranteed Student Loan (GSL). Students on leave of absence or extended

study programs may have this option for only one year unless there are exceptional circumstances. Students must be back in school full time at the end of one year.

(d) *Satisfactory Academic Progress.* In order to be considered eligible for any type of financial assistance, a student must be in good academic standing and making satisfactory progress. At appropriate evaluation intervals, the student must be approved for continued enrollment by the Progress Committee of the School of Medicine. It is this committee's responsibility to require a student to finish incomplete work and/or complete any required remedial study prior to advancement to the next academic year. If the student fails to finish incomplete work and/or remedial study within one year, the student is not considered in good standing and is ineligible for any type of financial aid. Students are expected to complete the requirements of the M.D. degree within four years. With the approval of the Progress Committee of the School of Medicine or the Office of Student Affairs, a student may remain up to six years.

When a student is no longer in residence and has failed to complete required course work needed to receive the M.D. degree, the student's enrollment status is *in absentia to submit*. Failure to complete requirements includes not completing the dissertation, not passing the USMLE Step I or Step II, or not satisfactorily completing a required clerkship. The student is not charged a tuition fee and is not eligible for any financial assistance, University services, and/or loan deferments. Once the student has completed all of the requirements for graduation, his or her name is presented to the Board of Permanent Officers and to the Yale Corporation for the awarding of the M.D. degree.

Consistent with student status, satisfactory academic progress, and available funds, the need for financial aid is met by: (1) loans, made up of monies from various loan sources, and (2) scholarship, when eligibility for financial aid is determined using a parental contribution index. This includes scholarship money supplied directly to the student from non-Yale sources. The maximum scholarship awarded to a married student never exceeds the amount calculated for a single student with no resources. The total scholarship support for all students is, of course, limited by the availability of funds. Should scholarship need exceed the supply of funds, additional loans are made available.

It is the policy of the School of Medicine to abide by the FAFSA and Need Access calculation of the student's contribution and parental contribution index.

Additional financial support in the form of loans, scholarships, or employment must be made known to the student financial aid officer and may result in a proportionate reduction of School support. If a student does not report changes, his or her financial aid file is subject to review by a Disciplinary Committee and all financial aid may be canceled and the incident reported.

Copies of all schedules of both student and parental income tax and W-2 forms or a statement of earnings for the previous fiscal year are required for all students on aid. Copies of social security benefits, unemployment compensation, and retirement benefits of both student and parents are required for all students on aid. All information is verified in accordance with federal regulations.

All information in individual student financial aid folders is strictly confidential and is used only for the purpose of determining and administering the student's aid.

It is understood that allocations of financial aid are held as binding commitments only insofar as the original data on which these allocations were based are correct.

For 2002–2003, all students who have a calculated loan need and who are U.S. citizens or permanent residents of the United States may borrow up to \$38,500 through the Stafford (Subsidized and Unsubsidized) Loan program to cover part of their educational expenses. These loans are normally repaid over a ten-year period beginning six months after borrowers complete their education.

Students can obtain these loans from Yale University, a local bank, or other participating agencies.

Additional information concerning educational loans available to students of the School of Medicine may be obtained from the Student Financial Aid Office, Room 202, Edward S. Harkness Memorial Hall, 367 Cedar Street.

TUITION REBATE AND REFUND POLICY

Because of changes in federal regulations governing the return of federal student aid (Title IV) funds for withdrawn students, the tuition rebate and refund policy has changed from that of recent years. The following rules became effective on July 1, 2000.

1. For purposes of determining the refund of federal student aid funds, any student who withdraws from the School of Medicine for any reason during the first 60 percent of the term will be subject to a pro rata schedule that will be used to determine the amount of Title IV funds a student has earned at the time of withdrawal. A student who withdraws after the 60 percent point has earned 100 percent of the Title IV funds. In 2002–2003, the last days for refunding federal student aid funds will be November 3 (Years 1 and 2) or October 20 (Years 3 and 4) in the fall term; and April 6 (Year 1), May 22 (Year 2), May 14 (Year 3), or March 29 (Year 4) in the spring term.
2. For purposes of determining the refund of institutional aid funds and for students who have not received financial aid:
 - a. 100 percent of tuition will be rebated for withdrawals that occur on or before the end of the first 10 percent of the term: in 2002–2003, September 12 (Years 1 and 2) or August 23 (Years 3 and 4) in the fall term; and January 19 (Year 1), January 26 (Year 2), January 27 (Year 3), or January 19 (Year 4) in the spring term.
 - b. A rebate of one-half (50 percent) of tuition will be granted for withdrawals that occur after the first 10 percent but on or before the last day of the first quarter of the term: in 2002–2003, September 28 (Years 1 and 2) or September 9 (Years 3 and 4) in the fall term; and February 8 (Year 1), February 27 (Year 2), February 28 (Year 3), or February 9 (Year 4) in the spring term.
 - c. A rebate of one-quarter (25 percent) of tuition will be granted for withdrawals that occur after the first quarter of the term but on or before the day of midterm: in 2002–2003, October 24 (Years 1 and 2) or October 9 (Years 3 and 4) in the fall term; and March 23 (Year 1), May 1 (Year 2), April 23 (Year 3), or March 15 (Year 4) in the spring term.
 - d. Students who withdraw for any reason after midterm will not receive a rebate of any portion of tuition.

3. The death of a student shall cancel charges for tuition as of the date of death, and the bursar will adjust the tuition on a pro rata basis.
4. If the student has received student loans or other forms of financial aid, rebates will be refunded in the order prescribed by federal regulations; namely, first to the Unsubsidized Federal Stafford and/or Subsidized Federal Stafford loans, if any; next to Federal Perkins loan; then to Health loans (HPSL, LDS, and Primary Care); next to any other federal, state, private, or institutional scholarships and loans; and, finally, any remaining balance to the student.
5. Loan recipients (Stafford, Perkins, or Yale Student Loan) who withdraw are required to have an exit interview before leaving Yale and should contact the Student Loan Collection Office at 246 Church Street, 432.2727, to determine where the interview will be held.

This schedule applies only to the School of Medicine. Contact the Department of Epidemiology and Public Health and the Physician Associate Program for their schedules and policies.

SCHOLARSHIPS

All scholarships listed below are administered by the Financial Aid Office and are awarded to students based on need and interests. Students who apply for financial aid are automatically applying for these scholarships.

The Ludwig Adler Scholarship Fund. Established in 1981 by bequest from Hedwig (Mrs. Ludwig) Adler in memory of her husband. To be used for scholarships to needy men and women medical students.

The Arthur N. Alling Scholarship Fund. Established in 1986 by bequest from Helen F. Alling in memory of her father, Arthur N. Alling. To be used for scholarships for women medical students.

The Edward Ames Scholarship Fund. Established in 1940 by bequest from Edward Ames, M.D. 1874.

The Waldo Avery Scholarship Fund. Established in 1979 by Waldo Avery, B.A. 1936.

The John Kenly Bacon Fund. Established in 1994 by the Estate of Elsie L. Bacon in memory of her husband, John Kenly Bacon, Yale College Class of 1925, to provide scholarship assistance for worthy students attending the Yale University School of Medicine.

The Muriel Frances Hanley Bagshaw, M.D., Scholarship. Established in 2000 by Malcolm A. Bagshaw, M.D. 1950, in memory of his wife, to assist one or more women students enrolled in the Yale University School of Medicine.

The Judson Bardwell, 1891 M.D., Memorial Scholarship. Established in 1935 from a gift made in 1927 by Harry J. Bardwell, B.A. 1890, in memory of his brother.

The Horace D. Bellis Scholarship Fund. Established in 1966 by bequest from Horace D. Bellis, M.D. 1907. Income to be used for scholarships to worthy students in the School of Medicine.

The Bigwood Memorial Fund. Established in 2002 by bequest from the estate of Gertrude L. Bigwood, M.A. 1932, for student scholarships and/or loans to young students planning careers in the health care profession.

The Eugene M. Blake Fund. Established in 1984 in a bequest by Eugene Maurice Blake, M.D. 1906, M.S. 1929. To provide scholarship funds for the benefit of a medical student.

M. Grant Blakeslee Memorial Scholarship. Established in 1966 by bequest from Catherine Woodruff Blakeslee in memory of her husband, M. Grant Blakeslee, Ph.B. 1912. To be used for scholarships for worthy students in the School of Medicine.

The Bohmfalk Scholarship Fund. The John Frederick Bohmfalk Scholarship Fund and the Alice Bohmfalk Scholarship Fund. For students planning careers in general practice or the equivalent.

The Brace Ogilvie Financial Assistance Fund. Established in 1997 by Donna Brace Ogilvie in honor of her husband John B. Ogilvie, B.S. 1931, M.D. 1934. The Fund supports scholarships for Yale School of Medicine students.

The David L. Brook, Class of 1945S, M.D. 1947, Memorial Scholarship Fund. Established in 1995 through a gift of his family upon his death. Income to be used to assist worthy medical students who are in need of financial assistance.

The Edward Thomas Calhoun Scholarship. Established in 1928 by Lida T. Calhoun in memory of her son, Edward Thomas Calhoun, M.D. post-obit 1927. For work in pathology.

Robert Campbell Adams and Claire Adams Scholarship Fund. Established in 1981 by bequest from the Estate of Estelle B. Spinney in memory of her sister and brother-in-law, who graduated from Yale University with the Class of 1899. Preference given to students who plan to practice in rural areas.

The Ettore Ciampolini Medical Scholarship Fund. Established in 1968 by bequest from the Estate of Helen A. Ciampolini in memory of her late husband, Ettore Ciampolini, M.D., Ph.D. 1923. Income from the fund to be awarded to a deserving male student who is in need of funds to help pay his tuition.

The Class of 1944 Medical Student Scholarship Fund. Established in celebration of the 50th reunion of the Class of 1944 Medicine, by all the members of the Class of 1944 Medicine. To provide scholarship assistance for the benefit of medical students.

The Class of 1948 Scholarship. Established by members of the Class of 1948 Medicine, in honor of their 50th reunion, to provide financial aid to outstanding medical students who demonstrate need for support.

The Class of 1959 Scholarship Fund. Established by members of the Class of 1959 Medicine to provide financial aid to outstanding medical students who demonstrate need for support.

The Class of 1967 Memorial Scholarship. Established in 2002 by members of the Class of 1967 Medicine, in memory of their classmates.

The Thomas J. Coleman III, M.D. and Bebette Gualano Coleman Scholarship. Established in 2000 by Dr. and Mrs. Thomas J. Coleman III in support of scholarships for Yale medical students who plan a practice that will prohibit abortion and euthanasia.

The Julian Czamanski Scholarship. Established in 2002 by bequest from Julian Czamanski of Hamden, Connecticut, to be used for scholarships for students with financial need.

The Lycurgus M. Davey Scholarship Fund. This endowed fellowship was established in 1986 as a gift from Lycurgus M. Davey, M.D. 1943. To be used for financial aid to gifted and needy medical students.

Edwin P. and Eleanor H. Dawson Scholarship Fund. Established in 1971 to be used for the benefit of medical students who are in need of financial assistance.

Franklin M. Doolittle and Frances C. Doolittle Scholarship Fund. Established in 1959 by a gift from Franklin M. Doolittle, Ph.D. 1915. To be used to provide financial assistance to one or more needy and deserving students enrolled in the School of Medicine.

The John Sinclair Dye Memorial Scholarship. Established in 1971 by a gift from Lucy Wade Dye in memory of her husband, Dr. John Sinclair Dye. Income to be used for scholarships to worthy students in the School of Medicine.

The Freshwater-Class of 1972 Scholarship Fund. Established in 1997 by a gift from M. Felix Freshwater, M.D. 1972, in honor of Donald D. Wright, B.A. 1930, Ph.D. 1933 (Chemistry), and the Class of 1972, in celebration of its twenty-fifth reunion. To provide financial aid to medical students with a preference to a graduate of Brooklyn College or a graduate of any college part of the City University of New York system.

The Carl Gade Fund. Established in 1955 by bequest from Carl Gade, M.D. 1910. To be used to provide assistance for needy and deserving students at the Yale University School of Medicine.

The J. Roswell Gallagher Scholarship. Established by J. Roswell Gallagher, Yale College Class of 1925 and Yale School of Medicine Class of 1930, to provide scholarship assistance to medical students in need.

The John Currier Gallagher Memorial Scholarship. Established in memory of John Currier Gallagher, Yale College Class of 1954 and Yale School of Medicine Class of 1958, by his parents and friends, to provide scholarship assistance to medical students in need.

The Anne G. K. Garland Memorial Scholarship. Established in 1930 by gift from William J. Garland in memory of his wife. Awarded to students in the graduate and professional schools of the university who are chosen because of their ability, character, and promise of future usefulness and the quality of their work.

The Maurice H. Givens Scholarship Fund. Established in 1974 by bequest from the Estate of Maurice H. Givens, Ph.D. 1909. Income to be used to provide scholarships for financially needy second-year medical students who have excelled in biochemistry.

The James Raymond Goodrich Memorial Scholarship. Scholarships are available in the School of Medicine from the income of a university scholarship fund established in 1923 by gift from Charles Stillman, B.A. 1882, in memory of his uncle, James Raymond Goodrich, B.A. 1853.

The GTE Corporation Scholarship Fund. Established in 1986 by the GTE Corporation on behalf of GTE operating companies throughout the United States. To be used for scholarships for minority medical students.

The Dixon Hall Scholarship Fund. Established in 1965 by bequest of John Dixon Hall, B.A. 1881, in memory of his father, Dixon Hall, M.D. 1850. Income to be used for assistance to students or in investigation of diseases.

The Winfred Morgan Hartshorn Memorial Scholarship Fund. Established in 1992 by the Estate of Edith H. Woodruff in honor of her father, Winfred Morgan Hartshorn, M.D., Yale College Class of 1898, to provide scholarship assistance to medical students in need.

The Abner Hendee Scholarship Fund. Established in 1949 by bequest from Nellie E. Hendee in memory of her husband, Abner Hendee.

The Muriel Hirshfield Memorial Scholarship. Established in 1964 by a gift of Jack Hirshfield in memory of his wife. Income from this fund to be used to assist needy medical students who are residents of the state of Connecticut, with preference given to students who are residents of the greater New Haven area.

The John A. Hooper Memorial Fund. Established in 1952 by Sarah A. K. Hooper. Income to be used as a scholarship for a male resident of York County, Pennsylvania, pursuing his education in the School of Medicine of Yale University. Selection of recipient is based on need, character, integrity, personality, and general ability.

The Howey Fund. Established in 1945 by bequest from Ennes G. Howey of New Haven. Income awarded to needy and deserving students of good standing and of high moral character.

The Marion E. Hyde Fund. Established in 1974 by bequest of Marion E. Hyde in memory of Charles E. Hyde, M.D. 1910. To be used for scholarships for worthy students in the Yale School of Medicine.

The Harold W. and Helen M. Jockers Fund for Medical School Financial Aid. Established in 1999 by Mrs. Harold Jockers in support of scholarships for Yale School of Medicine students.

The Thomas J. Keenan, M.D., Scholarship Fund. Established in 1997 by the bequest of Thomas J. Keenan, M.D., to provide financial aid to outstanding medical students who demonstrate the need for support.

The Hans A. and Elizabeth R. Klagsbrunn Scholarship and Loan Fund. Established by a bequest from Elizabeth Ramsey, M.D. 1932, and her husband, Hans A. Klagsbrunn, LL.B. 1932, for promising medical students who need financial assistance.

The Marguerite Rush Lerner Award Fund. Established in memory of his wife by Dr. Aaron B. Lerner, to be directed toward financial aid and awarded to a deserving student in the School of Medicine.

The Professor Lafayette B. Mendel Scholarship Fund. Established in 1974 by bequest from the Estate of Maurice H. Givens, Ph.D. 1909, as a memorial to Professor Mendel, whom Mr. Givens continuously admired throughout the years. Income to be used to provide scholarships for financially needy first-year medical students who have demonstrated, at the time of matriculation, a proficiency and interest in biochemistry or physiological chemistry.

The Professor Ernest Mylon and Hildegard Mylon Scholarship Fund. Established in 1984 by bequest from Peter Mylon in honor of his parents, Professor Ernest Mylon, M.D., and Hildegard Mylon. To be used for scholarships for medical students.

The Leona R. M. Normandie Scholarship Fund. Established in 1994 by the Estate of Leona R. M. Normandie to provide scholarship assistance to medical students.

Julian J. Obermann Fund. Established in 1959 by bequest from Julian J. Obermann, honorary M.A. 1935. To be used and applied, from time to time, to defray the costs of tuition and expenses of needy and deserving students in the School of Medicine and those studying in the fields of Oriental, Epigraphic, and Arabic studies in the Graduate and Divinity schools.

The John and Jessie Ogilvie Memorial Scholarship. Established in 1968 by gifts from John B. Ogilvie, B.S. 1931, M.D. 1934, in memory of his parents. Awarded to a medical student in the third- or fourth-year class who shows ability, character, and promise for a career in surgery.

The Ogilvie Family (John B., B.S. 1931, M.D. 1934; John G., B.A. 1964; Donald G., B.A. 1965; Jennifer B., B.A. 1991; and Adam, B.A. 1993) Financial Aid Fund. Established in 1989 by a gift from John B. Ogilvie. The income is to be used to assist worthy students who are in need of financial help.

The Frank Elmer Phillips, M.D. 1901, Scholarship Fund. Established in 1992 by his daughter, Anne P. Whistler, to benefit medical students in need of financial assistance.

The Carrie T. B. Purinton Scholarship Fund. Established in 1965 by bequest from Carrie T. B. Purinton. Income to be used for scholarship purposes in the School of Medicine.

The Puzak-Kurtz Student Scholarship Fund. Established in 1962 as a gift from Michael Puzak, M.D. 1942, and Mrs. Puzak (Elizabeth Kurtz, M.N. 1941).

The Nathan E. and Hilda M. Ross Scholarship. Established in 2002 from the trust of Nathan E. Ross, B.S. 1925, M.D. 1928, and his wife Hilda M. Ross to benefit needy medical students.

The Dr. Salvatore Sannella and Dr. Lee Sannella Endowment Fellowship Fund. Established in 1991 in memory of Salvatore Sannella and in honor of his son, Lee Sannella, M.D. 1940, to benefit needy medical students with preference given to those with an interest in the physiological, psychological, and spiritual qualities of the human being as described by Dr. Lee Sannella in his book *The Kundalini Experience*.

The Donald H. Sheriden Scholarship Fund. Established in 1986 by bequest from Kathryn Whitelam Wynn in memory of her husband, Donald H. Sheriden. To be used for scholarships to needy medical students.

Scholarships for Disadvantaged Students. Established by the university to provide financial assistance to needy medical students.

The C. V. Starr Scholarship Fund. Established in 1991 by the Starr Foundation to provide financial assistance to medical students.

The Ruth and Milton Steinbach Scholarship Fund. Established in 1991 through a trust by Milton Steinbach, Class of 1924S. This fund to be used to benefit needy men and women in the Epidemiology and Public Health, Medicine, and Physician Associate programs.

The Reuben E. Thalberg Scholarship. Awarded annually by the Reuben E. Thalberg Foundation of Southington, Connecticut, in memory of Dr. Reuben E. Thalberg, to a medical student in need of financial aid while attending the Yale University School of Medicine.

The Charles Henry Thomas Scholarship. Established in 1940 by Georgine H. Thomas in memory of Dr. Charles Henry Thomas, Class of 1873.

The Lois E. and Franklin H. Top, Jr., M.D. 1961, Scholarship. Established in 2001 by Dr. and Mrs. Top to be awarded each year to one or more medical students.

The Joseph Hendley Townsend Scholarship. Established in 1928 by bequest from Emily Allison Townsend in memory of her brother, Joseph Hendley Townsend, B.A. 1885, M.D. 1887, the income to be used for the payment of tuition and other expenses of a New Haven resident.

The Myra Tyler Student Financial Aid Fund. Established in 1998 by the bequest of Myra D. Tyler, Class of 1950, in support of scholarships for Yale School of Medicine students.

The Flora Adler Ullman Memorial Fund. Founded in 1927 by gifts from Joseph C. Johnson and other friends of Flora Adler Ullman, for scholarship aid. The fund was increased in 1935 by bequest from her husband, Isaac M. Ullman.

The Rosa Verdi Scholarship. Established in 1927 by gift from William F. Verdi, M.D. 1894, in memory of his mother.

The Alfred Eastman Walker Scholarship. Established in 1951 by bequest from Frances E. Walker in memory of her brother, Alfred Eastman Walker, B.A. 1864, M.D. 1867. Income awarded to that student in the second year who has made the most satisfactory progress during the first year.

The Arthur Watson Scholarship Fund. Established in 1984 by bequest from Arthur Watson, M.D. 1942. To be used for scholarships for medical students.

Andrew Judson White Scholarship. Established in 1951 by Margaret White (Mrs. Chauncey S.) Truax in memory of her grandfather, Andrew Judson White, M.D. 1846, honorary M.A. 1894. Tuition aid for a student whose character, personality, and record give promise of fine professional service, and who otherwise would be unable to acquire a medical education. May be held by the same student for four years if the student remains eligible.

The William M. Wiefert and Lucille Reed Wiefert Scholarship Fund. Established in 1974 by a gift from an anonymous donor in honor of William M. Wiefert, B.A. 1933, M.D. 1937, and Lucille Reed Wiefert, Ph.D. 1930, M.D. 1937. Income to be used to provide scholarship aid for a financially needy student who has demonstrated scholastic achievement.

The Dr. Amy Hunter Wilson Scholarship. Established in 1990 by Amy Hunter Wilson, M.D. 1930, Dr.P.H. 1934, and Frederick C. Wilson to provide financial assistance to needy medical and public health students.

The Louise Farnam Wilson Memorial Scholarship. Established in 1955, by a gift from Mrs. Samuel Clark Harvey in memory of her sister, Louise Farnam Wilson, Ph.D. 1916. Income to be used to provide scholarship aid for a financially needy student who has demonstrated scholarship. Preference is given to a woman student.

The Yale Club of Central New Jersey Scholarship Fund.

Armed Forces Scholarships are available upon application.

LOAN FUNDS

All loans listed below are administered by the Financial Aid Office and are awarded to students based on need and interests. Students who apply for financial aid are automatically applying for these loans.

The Alumni Revolving Loan Fund. Established in 1981 by gifts from alumni.

Katharine C. Angell Revolving Loan Fund. Established in 1982 to honor Katharine C. Angell to help recognize her contributions to the School of Medicine.

The Jack R. Aron Loan Fund. Established by gift in 1980 from Jack R. Aron, B.A. 1928. To be used to provide financial aid to minority students in the School of Medicine.

The Harry J. Bardwell Loan Fund. Established 1928 by gift from Harry J. Bardwell, B.S. 1890.

The Leona Baumgartner Student Revolving Loan Fund. Established in 1981 by a gift from Leona Baumgartner Langmuir, M.D. This loan is in honor of a distinguished Yale alumna, Leona Baumgartner, Ph.D. 1931, M.D. 1934.

The William C. and Grace W. Beckert Loan Fund. Established in 1983 by Grace W. Beckert to be used for loans to students in medicine.

The David Challinor Student Loan Fund. Established in 1973 by Mr. and Mrs. David Challinor to be used for student loans at the discretion of the director of student aid.

The Class of 1922 Medical Student Loan Fund. Established in 1922 by gifts from the Class of 1922 Medicine.

The Class of 1923 Medical Student Loan Fund. Established in 1923 by gifts from the Class of 1923 Medicine.

The John Duberg Loan Fund. Established in 1980 by gift from H. P. J. Duberg, B.A. 1930.

Harry Gray Memorial Loan Fund. Established in 1982 by a gift from Jesse G. Rubin, M.D. 1957, and Mrs. Rubin.

C.S.M.S. David A. Grendon Memorial Student Loan Fund. Established in 1972 to provide supplementary loans up to the amount of \$500. Financial need of recipient will be established in accordance with the criteria that the School of Medicine uses for determining the financial resources and needs of its students.

Health Professions Student Loan Fund. Established in 1964 by the Department of Health, Education, and Welfare under the Health Professions Educational Assistance Act of 1963 (as amended).

The Howard Heinze Student Educational Fund. Established in 1927. Income to be used to aid deserving students at the Yale School of Medicine.

The Kaiser Loan Fund. Established in 1980 to be used for student loans at the discretion of the director of student aid.

The Wood Kalb Foundation Loan Fund. Established in 1970 as a gift from the Wood Kalb Foundation to provide loans to students of the School of Medicine.

The Bernard L. Kartin Memorial Loan Fund. Established in 1968 by friends and associates of Bernard L. Kartin, M.D., for loans to students in medicine.

The W. K. Kellogg Foundation Loan Fund. Established in 1942 by grants from the foundation, for loans to students in medicine and public health.

The Kinney Memorial Loan Fund. Established in 1955 by his friends in memory of Gilbert Kinney, B.A. 1905.

The Eli Lilly Loan Fund. Established in 1980. To be used as a revolving loan fund for the benefit of the senior medical students.

Loans for Disadvantaged Students. Established by the university to provide financial assistance to needy medical students.

The School of Medicine Loan Fund. A limited amount of money is available for aiding deserving students during their medical course.

The George W. Merck Memorial Loan Fund. Established in 1959 by the Merck Company Foundation in memory of George W. Merck, for loans to medical students.

The Harry G. Moss Memorial Loan Fund. Established in 1972 in memory of Dr. Harry G. Moss by his friends and colleagues to provide financial assistance for students in the School of Medicine, thus enabling the needy among them to complete their medical education.

The William Herbert Ordway Memorial Fund. Established in 1956 by Mrs. Ordway in memory of her husband, William Herbert Ordway, M.D. 1912.

The Primary Care Loan. Established in 1993 by the Department of Health and Human Services under the Health Professions Educational Assistance Act of 1993. To be used as a revolving loan fund to assist needy medical students interested in Primary Care Medicine.

The Marion Leonard Robbins Loan Fund. Established in 1962 by bequest from Marion Leonard Robbins, M.S. 1929, M.D. 1931, for loans to students in the School of Medicine.

The Frederick W. Roberts Loan Fund. Established in 1961 in memory of Dr. Frederick W. Roberts, Ph.D. 1920, to provide loans to needy and deserving members of the residency staff of affiliated hospitals.

The Anson Frederick Smolowe Memorial Student Loan Fund. Established in 1976 by Mr. and Mrs. Philip Smolowe for medical students in need of financial aid while attending the Yale University School of Medicine, in memory of their son, Anson Frederick Smolowe, B.S. 1964.

The Wayne O. Southwick Resident Loan Fund. Established in 1965 by gifts from an anonymous donor to provide loans to medical students in need of financial aid.

The Phebe Vail Tate Memorial Student Loan Fund. Established in 1956 by Dale S. Tate, B.A. 1897, in memory of his wife, Phebe Vail Tate.

The Reuben E. Thalberg Foundation Loan Fund. Established in 1972 by the Reuben E. Thalberg Foundation for medical students in need of financial aid while attending the Yale University School of Medicine.

The Lewis Thorne Memorial Fund. Established in 1956 by anonymous gifts in memory of Lewis Thorne, B.A. 1931, M.D. 1936.

The Woods Student Loan Fund. Established in 1955 by a grant from the Woods Charitable Fund, Inc.

The Yale Men in Medicine Fund. Contributions have been made since 1931 for loans to meritorious students.

FELLOWSHIPS

The James Hudson Brown Memorial Fund. Established in 1944 by bequest of Marie B. C. Brown in memory of her husband. The income provides for research fellowships. The latter are open to promising investigators for pursuit of research in the medical sciences, including clinical medicine and public health. Open to holders of the M.D. or Ph.D. degree who have demonstrated their fitness to carry on original research of high order.

The Alexander Brown Coxe Memorial Fellowships in the Biological Sciences. Established in 1927 by a gift from the family of the late Alexander Brown Coxe, B.A. 1887. The income may be awarded annually to an investigator of promise in the comprehensive field of the biological sciences. Preference is given to university graduates who have already obtained the M.D. or Ph.D. degree and who have demonstrated their fitness to carry on original research of a high order.

The William Harvey Cushing Memorial Fellowship. Established in 1928 by Dr. Harvey Cushing, B.A. 1891, as a memorial to his son, William Harvey Cushing, of the Class of 1927, Yale College, for research in surgery.

The Wilbur G. Downs, M.D., International Health Travel Fellowship. The Committee on International Health was established by the Department of Epidemiology and Public Health in 1965. In 1984, this fellowship was named in honor of Wilbur G. Downs, M.D., M.P.H., an eminent medical scholar, renowned for his work in international health. The Committee on International Health selects students studying diseases such as malaria; the fund provides travel fare and a small stipend to students, who are asked to report on their research and experiences upon their return.

The John F. and Carolyn B. Enders Research Fund. Established in 1986 by bequest from the estate of John F. Enders, Yale Class of 1919, Ph.D. and Nobel Laureate in Medicine, to support fellowships for medical research.

The William U. Gardner Memorial Research Fund. Established by Katherine H. Gardner in memory of her husband William U. Gardner, Ph.D., Ebenezer K. Hunt

Professor of Anatomy and Professor Emeritus of Anatomy at Yale, to support research projects related to endocrinological aspects of cancer.

The Richard K. Gershon, M.D., Student Research Fellowship. Established in 1986 by the faculty and friends in honor of Richard K. Gershon, M.D. 1959, to support a medical student for a fifth year of medical school in order to be able to carry out research in immunology or a related discipline.

The Gilbert H. Glaser, M.D., Postdoctoral Fellowship Fund. Established in 1989 by the Department of Neurology, colleagues, family, and friends in honor of Gilbert Glaser, M.D., Sc.D., to support the initial year of a postdoctoral fellowship in the study of epilepsy at Yale.

The Samuel Jordan Graham Fellowship. Established in 1961 in memory of Judge and Mrs. Samuel Jordan Graham by the Estate of E. Norma P. (Mrs. S. J.) Graham. To be used to assist students who are pursuing postgraduate study or research in the School of Medicine, preferably those specializing in surgery.

The James G. Hirsch, M.D., Endowed Medical Student Research Fellowship. Established in 1988 by the Josiah Macy, Jr. Foundation as a tribute to its late president and member of the Yale Corporation, James G. Hirsch, Class of 1943S, M.D., to support medical students extending their course of study to pursue research projects from four to five years.

The Richard Alan Hirshfield Memorial Fellowship. Established in 1961 by Mr. and Mrs. Jack Hirshfield in memory of their son. To be awarded to a student doing research in ulcerative colitis or related diseases.

The G.-D. Hsiung, Ph.D., Student Research Fellowship Fund. Established in 1989 by colleagues and friends to honor Gueh-Djen Edith Hsiung, Ph.D., Professor Emeritus of Laboratory Medicine, and to provide medical students who are promising scientists with research fellowships in clinical virology and related projects in viral pathogenesis.

The Charles Linnaeus Ives Fellowship. Founded in 1924 by bequest from the widow of Charles Linnaeus Ives, B.A. 1852, for research in pathology.

The Francis G. Kingsley Memorial Fellowships. Established in 1986 by friends and family to honor Francis G. Kingsley, a special friend to the Yale School of Medicine. To be awarded for one to three years to young investigators at Yale whose research shows great promise.

The Paul H. Lavietes, M.D., Summer Research Fellowship Fund. Established in 1991 in honor of Paul H. Lavietes, B.S. 1927, M.D. 1930, former Clinical Professor of Medicine and Public Health at the Yale School of Medicine and Medical Director of Community Health Care Plan, by his friends and family. To provide significant support for summer research fellowships for promising medical students.

The Vernon W. Lippard, M.D., Student Summer Research Fellowship in Pediatrics. Established in 1985 by the William T. Grant Foundation to honor former dean of the Yale School of Medicine, Vernon William Lippard, M.D., Sc.D., Dean Emeritus and Professor Emeritus of Pediatrics. To be awarded annually to students working in the area of children's behavior within the Department of Pediatrics or the Child Study Center.

Howard A. Pearson Fellowship in Pediatric Hematology/Oncology. Established in 2000 to support fellows in pediatrics.

The George G. and Leah E. Posener Memorial Fellowship in Hematology. Established in 1995 by the generosity of George G. Posener in memory of his beloved wife Leah E. Posener and his brother Morris M. Posener (Yale Class of 1938) who received care at Yale-New Haven Hospital. To be awarded annually to assist financially a young physician/scientist whose research focuses on polycythemia vera and related blood diseases.

Bertran Roberts Memorial Fund. Originally established in 1955 by family members, friends, and colleagues, as an annual lecture in the field of psychiatry. In 1973 the family decided to use these funds not only for lectures, but also to assign summer stipends to medical students interested in field study or other projects in the field of social psychiatry.

Robert Shapiro, M.D., Memorial Fellowship in Diagnostic Radiology. Established in 2000 to provide research support in all diagnostic interventional procedures for post-doctoral fellows in diagnostic radiology.

The Michael S. Voynick Fellowship in Neuro-oncology. Established in 1997 for an annual award in recognition of distinguished contributions in the field of neuro-oncology, to be presented during a symposium to promote education in such areas as oncogenesis, novel and effective therapies, and neuroscience.

The Voynick Visiting Fellowship in Neuro-oncology. Established in 2001 to support a visiting fellow who will engage in such investigative areas as tumor excisions and innovative therapies based on tumor cell biology and genetics.

The Jane Danowski Weiss Family Foundation Fellowship. Established in 2000 in memory of Dr. Thaddeus S. Danowski '36, Mr. Edwin F. Danowski (Yale studies interrupted by World War II, killed in action in 1941), and Pelagia V. Danowski Sellers. To support medical students in a fifth year of research investigations in the areas of diabetes, stroke, and heart disease.

Honors and Prizes

COMMENCEMENT AWARDS, MAY 2002

Cum Laude. The degree of Doctor of Medicine cum laude will be conferred on students whose academic performance shows unusual merit. *Diana I. Bojorquez, John A. Davis, Scott R. Floyd, Wendy S. Garrett, Rebekah G. Gross, Anna Gibb Hallemeier, Dawn Harris, Julie M. Jaffe, Kebba M. Jobarteh, Susan J. Lee, George King-Tso Lui, Jeffrey M. Miller, Leo R. Otake, Michael A. Sherling, Michael S. Singer, Karen E. Thomas.*

ACP-ASIM Internal Medicine Award. Awarded to a graduating student who will be entering a categorical or primary care internal medicine residency in Connecticut and has demonstrated outstanding academic achievement and community service. *Joyce M. Oen-Hsiao.*

Alpha Omega Alpha. Recognizes students for their scholastic excellence, integrity, capacity for leadership, compassion, and fairness in dealing with colleagues. *Rupal V. Badani, Sandeep Bansal, John A. Davis, Kier J. Ecklund, Amy M. Fabrenkopf, Wendy S. Garrett, Rebekah G. Gross, Rocco A. Iannucci, Julie M. Jaffe, Kebba M. Jobarteh, Biren P. Modi, Andrew D. Norden, Hung Nguyen, Michael S. Singer, Kiriaki Claire Stylianopoulos, Karen E. Thomas, Prashanth Vallabhajosyula, Kinari E. Webb.*

The Norma Bailey Berniker Prize. Established in 1970 by bequest of John H. Bailey, B.A. 1900, M.D. 1903. To be awarded to that member of the graduating class who, in the judgment of the faculty, gives promise of best exemplifying the disciplines and precepts of the Oath of Hippocrates and Maimonides' Prayer. *George King-Tso Lui.*

The Campbell Prize. Founded in 1900 by bequest from James Campbell, honorary M.A. 1891, Professor of Obstetrics and Gynecology from 1886 to 1899. Awarded to the graduating student who secures the highest rank on Step II of the National Board examinations. *James S. Castle, Kiriaki Claire Stylianopoulos.*

Connecticut Academy of Family Physicians Award. Established in 1994 to recognize an outstanding student entering a career in Family Practice. *Robert Griffin Kelley, Jr.*

Connecticut Chapter of American College of Surgeons Prize. Awarded to a graduating student for excellence in the surgical sciences. *Prashanth Vallabhajosyula.*

Connecticut Society of American Board of Obstetricians and Gynecologists Prize. Awarded annually to a graduating student for outstanding achievement in the field of obstetrics and gynecology. *Hyacinth N. Browne.*

The Cortlandt Van Rensselaer Creed Award. Established in 1999 in honor of Cortlandt Van Rensselaer Creed, M.D. 1857, the first African American graduate of Yale University School of Medicine. Awarded through peer nomination to a graduating, underrepresented, minority student in medicine and/or in public health who has demon-

strated outstanding academic achievement, exemplary leadership, and a significant commitment to the community at large. *Kebba M. Jobarteh.*

The Miriam Kathleen Dasey Award. Established in 1950 in honor of Miriam Kathleen Dasey, Registrar from 1921 to 1950. To be presented annually to that student who by strength of character, personal integrity, and academic achievement gives promise of fulfilling the ideal of the compassionate physician. *Rocco A. Iannucci, Rebekah G. Gross.*

The Dean's Prize for Community Service. This annual award recognizes the graduating student who, by leadership and service, has made major contributions to the School of Medicine, to the New Haven community, or to the community at large. *Kiriaki Claire Stylianopoulos, Emmanuelle M. Clerisme.*

Department of Surgery Awards of Distinction. Award for Outstanding Clinical Performance. *Not awarded in 2002.* Award for Outstanding Research. *Not awarded in 2002.*

Endocrinology Society Medical Student Achievement Award. Established in 1997 to recognize a graduating senior who has shown special achievement and interest in the general field of endocrinology. *Daniel A. Hoit.*

Janet M. Glasgow Memorial Achievement Citations. Awarded to the outstanding women in the Class of 2002. *Elizabeth M. Bird, Michelle W. Diu, Amy M. Fabrenkopf, Wendy S. Garrett, Tara C. Lagu, Kate M. Lally, Melissa A. McKirdy, Faith Nikki Pinkerton, Sarah R. Rettinger, Neesba A. Rodrigues, Deborah S. Smith, Karen M. Tie, Kinari E. Webb.*

The Peter A. T. Grannum Prize. Established in 1990. Awarded to outstanding African American graduates. This annual award is supported by the Shirley, Maggie and Hugh Comer Fund. *Nataki C. Douglas.*

Healthcare Foundation of New Jersey Humanism in Medicine Award. Established to honor a graduating student who demonstrates the highest standard of compassion and sensitivity in interacting with patients. *Anna Gibb Hallemeier.*

The Norman Herzig International Fellowship. The Norman Herzig International Fellowship, named in honor of Dr. Norman Herzig, is awarded to a student who has shown continuing dedication to humanitarian service throughout his or her education. This fellowship provides funds for the student for an eight-week clinical rotation at a medical facility in the developing world. *Marc A. Davis.*

The Marguerite Rush Lerner Award. Established in 1981. To be given to a medical student for outstanding creative writing, either written or performed, not necessarily of a serious nature. *Not awarded in 2002.*

The Lidz Prize. Awarded to a graduating student whose thesis exemplifies the highest standards for scholarly review, theoretical studies, or clinical case studies, or some combination of these. *Not awarded in 2002.*

Medical Scientist Training Program Prize (M.D./Ph.D. Award). Awarded to an outstanding graduating student in the combined M.D./Ph.D. Program. *Scott R. Floyd, Nataka C. Douglas.*

M.D./Ph.D. Alumni Award. Awarded to a graduating M.D./Ph.D. student for outstanding academic achievements, leadership, and service. *Michael S. Singer.*

Merck Book Awards. Awarded to two outstanding graduating students. *Kebba M. Jobarteh, John A. Davis.*

New England Pediatric Society Prize. Awarded to that member of the graduating class entering pediatrics who in the opinion of peers and faculty best exemplifies those qualities one looks for in a pediatrician: "A competent, caring, good-humored person who I would want to take care of my children." *Elizabeth M. Bird, Diana I. Bojorquez.*

The Parker Prize. Established in 1914 by bequest from Frank J. Parker, Ph.D. 1895, M.D. 1898. Awarded annually to the graduating student who, during the course, has shown the best qualifications for a successful physician, the faculty to be the judges. *Michael S. Singer.*

The Perkins Prize. Awarded to the student who achieves the highest rank on Step I of the National Board examinations. *Robert Griffin Kelley, Jr.*

The Dr. David and Arthur Schuman Award of Excellence in Family Practice. Awarded annually to recognize a student or resident in the State of Connecticut for his or her academic excellence and contributions to the Connecticut Academy of Family Physicians and other organizations that promote understanding of the specialty of Family Medicine. *Corey L. Martin.*

The Society for Academic Emergency Medicine Award. Awarded to the student who has demonstrated excellence in the specialty of emergency medicine. *Jeanne K. Tyan.*

Lauren Weinstein Award. Established in 1992 in memory of Lauren Weinstein (Yale medical student 1988–89). Given to a graduate who displays courage, perseverance, and compassion and has dared to reach for the best in herself or himself. *Faith Nikki Pinkerton.*

The Milton C. Winternitz Prize in Pathology. Established in 1950 in honor of Milton Charles Winternitz, honorary M.A. 1917, Professor of Pathology and Bacteriology 1917 to 1925, Anthony N. Brady Professor of Pathology 1925 to 1950. Awarded to the second-year student who, in the opinion of the staff of the Department of Pathology, has done outstanding work in the course. *Not awarded in 2002.*

THESIS PRIZES, MAY 2002

American Cancer Society Prize. Given by the Connecticut Chapter of the American Cancer Society and awarded to a graduating student for an outstanding thesis in the general area of cancer. *Kate M. Lally, Melissa A. McKirdy.*

Association for Academic Surgery—Novartis Research Award. Awarded to the graduating medical student entering a surgical field who has done meritorious research during medical school. *Jennifer L. Kreshak.*

The Peter F. Curran Prize. Established in 1976. To be presented to a student for an outstanding thesis. Peter F. Curran was Professor of Physiology at Yale, 1967 to 1974. *Andrew D. Norden.*

The Ferris Prize. Established in 1934 and endowed in 1937 by anonymous donors in honor of Harry Burr Ferris, B.A. 1887, M.D. 1890. Awarded to a graduating student for an outstanding thesis. *Mónica E. López.*

The William U. Gardner Thesis Prize. Established in 1989 by Dr. Gardner's widow and awarded to the graduating M.D. student with the most outstanding thesis in the class. *Felix Adler.*

The Nicholas J. Giarman Prize. Established in 1976. To be presented to a student for an outstanding thesis. Nicholas Giarman was Professor of Pharmacology at Yale, 1949 to 1968. *Emmanuelle M. Clerisme.*

The International Health Prize. Established in 1988 for the best thesis in the area of international health. *Kinari E. Webb.*

The Keese Prize. Established in 1880 by bequest from Mary M. Keese in memory of her son, Hobart Keese, M.D. 1855. Awarded annually to a student who presents an outstanding thesis. *Karen J. Kim.*

The Dr. Harold H. Lampport Biomedical Research Prize. Established in 1976. To be presented to a student for an outstanding thesis reporting original biomedical research. *Prashanth Vallabhajosyula.*

M.D./Ph.D. Thesis Prize. Awarded to the graduating M.D./Ph.D. student with the most outstanding dissertation. *Wendy S. Garrett.*

The Dr. Louis H. Nahum Prize. Founded in 1973 by bequest from Louis H. Nahum, M.D. 1916. Awarded annually to a member of the senior class of the School of Medicine who merits such award by virtue of the excellence of the thesis which the student has written as required for the medical degree. *Seth H. Goldberg.*

The John P. Peters Prize. Established in 1976. To be presented to a student for an outstanding thesis in the area of internal medicine or metabolism. John P. Peters was Professor of Medicine at Yale, 1927 to 1955. *Michael V. Dutka.*

Transfusion Medicine/Laboratory Medicine Award. Established in 1988 for the best thesis in the area of transfusion or laboratory medicine. Sponsored by the Department of Laboratory Medicine. *Eric P. Hazen.*

The Louis G. Welt Prize. Established in 1976. To be presented to a student for an outstanding thesis in the area of renal physiology, nephrology, or medicine. Louis Welt was

Professor of Medicine and Chairman of the Department of Internal Medicine at Yale, 1972 to 1974. *Naomi J. Balamuth.*

STUDENT RESEARCH DAY ORAL PRESENTATIONS, MAY 2, 2002

Felix Adler. *Positional Cloning of a 9;13 Chromosomal Translocation Breakpoint Implicated in Hypophosphatemic Rickets.* (Genetics).

Emmanuelle M. Clerisme. *Mechanism by which Estrogens Transcriptionally Repress the Expression of Cell Adhesion Molecules in Human Endothelial Cells.* (Internal Medicine).

Wendy S. Garrett. *The Regulation of Endocytosis in Developing Dendritic Cells.* (Cell Biology).

Mónica E. López. *Role of Sialic Acid in the Formation of Tight Lysosome-derived Vacuoles during Trypanosoma Cruzi Invasion.* (Cell Biology).

Prashanth Vallabhajosyula. *Transcription Factor, XBP-1, Is Essential for the Terminal Differentiation of B Cells into Immunoglobulin Secreting Plasma Cells.* (Immunobiology).

AWARDS TO FACULTY AND HOUSE STAFF, MAY 2002

The Francis Gilman Blake Award. Established in 1952 by Nu Sigma Nu. Endowed by Dr. Robert C. Kirk, B.S. 1930, as a memorial to his twin brother, Dr. Gilman D. Kirk, B.S. 1930. Awarded annually to that member of the faculty of the School of Medicine designated by the senior class as the most outstanding teacher of the medical sciences. *John S. Hughes, M.D., Associate Professor of Medicine – General Medicine.*

Bohmfolk Prizes. Established in 1989 under the terms of the Alice Bohmfalk Charitable Trust. Prestigious teaching prizes will be awarded annually to individuals who have made outstanding contributions to the teaching program, one in the basic sciences and one in the clinical sciences, as judged by the faculty and students. *Basic Science: Frederick J. Sigworth, Ph.D., Professor of Physiology; Clinical Science: Richard Belitsky, M.D., Associate Professor of Psychiatry.*

The Healthcare Foundation of New Jersey Humanism in Medicine Award. Established in 1998 to honor a faculty member who demonstrates the highest standard of compassion and sensitivity in his or her interaction with patients. *Guadalupe Garcia-Tsao, M.D., Professor of Medicine – Digestive Diseases.*

The Leah M. Lowenstein Award. Presented annually by the Office for Women in Medicine to that member of the full-time faculty whose work represents the highest degree of excellence in nonsexist education. *Marie E. Egan, M.D., Ph.D., Associate Professor of Pediatrics.*

The Betsy Winters House Staff Award. Established in 1972 by the Fourth-Year Class and presented annually to that member of the house staff of the Yale-New Haven Medical Center, designated by the Fourth-Year Class, who has made the most significant contribution to the education of medical students. *Haider Akmul, M.D.*

General Information

HUMAN RELATIONS CODE OF CONDUCT

Yale University School of Medicine is committed to the promotion of personal and professional development of all individuals in its community, and encourages dialogue that will foster the growth, well-being, and dignity of all its members. In pursuit of these goals, the school is dedicated to maintaining an environment which places the highest priority on collegial relationships, mutual respect, and sensitivity among its students, faculty, and staff. An educational and caring community functions best when there is civility and respect for the dignity and worth of each individual. These principles of respect and compassion are equally applicable to the patients who are served.

It must be ensured that the school is free from discrimination and acts of intolerance including but not limited to those based on race, gender, sexual orientation, religion, national origin, age, illness, physical handicap, or socioeconomic background. This commitment remains consonant with the obligation to protect open and wide-ranging public discourse. The principle of freedom of expression that might otherwise protect even the most offensive public speech does not protect, nor does it even encompass, a right to threaten the dignity and privacy of an individual. Such personally directed behavior will not be tolerated; it is antithetical to academic values, debilitates its victims, compromises the offenders, and undermines the university's fundamental commitment to individual freedom and respect for all its members. Furthermore, acts of intolerance may destroy the very atmosphere wherein freedom of expression is otherwise tolerated and cherished.

GRIEVANCE PROCEDURES

There are at least six possible grievance procedures by which students enrolled in the School of Medicine may lodge a complaint against a member of the faculty or administration of the School of Medicine.

1. *Sexual Harassment:* The Dean's Board on Sexual Harassment exists to ensure that every student is able to pursue his or her education at Yale free of sexual harassment. The responsibility of the board is to address complaints of sexual harassment that students in the School of Medicine may bring that involve students, faculty, staff, and postdoctoral fellows. Board members are very willing to discuss with students any problem of sexual harassment or harassment on the basis of sexual orientation. The board will stress confidentiality, describe informal and formal methods of dealing with complaints, and note alternative channels of redress. A detailed description of the policy is available from the ombudsperson. In addition, a student may confidentially bring questions or concerns or seek informal advice from the ombudsperson at the School of Medicine.

2. *General Student Grievance Procedure:* This procedure governs any case in which a student has a complaint, including but not limited to a complaint of discrimination on the basis of race, sex, color, religion, national or ethnic origin, or handicap, against a

member of the faculty or administration of the School of Medicine. The student should submit a letter to the associate dean for student affairs describing the complaint and the facts upon which it is based, specifying the issue in question and indicating what redress or resolution of the grievance is sought. The associate dean may appoint an investigator who will try to resolve the complaint informally or will supply relevant information to the Student's Progress Committee or an ad hoc progress committee.

3. *Provost's Procedure for Student's Complaints:* This procedure governs any case in which a student has a complaint, including but not limited to a complaint of sexual harassment or a complaint of discrimination on the basis of race, sex, color, religion, national or ethnic origin, or handicap, against a faculty member who is not a member of the faculty of the complainant's school, or against an employee who is not an administrator of the student's school or who is not subject to discipline by the student's dean. This procedure is to be used for all complaints of discrimination on the basis of handicap where structural modification of university facilities is the remedy sought.

4. *Progress Committees:* Each class at the School of Medicine is assigned a Progress Committee made up of five members of the School faculty and chaired by the associate dean for student affairs. The Progress Committees meet regularly throughout the year to review the progress of each student in the class through review of course evaluations, National Board scores, and academic performance as assessed by the faculty, and to decide whether or not each student should progress into the next year. The Progress Committee reviews the academic record and assesses the moral and ethical character, emotional stability, and professional conduct of each student to determine whether or not a student should repeat a year, take a year's leave of absence for special study, or be dismissed. They also determine the awarding of certain academic prizes and cum laude. Students who disagree with decisions of the Progress Committee may request a meeting with the committee and may be accompanied by legal counsel. A grievance that cannot be resolved through the usual processes may be brought to the dean of the School of Medicine.

5. *Peer Advocates:* For students who feel they may have been the object of mistreatment, abuse, or harassment, there is a peer advocate program made up of two students from the second-, third-, and fourth-year classes; one student from the M.D./Ph.D. Program; and one student from the Physician Associate Program. These students have been nominated by their peers and have received extensive training from mental health professionals at the Yale Health Plan. Students may receive confidential advice and counseling from peer advocates. In addition, peer advocates may access the support of the Peer Counseling Council, which includes the associate dean for student affairs, the associate dean for administration, faculty who are not involved in student evaluation, and all of the peer advocates.

6. *Office of the Ombudsperson:* see p. 162.

RESIDENCE AND DINING FACILITIES

Edward S. Harkness Dormitory and Apartments

Harkness Hall, located only steps away from the School of Medicine and Yale-New Haven Hospital, houses students from the School of Medicine, the School of Nursing, and the Epidemiology and Public Health and Physician Associate programs. Residents of Harkness Dormitory live in a secure building with recently renovated single rooms, and they have access to many amenities including computer network access in all units. Yale administrative offices occupy the first through third floors of the building.

The great advantages of living in Harkness Hall are its close proximity to classes, and the opportunity it provides in bringing together students from the various medical related fields in a relaxed social setting.

Accommodations include single rooms with sinks, a limited number of two-room suites, a popular dining hall, television lounges, kitchenettes, and other recreation rooms. All dormitory rooms are furnished, and all rooms must be single occupancy. Dormitory room rental rates are \$4,150 to \$5,450 during the 2002–2003 academic year (August 2002 to May 2003). One-bedroom apartments with living room, kitchenette, and bathroom are available for singles or couples. The 2002–2003 apartment rate is \$695 per month for streetside apartments, and \$715 per month for courtyard apartments. All rents include Ethernet hook-up and all utilities except telephone and apartment cable television. Apartments are furnished with basic furniture, although many students supplement the existing furniture with their own. There is no cable television access in the dormitory building.

The first floor houses a dining and lounge area, known as Marigolds, which is open to the Yale community and provides both intimate and large gathering spaces for socializing, reading, watching television, and other activities. A Steinway baby-grand piano is also available for residents. The basement contains student storage with a bike storage area, an exercise/weight room, a billiard room, and a laundry room. The Class of 1958 Fitness Center, which opened during the 1999–2000 school year, contains a wide assortment of cardiovascular and weight training equipment. All medical, public health, physician associate, and nursing students are welcome to use this Center, where access is provided by Student ID card scanners. There is no fee for this benefit, but all users are required to register for membership.

For information about Edward S. Harkness Memorial Hall, contact the Harkness dormitory office at 203.737.1960; or the Web site, <http://info.med.yale.edu/harkness/>. For information about other Yale graduate residences, consult the Department of Graduate Housing's Web site at <http://www.yale.edu/hronline/gho/>.

Dining Services

Marigolds, at the School of Medicine, is the popular student dining area and gathering place located in Edward S. Harkness Hall. Marigolds is open from 7.30 A.M. until 7.30 P.M., Monday through Friday, and it offers continental breakfast, lunch, and dinner.

Dining hours are shortened during summer and vacation periods. Faculty members, students, and staff are welcome to dine at the dining hall on an à la carte basis.

Those living in Harkness dormitory are required to participate in a meal plan. Rates vary, depending upon the program and year of study. The rates for the 2002–2003 academic year are \$2,258.85 for first-year medical students; \$2,185.00 for physician associate students; \$2,052.45 for first-year public health students; and \$1,928.05 or \$2,087.95 for nursing students, depending on their program. The meal plan is a debit-balance system allowing students to spend their board points anytime that the dining room is open. Pricing is à la carte, although for budgeting purposes students must understand that the board amount provides adequate funds for approximately ten meals per week (this varies depending upon individual eating habits). Apartment residents have no required meal plan, other than the off-campus dining plan requirement which is explained below.

All first- and second-year medical students living off-campus will be assessed a mandatory off-campus board fee of \$220 per semester (\$440 for the school year). This dining charge was initiated to encourage all medical students to socialize in the Harkness Student Center, regardless of whether they live in the dormitory.

HEALTH SERVICES FOR STUDENTS

Yale University Health Services (YUHS) is located on campus at 17 Hillhouse Avenue. YUHS offers a wide variety of health care services for students and other members of the Yale community. Services include student medicine, internal medicine, gynecology, mental hygiene, pediatrics, pharmacy, laboratory, radiology, a twenty-three-bed inpatient care facility (ICF), a round-the-clock urgent care clinic, and such specialty services as allergy, dermatology, orthopedics, and a travel clinic. YUHS also includes the Yale Health Plan (YHP), a health coverage option that coordinates and provides payment for the services outlined above, as well as for emergency treatment, off-site specialty services, inpatient hospital care, and other ancillary services. YUHS's services are detailed in the *YHP Student Handbook*, available through the YHP Member Services Department, 203.432.0246.

Eligibility for Services

All full-time Yale degree-candidate students who are paying at least half tuition are enrolled automatically for YHP Basic Coverage. YHP Basic Coverage is offered at no charge and includes preventive health and medical services in the departments of Student Medicine, Internal Medicine, Gynecology, Health Education, and Mental Hygiene. In addition, treatment for urgent medical problems can be obtained twenty-four hours a day through Urgent Care.

Students on leave of absence or on extended study and paying less than half tuition are not eligible for YHP Basic Coverage but may enroll in YHP Student Affiliate Coverage. Students enrolled in the Division of Special Registration as nondegree special students or visiting scholars are not eligible for YHP Basic Coverage but may enroll in the YHP Billed Associates Plan and pay a monthly premium fee. Associates must enroll for a minimum of one term within the first thirty days of affiliation with the University.

Students not eligible for YHP Basic Coverage may also use the services on a fee-for-service basis. Students who wish to be seen fee-for-service must enroll with the YHP Member Services Department. Enrollment applications for the YHP Student Affiliate Coverage, Billed Associates Plan, or Fee-for-Service Program are available from the YHP Member Services Department.

All students are welcome to use specialty and ancillary services at YUHS. Upon referral, YHP will cover the cost of these services if the student is a member of YHP Hospitalization/Specialty Care Coverage (see below). If the student has an alternate insurance plan, YHP will assist in submitting the claims for specialty and ancillary services to the other plan and will bill through the Office of Student Financial Services for noncovered charges and services.

Health Coverage Enrollment

The University also requires all students eligible for YHP Basic Coverage to have adequate hospital insurance coverage. Students may choose YHP Hospitalization/Specialty Coverage. Students enrolled at the School of Medicine may waive this coverage only with written permission of the associate dean for student affairs and only if equivalent coverage is provided through the policy of a parent or spouse.

YHP HOSPITALIZATION/SPECIALTY COVERAGE

Students are automatically enrolled and charged a fee each term on their Student Financial Services bill for YHP Hospitalization/Specialty Coverage. Students with no break in coverage who are enrolled during both the fall and spring terms are billed each term and are covered from September 1 through August 31. For students entering Yale for the first time, readmitted students, and students returning from a leave of absence who have not been covered during their leave, YHP Hospitalization/Specialty Coverage begins on the day the dormitories officially open. A student who is enrolled for the fall term only is covered for services through January 31; a student enrolled for the spring term only is covered for services through August 31.

For a detailed explanation of this plan, see the *YHP Student Handbook*.

Waiving the YHP Hospitalization/Specialty Coverage: Students enrolled at the School of Medicine are not permitted to waive YHP Hospitalization/Specialty Coverage unless they have the written permission of the associate dean for student affairs and have proof of equivalent coverage including mental health and mental health hospitalization.

Revoking the Waiver: Students who have permission to waive YHP Hospitalization/Specialty Coverage but later wish to be covered must complete and send a form voiding their waiver to the YHP Member Services Department by September 15 for the full year or fall term, or by January 31 for the spring term only. Students who wish to revoke their waiver during the term may do so, provided they show proof of loss of the alternate insurance plan and enroll within thirty days of the loss of this coverage. YHP premiums will not be prorated.

YHP STUDENT TWO-PERSON AND FAMILY PLANS

A student may enroll his or her lawfully married spouse or same-sex domestic partner and/or legally dependent child(ren) under the age of nineteen in one of two student dependent plans: the Two-Person Plan or the Student Family Plan. These plans include coverage for YHP Basic Coverage and for coverage under YHP Hospitalization/Specialty Coverage. YHP Prescription Plus Coverage may be added at an additional cost. Coverage is not automatic and enrollment is by application. Applications are available from the YHP Member Services Department or can be downloaded from the YUHS Web site (<http://www.yale.edu/uhs/>) and must be renewed annually. Applications must be received by September 15 for full-year or fall-term coverage, or by January 31 for spring-term coverage only.

YHP STUDENT AFFILIATE COVERAGE

Students on leave of absence or extended study or students paying less than half tuition must enroll in YHP Student Affiliate Coverage, which includes coverage for YHP Basic and for the benefits offered under YHP Hospitalization/Specialty Coverage. Prescription Plus Coverage may also be added for an additional cost. Applications are available from the YHP Member Services Department or can be downloaded from the YUHS Web site (<http://www.yale.edu/uhs/>) and must be received by September 15 for full-year or fall-term coverage, or by January 31 for spring-term coverage only.

YHP PRESCRIPTION PLUS COVERAGE

This plan has been designed for Yale students who purchase YHP Hospitalization/Specialty Coverage and student dependents who are enrolled in either the Two-Person Plan, the Student Family Plan, or Student Affiliate Coverage. YHP Prescription Plus Coverage provides protection for some types of medical expenses not covered under YHP Hospitalization/Specialty Coverage. Students are billed for this plan and may waive this coverage, but students at the School of Medicine are strongly advised to purchase it. The waiver form must be filed annually and must be received by September 15 for the full year or fall term or by January 31 for the spring term only. For a detailed explanation, please refer to the *YHP Student Handbook*.

Eligibility Changes

Withdrawal: A student who withdraws from the University during the first ten days of the term will be refunded the premium fee paid for YHP Hospitalization/Specialty Coverage and/or YHP Prescription Plus Coverage. The student will not be eligible for any YHP benefits, and the student's YHP membership will be terminated retroactive to the beginning of the term. The medical record will be reviewed, and any services rendered and/or claims paid will be billed to the student on a fee-for-service basis. At all other times, a student who withdraws from the University will be covered by YHP for thirty days following the date of withdrawal or to the last day of the term, whichever comes first. Premiums will not be prorated. Students who withdraw are not eligible to enroll in YHP Student Affiliate Coverage.

Leaves of Absence: Students who are granted leaves of absence are eligible to purchase YHP Student Affiliate Coverage during the term(s) of the leave. If the leave occurs during the term, YHP Hospitalization/Specialty Coverage will end on the date the leave is granted and students may enroll in YHP Student Affiliate Coverage. Students must enroll in Affiliate Coverage prior to the beginning of the term during which the leave is taken or within thirty days of the start of the leave. Coverage is not automatic and enrollment forms are available at the YHP Member Services Department or can be downloaded from the YUHS Web site (<http://www.yale.edu/uhs/>).

Extended Study or Reduced Tuition: Students who are granted extended study status or pay less than half tuition are not eligible for YHP Hospitalization/Specialty Coverage and YHP Prescription Plus Coverage. They must purchase YHP Student Affiliate Coverage during the term(s) of extended study. This plan includes coverage for YHP Basic and for the benefits offered under YHP Hospitalization/Specialty Coverage. Coverage is not automatic and enrollment forms are available at the YHP Member Services Department or can be downloaded from the YUHS Web site (<http://www.yale.edu/uhs/>). Students must complete an enrollment application for the plan prior to the start of the term and show proof of enrollment to the School of Medicine registrar.

For a full description of the services and benefits provided by YHP, please refer to the *YHP Student Handbook*, available from the YHP Member Services Department, 203.432.0246, 17 Hillhouse Avenue, PO Box 208237, New Haven CT 06520-8237.

Required Immunizations

Measles (Rubeola) and German Measles: All students who were born after December 31, 1956, are required to provide proof of immunization against measles (rubeola) and German measles (rubella). Connecticut state law requires two doses of measles vaccine. The first dose must have been given after January 1, 1969, *and* after the student's first birthday. The second dose must have been given after January 1, 1980. These doses must be at least 30 days apart. Connecticut state law requires proof of one dose of rubella vaccine administered after January 1, 1969, *and* after the student's first birthday. The law applies to all students unless they present (a) a certificate from a physician stating that such immunization is contraindicated, (b) a statement that such immunization would be contrary to the student's religious beliefs, or (c) documentation of a positive blood titer for measles and rubella.

Meningococcus (Meningitis): All students living in on-campus housing must be vaccinated against Meningococcal disease. The law goes into effect in September 2002, meaning that all returning students who plan to live in University housing must be immunized or show proof of immunization within the last five years. Students who are not compliant with this law will not be permitted to register for classes or move into the dormitories for the fall term, 2002. Please note that the State of Connecticut does not require this vaccine for students who intend to reside off campus.

In addition to University requirements, all School of Medicine students must also meet immunization requirements of the various hospitals in which they will work. Yale-New

Haven Hospital requires that, before beginning any clinical work, all students with negative serology be successfully vaccinated against hepatitis B and must ascertain that students are immune to polio, mumps, rubeola, rubella, and meningitis. Those refusing the hepatitis B vaccine must do so in writing at the time of matriculation. Furthermore, students should know their antibody status to varicella and any other communicable disease determined by the hospital. Students must show evidence that they have received a tetanus toxoid or tetanus-diphtheria booster within the past ten years. They must also show evidence of a PPD within the past year, or a chest X-ray for individuals known to be PPD positive.

Students who have not met these requirements prior to arrival at Yale University must receive the immunizations from YHP and will be charged accordingly.

Any students who will be traveling abroad should make an appointment in the Travel Clinic at YUHS at least six to eight weeks prior to departure. In addition, those who are working in areas where they might encounter blood or fluid exposure must contact the Student Medicine Department (432.0312) at YHP. Such students will be given a seven-day supply of antiretroviral medication at no charge. They will also receive instructions about how to handle possible exposure.

DISABILITY INSURANCE

Yale University School of Medicine provides a long-term disability program for each active medical student beyond the second year of study. (A student may not be on a leave of absence.) Coverage applies regardless of any prior medical condition. During medical school, premiums are paid in full by the School. The policy provides options for expanding coverage after leaving the School of Medicine, but premiums then become the responsibility of the insured.

MEDICAL CENTER SECURITY

Yale University has its own police force, and at least one officer patrols the Medical Center twenty-four hours a day. At strategic times, two officers patrol a wider area. The officers are in police uniform, are armed, and have full police powers similar to New Haven police officers. The Yale University Security Programs Department is located at 100 Church Street South. The Central Alarm Station at that location monitors all alarms and cameras in the School of Medicine area. Security personnel have radio and telephone communications with all area police and fire departments. Security officers in the Yale department provide a variety of services including checking IDs; parking enforcement; building patrol; monitoring closed circuit television (CCTV) and alarm systems; providing escorts; providing “lock-out” service for individuals locked out of their room, lab, or office; and offering general assistance to Medical Center personnel and the general public.

The Security Department operates an escort vehicle seven days a week. The hours of operation are 5 P.M. to 1 A.M. The escort vehicle departs from SHM and stops at Y-NHH, the University/Crown Apartment complex, LEPH, and Lot 47. After 1 A.M., the escort

vehicle is available by calling 785.5555. In addition, the Security Department provides a walking escort twenty-four hours a day, seven days a week for the School of Medicine area and central campus.

There are approximately eighty security officers employed by the University Security Department. Their role is to provide high visibility, and to observe and report potential problems to the security dispatcher and Yale University Police. Each one of the security officers completes a security training program that consists of subjects such as legal issues, fire protection, report writing, patrol techniques, communications, human relations, and several other topics. Prior to being assigned to a particular post, each security officer is given familiarization training for the Medical Center.

University security officers carry two-way radios for communication. Security personnel respond to a variety of situations on campus and notify the proper police agency when necessary. The officers currently wear a white uniform shirt with a Yale security patch on each shoulder, dark blue trousers, and a black tie. Each security officer wears a numbered shield over his or her left breast pocket. The University Security Department can be reached twenty-four hours a day at 785.5555.

Yale-New Haven Hospital also has a Hospital Police force. They check IDs at hospital entry points, patrol the interior and exterior of hospital property, and provide contractual security services at the Air Rights Garage and the Yale School of Nursing. All officers are certified constables, are armed, carry New Haven Police Department badges, and have arrest powers on hospital grounds.

There are emergency telephones in the Medical Center. Yale emergency telephones are designated by a blue light above the telephone and are for use by anyone to get quick police assistance. All outside doors are locked or attended at all times.

THE YALE JOURNAL OF BIOLOGY AND MEDICINE

The Yale Journal of Biology and Medicine publishes original contributions in all fields of medicine, the fields of biology that are related to medicine, and the history and teaching of these subjects. Six issues a year are published under the editorial direction of a board of faculty members and students. *The Yale Journal of Biology and Medicine* is the oldest scientific journal in the country that has medical and graduate students on its editorial board. Student editors are chosen each year on a competitive basis from the students of the School of Medicine and the graduate departments of the biological sciences. It affords students the opportunity to review and edit scientific articles for publication. Manuscripts on a wide variety of topics in basic and clinical sciences are received from authors around the world.

SPECIAL SUPPORT SERVICES

Office for Women in Medicine

The Office for Women in Medicine (OWM) serves as a focal point for a variety of concerns, both general and specific, within the School and the University. The OWM provides women students, house staff, and faculty access to advisers and mentors and

facilitates access by students to professional women in an informal setting. Throughout the year, the office sponsors workshops and seminars on professional development and career opportunities for women in medicine and the sciences that address the broader concerns of women and men in the medical community. These programs are designed to provide an area for interchange, to increase the visibility of women in medicine, to introduce women at Yale School of Medicine to a spectrum of role models, to provide access to notable speakers, and to serve as a forum for relevant issues. The very existence of OWM demonstrates Yale's strong commitment to women and to the creation of a milieu where women at all levels (from beginning students to senior staff and faculty) can develop to full potential.

Office of the Ombudsperson

The ombudsperson is a neutral complaint-handler who attempts to ensure that people are treated fairly and equitably. Any troublesome matter in the Yale School of Medicine community may be discussed with the ombudsperson. The ombudsperson has wide powers of inquiry and will refer matters to the proper person or office and, where appropriate, will assist in negotiations or in other aspects of problem solving. The Ombudsperson's Office supplements, but does not replace, the existing resources for conflict resolution and fair practice available at the Yale School of Medicine. The ombudsperson follows no prescribed sequence of steps and does not participate in any formal grievance process; the function is to listen, advise, suggest options, make recommendations, and investigate informally with the goal of conflict resolution; to consider all sides of an issue; to remain neutral and impartial; and to protect confidentiality. The office is independent of existing administrative structures.

Office of Multicultural Affairs

The Office of Multicultural Affairs (OMCA) organizes and administers programs and initiatives designed to serve and assist minorities in their professional, social, and academic goals. The office is actively involved in the recruitment and retention of underrepresented minority students, house staff, fellows, and faculty into the fields of science and medicine. Through a number of educational programs, OMCA continually works to increase the medical school community's sensitivity to minority concerns and issues in medical education and practice. In addition, OMCA proactively addresses the concerns and grievances of minorities at the School of Medicine. The office provides outreach support to assist the city of New Haven and its schools in meeting educational and health-care goals for all minorities. OMCA administers yearly summer academic enrichment and research programs for minority high school and college students. Finally, OMCA works in conjunction with such medical student groups as the Student National Medical Association (SNMA), Boricua/Latino Health Organization (BLHO), Asian Americans in Yale Medicine (AAIYM), Native Americans@Yale Med, and Lambda Health Alliance. The office is headed by the assistant dean, Forrester A. Lee, M.D.

Computing at the School of Medicine

The Medical Library has a Computer Resource Laboratory (http://its.med.yale.edu/about_itsmed/academic_computing/crl/welcome.html/) on Lower Level I for general use, and a cluster of specially equipped computers in the reference area on the first floor for medical education and scholarly information services. Both facilities contain Windows and Macintosh computers and printers. The CRL also has two flatbed scanners, a film scanner, and a range of software including word processing, desktop publishing, statistical software (SAS), database management software, programming languages, and medical education software. The CRL is open for use twenty-four hours a day (with a Yale ID after library hours); the reference area computers are available during library hours.

Lauder Hall has six teaching laboratories that are equipped with a networked Power Macintosh and videodisc player in each room. The computers have medical education software programs installed that work in conjunction with the videodisc player. Students using these computers also have access to the campus network where a large selection of additional medical education software is available as well as complete access to the Internet.

Yale has negotiated agreements with computer vendors enabling students to buy computers (IBM, Dell, or Apple), supplies, and software at discounted prices. The University provides online ordering through its e-portal, <http://www.yale.edu/eportal/>. If you are interested in buying a personal computer or simply want advice and information on personal computers or software packages and how to order them, you can consult the staff of the Walk-In Help Desk at its new location in IE90 in the Sterling Hall of Medicine. Hours are Monday through Friday from 10 A.M. until 4 P.M.

The School of Medicine has developed a World Wide Web server that provides a wide variety of local information of special interest to students (including the Faculty Research Interests Database, the Medical Center's Weekly Schedule of Events, the Yale telephone directory, a listing of grant and research opportunities, dining hall menus, and weather reports) and links to Internet resources including libraries, bibliographic and full-text databases, images, newsletters, and software.

For more information on student computing resources, see http://its.med.yale.edu/about_itsmed/academic_computing/meded/students.html/.

ID Policy

A picture ID is issued when a student registers for the first year. Each fall, spring, and summer, a student is asked to reregister in the Office of Student Affairs where he or she receives updated stickers for the ID card. Should the ID be lost, a replacement fee is required and another picture may be taken at the Office of Security and Parking, in SHM IE41, and another ID processed. This ID should be worn visibly at all times while in the Medical Center.

Card Key Access Policy

Each student receives a picture ID card which opens all perimeter doors to the School of Medicine, as well as some interior connector doors, when he or she registers for the first year. Students in their third year and beyond completing clinical rotations are given ID card access to the Yale-New Haven Hospital card readers. If a card is lost, there is a \$5 replacement fee. Application for replacement may be made through the Office of Student Affairs.

Parking

Bicycle parking is available in secured bicycle cages and keys are available from Yale-New Haven Hospital security. Limited automobile permit parking is available to all Yale faculty, staff, and students in two garages. Off-peak parking (nights and weekends) is also available in designated lots to Yale personnel by application to the Office of Security and Parking.

Shuttle Bus Service

For personnel with a Yale ID, free shuttle bus service is provided on weekdays around the University on a fixed route, to the railroad station, and to various parking lots. In addition, a free shuttle service runs between the Veterans Affairs Connecticut Health Care System, West Haven, and the School of Medicine on weekdays. There is also a free minibus/night shuttle within designated areas of New Haven seven nights a week from 6 P.M. until 7 A.M.

GENERAL UNIVERSITY OPPORTUNITIES

A calendar of events in the University is issued each week during the academic year in the *Yale Bulletin & Calendar*. The hours when special as well as permanent collections of the University may be seen are also recorded in this publication. The *Bulletin & Calendar* is available online at <http://www.yale.edu/opa/current/ybcurrent.html/>.

The Yale Peabody Museum of Natural History contains collections in anthropology, mineralogy, oceanography, paleontology, and some aspects of geology.

The Yale University Art Gallery contains representative collections of ancient, medieval, and Renaissance art, Near and Far Eastern art, archaeological material from the University's excavations, Pre-Columbian and African art, works of European and American masters from virtually every period, and a rich collection of modern art.

The Yale Center for British Art houses an extraordinary collection of British paintings, sculpture, drawings, and books given to the University by the late Paul Mellon, Yale Class of 1929.

There are more than eighty endowed lecture series held at Yale each year on subjects ranging from anatomy to theology, and including virtually all disciplines.

More than four hundred musical events take place at the University during the academic year. These include concerts presented by students and faculty of the School of Music, the Department of Music, the Yale Concert and Jazz bands, the Yale Glee Club, the Yale Symphony Orchestra, and other undergraduate singing and instrumental

groups. In addition to graduate recitals and ensemble performances, the School of Music features the Philharmonia Orchestra of Yale, the Chamber Music Society at Yale, the Duke Ellington Series, Great Organ Music at Yale, New Music New Haven, Yale Opera performances and public master classes, and the Faculty Artist Series. Among New Haven's numerous performing organizations are Orchestra New England, the New Haven Chorale, and the New Haven Symphony Orchestra.

For theatergoers, Yale and New Haven offer a wide range of dramatic productions at the University Theatre, Yale Repertory Theatre, Yale Cabaret, Long Wharf Theatre, Palace Theater, and Shubert Performing Arts Center.

The religious resources of Yale University serve all students, faculty, and staff. These resources are the University Chaplaincy (located on the lower level of Bingham Hall on Old Campus); the Church of Christ in Yale University, an open and affirming member congregation of the United Church of Christ; and Yale Religious Ministry, the on-campus association of clergy and nonordained representatives of various religious faiths. The ministry includes the Chapel of St. Thomas More, the parish church for all Roman Catholic students at the University; the Joseph Slifka Center for Jewish Life at Yale, a religious and cultural center for students of the Jewish faith; several Protestant denominational ministries and nondenominational groups; and religious groups such as the Baha'i Association, the New Haven Zen Center, and the Muslim Student Association. Additional information is available at <http://www.yale.edu/chaplain/>.

Established in 1949, the International Center of New Haven is a nonprofit community-based organization. The Center's programs are based on the idea that both the international community in Greater New Haven and the local community can benefit from each other. The Center is located at 442 Temple Street, and the office is open from 9 A.M. to 4:30 P.M., Monday through Thursday, and from 9 A.M. to noon on Friday. The work of the International Center is carried out by a small professional staff and by many volunteers in the community. The Center organizes lectures, trips, picnics, and special events, as well as English as a Second Language (ESL) classes, in addition to a number of programs including the International Host Friendship Program, 'Round The World Women, and the International Classroom Project. The International House, a large Tudor mansion located at 406 Prospect Street in New Haven, is the venue of most of the International Center's activities and the home of sixteen students and scholars. Rooms are available for the academic year and summer. For more information on any of these programs, or on International House, telephone 203.432.6460, fax 203.432.6462, e-mail international.centernh@yale.edu, or visit the Web site at <http://www.oiss.yale.edu/icnh/>.

The Payne Whitney Gymnasium is one of the most elaborate and extensive indoor athletic facilities in the world. This complex includes the 3,100-seat John J. Lee Amphitheater, the site for many indoor varsity sports contests; the Robert J. H. Kiphuth Exhibition Pool; the Brady Squash Center, a world-class facility with fifteen international-style courts; the Adrian C. Israel Fitness Center, a state-of-the-art exercise and weight-training complex; the Brooks-Dwyer Varsity Strength and Conditioning Center; the Colonel William K. Lanman, Jr. Center, a 30,000-square-foot space for recreational/intramural play and varsity team practice; the Greenberg Brothers Track, an eighth-mile

indoor jogging track; and other rooms devoted to fencing, gymnastics, rowing, wrestling, martial arts, general exercise, and dance. Numerous physical education classes in dance, martial arts, aerobic exercise, and sport skills are offered throughout the year. Graduate and professional school students may use the gym at no charge during the academic year and for a nominal fee during the summer term. Academic and summer memberships at reasonable fees are available for faculty, employees, postdoctoral and visiting fellows, and student spouses.

The David S. Ingalls Rink, the Sailing Center in Branford, the Outdoor Education Center (OEC), the tennis courts, and the golf course are open to faculty, students, and employees of the University at established fees.

Approximately thirty-five club sports and outdoor activities come under the jurisdiction of the Office of Outdoor Education and Club Sports. Many of the activities, both purely recreational and instructional, are open to graduate and professional school students. Faculty, staff, and alumni, as well as groups, may use the Outdoor Education Center (OEC). The center consists of two thousand acres in East Lyme, Connecticut, and includes cabins, campsites, pavilion, dining hall, swimming, boating, canoeing, and picnic groves beside a mile-long lake. Hiking trails surround a wildlife marsh. The OEC season extends from the third weekend in June through Labor Day and September weekends. For more information, telephone 203.432.2492 or visit the Web page at <http://yale.edu/athletics/> (click on Sport and Rec, then on Outdoor Education).

Throughout the year, Yale University graduate and professional school students have the opportunity to participate in numerous intramural sports activities. These seasonal, team-oriented activities include volleyball, soccer, and softball in the fall; basketball and volleyball in the winter; softball, soccer, and volleyball in the spring; and softball in the summer. With few exceptions, all academic-year graduate-professional student sports activities are scheduled on weekends, and most sports activities are open to competitive, recreational, and coeducational teams. More information is available from the Intramurals Office in Payne Whitney Gymnasium, 203.432.2487, or at <http://www.yale.edu/athletics/>.

OFFICE OF INTERNATIONAL STUDENTS AND SCHOLARS

The Office of International Students and Scholars (OISS) coordinates services and support to Yale's international students, faculty, staff, and their dependents. OISS assists members of the Yale international community with all matters of special concern to them and serves as a source of referral to other university offices and departments. OISS staff can provide assistance with employment, immigration, personal and cultural adjustment, and family and financial matters, as well as serve as a source of general information about living at Yale and in New Haven. In addition, as Yale University's representative for immigration concerns, OISS provides information and assistance to students, staff, and faculty on how to obtain and maintain legal status in the United States. OISS issues the visa documents needed to request entry into the United States under Yale's immigration sponsorship and processes requests for extensions of authorized periods of stay in the United States, school transfers, and employment authorization. All international stu-

dents and scholars must register with OISS as soon as they arrive at Yale, at which time OISS will provide information about orientation activities for newly arrived students, scholars, and family members. OISS programs, like the monthly international coffee hours, English conversation programs, and orientation receptions for newly arrived graduate students and postdocs, provide an opportunity to meet members of Yale's international community and become acquainted with the many resources of Yale University and New Haven.

OISS maintains an extensive Web site (<http://www.oiss.yale.edu/>) with useful information for students and scholars prior to and upon arrival in New Haven. As U.S. immigration regulations are complex and change rather frequently, we urge international students and scholars to visit the office and check the Web site for the most recent updates. International graduate students, postdocs, and visiting scholars can get connected with OISS by subscribing to one or both of the OISS e-mail lists. OISS-L is the electronic newsletter with important information for Yale's international community. YaleInternational E-Group is an interactive list through which almost 800 international students and scholars keep each other informed about events in the area. Check the Web site for more information. To subscribe to either, send a message to oiss@yale.edu.

Spouses and partners of international students and scholars will want to know about ISPY – International Spouses and Partners at Yale. Information about ISPY and other OISS programs can be found on the OISS Web site.

The Office of International Students and Scholars, located at 246 Church Street, Suite 201, is open Monday through Friday from 8.30 A.M. to 5 P.M.

RESOURCE OFFICE ON DISABILITIES

The Resource Office on Disabilities facilitates accommodations for undergraduate and graduate and professional school students with disabilities who register with and have appropriate documentation on file in the Resource Office. Early planning is critical. Documentation may be submitted to the Resource Office even though a specific accommodation request is not anticipated at the time of registration. It is recommended that matriculating students in need of disability-related accommodations at Yale University contact the Resource Office by June 1. Returning students must contact the Resource Office at the beginning of each term to arrange for course and exam accommodations. All School of Medicine students requesting accommodations for a disability must also speak with the associate dean for student affairs.

The Resource Office also provides assistance to students with temporary disabilities. General informational inquiries are welcome from students and members of the Yale community and from the public. The mailing address is Resource Office on Disabilities, Yale University, PO Box 208305, New Haven CT 06520-8305. The Resource Office is located in William L. Harkness Hall (WLH), Rooms 102 and 103. Access to the Resource Office is through the College Street entrance to WLH. Office hours are Monday through Friday, 8.30 A.M. to 5 P.M. Voice callers may reach staff at 203.432.2324; TTY/TDD callers at 203.432.8250. The Resource Office may also be reached by e-mail (judith.york@yale.edu) or through its Web site (<http://www.yale.edu/rod/>).

Departments

This section provides information for all departments in the School of Medicine. Each department listing provides a roster of faculty, fellows, and associates, as well as descriptions of courses.

Courses designated *f* meet in the fall term only. Courses designated *s* meet in the spring term only. Courses enclosed in brackets are not offered in the current academic year.

ANATOMY AND EXPERIMENTAL SURGERY

(Section of the Department of Surgery)

Office: SHM C349, 785.2814

Professor

E. S. Crelin (*Emeritus*)

Associate Professors

L. J. Rizzolo (*Director of Medical Studies*), W. B. Stewart (*Section Chief*)

Lecturers

H. Briggs, M. Conroy, S. Ghofrany, S. E. Kapadia, C. Rahner, W. Southwick

Anatomy 103, Principles of Human Anatomy and Development. This course, designed specifically for first-year medical students, provides an opportunity to dissect or observe all structures of the human body. Lectures, conferences, models, radiology, and Web-based curriculum materials are included. Four students are assigned to each cadaver; students work on different regions simultaneously. W. B. Stewart and staff.

Anatomy 104a/b, Special Dissections in Anatomy. A laboratory designed to meet the needs of individual students. Any part of the cadaver may be dissected. Each student is assigned an anatomist and/or clinical specialist to act as consultant(s). Prerequisite: Anatomy 103. Staff.

ANESTHESIOLOGY

Office: TMP 3, 785.2802

Professors

P. G. Barash, J. G. Collins, J. Ehrenwerth, N. M. Greene (*Emeritus*), R. L. Hines (*Chair*), Z. Kain, L. M. Kitahata (*Emeritus*), C. J. Kopriva (*Emeritus*), C. LaMotte (*Neuro-surgery*), R. H. LaMotte, G. Lister, Jr. (*Pediatrics*), P. Miller, T. H. Oh, T. D. Rafferty, S. Rosenbaum, D. Silverman, R. Sinatra, M. Sivarajan

Associate Professors

M. S. Afifi, P. Atanassoff, C. Bell, S. Garwood, R. Kerns, Jr. (*Psychiatry*), P. Langevin, B. C. McClain, G. McCloskey, P. Nadkarni, J. S. Naulty, A. Perrino, Jr., C. Rinder, W. Rosenblatt, K. Ruskin, R. Schultz (*Child Study Center*), J. Schwartz (*Director of Medical Studies*), F. Sevarino, K. Shelley, R. Shiffman (*Pediatrics*)

Assistant Professors

S. Akhtar, D. Anca, R. Aouad, C. Brandt, A. M. Bustos, K.-H. Cheung, J. H. Chung, S. Dabu-Bondoc, J. P. Escandon, D. Gaal, K. Gyarteng-Dakwa, M. Gonzalez, T. M. Halaszynski, L. Helgeson, P. Leith, W. Lewis, A. M. Lobo, M. Lomanta, I. Maranets, K. Marschall, R. Modak, W. Norfleet, M. Punjala, R. Ramani, M. Robbins, R. Romero, H. Saadat, V. Salgar, R. Schoenfelder, S. Shivananjappa, G. Sivarajan, R. Stout, N. Vadivelu, D. Vaughn, S.-M. Wang, J. M. Watkins-Pitchford, Q. Zhu

Research Scientist

F. Sayward

Associate Research Scientists

A. Deshpande, S. Frawley, R. Friedman, J.-L. Li, L. Marengo, P. G. Mutalik, T. O'Connor, M. Shifman, R. Srivastava, N. Tosches, F. A. White, H. Yao

Clinical Professors

J. Katz, R. Schrier

Associate Clinical Professors

K. S. Chung, B. Kosarussavadi, A. Mandel, E. Prokop, A. Pschirrer, Jr., S. Stone, A. Weinstock

Assistant Clinical Professors

C. Ayoub, H. D. Dubow, M. Hartmannsgruber, P. Heller, S. Puri, K. R. Stone, J. Weinberg, D. Zacharakos

Lecturers

T. Handler, B. Kaplan

Anesthesiology 103, Clinical Clerkship. Four students are assigned throughout the year to either Yale-New Haven Hospital or to the Veterans Affairs Connecticut Health Care System, West Haven, for basic introduction to clinical anesthesiology, including

preoperative evaluation of patients, selection of anesthetic technique, and administration of anesthetics under supervision. Instruction in airway management and endotracheal intubation, monitoring techniques, and clinical pharmacology and physiology is emphasized. Three-week full-time clinical clerkship for two students. J. Schwartz.

Anesthesiology 104, Advanced Clinical Clerkship. Individualized program of instruction in anesthesia subspecialties, including cardiovascular, neurosurgical, obstetrical, and pediatric anesthesia. Two- or three-week full-time clinical clerkship throughout the year for two students. J. Schwartz.

Anesthesiology 132, Pain: Diagnosis and Treatment. Management of chronic pain in pain clinic setting. Psychophysiology of pain diagnostic techniques, including nerve blocks, and therapeutic modalities, such as neurally applied opiates and other new advances. Part-time elective; hours to be arranged, for one or two students. J. G. Collins.

Anesthesiology 141, Clinical Research. Participation in ongoing research by departmental faculty involving clinical responses to drugs affecting cardiopulmonary and central nervous systems. Development of individual research projects encouraged as well. Hours to be arranged for one or two students. R. L. Hines, D. Silverman, R. Sinatra.

Anesthesiology 142, Basic Research within Anesthesiology. Laboratory research training in autonomic, cardiopulmonary, or neurophysiological effects of drugs. Hours to be arranged for one or two students. J. G. Collins, R. H. LaMotte.

Anesthesiology 143, Topics and Research in International Health Issues. A one- or two-term elective for M.D., masters, and doctoral candidates with an interest in international medicine. The student is assigned reading and research work with a member of the Department of Anesthesiology who participates in direct international medical care or administration. Hours to be arranged. P. Barash, D. Gaal, R. L. Hines, W. Rosenblatt, J. Schwartz.

CELL BIOLOGY

Office: SHM C235, 785.4311

Professors

N. Andrews (*Microbial Pathogenesis*), R. Baron (*Orthopaedics and Rehabilitation*), M. Caplan (*Cellular and Molecular Physiology*), L. Cooley (*Genetics*), P. De Camilli, S. Ferro-Novick (*Director of Graduate Studies*), J. Galan (*Chair, Microbial Pathogenesis*), F. Gorelick (*Internal Medicine*), J. Jamieson (*Director of Medical Studies; Director of M.D.-Ph.D. Program*), K. Joiner (*Internal Medicine; Director, Investigative Medicine Program*), T. Lentz (*Vice Chair; Associate Dean for Admissions, School of Medicine*), V. Marchesi (*Pathology*), I. Mellman (*Chair*), M. Mooseker (*Molecular, Cellular, and Developmental Biology*), M. Nathanson (*Internal Medicine*), P. Novick, T. Pollard (*Molecular, Cellular, and Developmental Biology*), E. Ullu (*Internal Medicine*), G. Warren

Associate Professors

C. Hashimoto, S. Wolin

Assistant Professors

K. Reinisch, P. Takizawa

Associate Research Scientists

H. Chang, M. Pypaert, D. Sheff, D. Toomre, E. S. Trombetta, M. Wenk

Cell Biology 502, The Cellular Basis of Human Biology. This full-year course is designed to provide medical students with a current and comprehensive review of biologic structure and function at the cellular, tissue, and organ system levels. Areas covered include replication and transcription of the genome; regulation of the cell cycle and mitosis; protein biosynthesis and membrane targeting; cell motility and the cytoskeleton; signal transduction; nerve and muscle function; and endocrine and reproductive cell biology. Clinical correlation sessions, which illustrate the contributions of cell biology to specific medical problems, are interspersed in the lecture schedule. Histophysiology laboratories provide practical experience with the light microscope for exploring cell and tissue structure. J. Jamieson, T. Lentz, F. Gorelick, and staff.

Cell Biology 503, Histology Laboratory. A laboratory in microscopic anatomy to be taken in conjunction with 502. T. Lentz and staff.

Cell Biology 520, Research Rotations in Cell Biology and Molecular Physiology. Three ten-week periods of directed research and reading in selected laboratories. For first-year graduate students in the Cell Biology and Molecular Physiology track. Staff.

Cell Biology 601, The Molecular and Cellular Basis of Human Disease. Given in parallel to 502. The course comprises an exploration of primary literature and critical assessment of the data that form a basis for understanding human disease. A series of human genetic diseases, whose mechanisms have been identified as a result of sequencing the human genome, are explored. Students are required to search out supportive data, discuss it with the section leader, and present it to the group. P. De Camilli, F. Gorelick, and staff.

Cell Biology 602a and 603a, Molecular Cell Biology and Tutorial. A comprehensive introduction to the molecular and mechanistic aspects of cell biology for graduate students in all programs. The emphasis is on fundamental issues of cellular organization, regulation, biogenesis, and function at the molecular level. T. Pollard, G. Warren, S. Wolin, M. Mooseker.

Cell Biology 606b, Advanced Molecular Cell Biology. This seminar course, which meets once a week, covers topics in modern cell biology. It should serve to introduce students to areas they might not have considered in prior courses. P. Novick.

Cell Biology 676b/MB&B 676b, Responsible Conduct of Research. Designed for students who are beginning to do scientific research. The course seeks to describe some of the basic features of life in contemporary research and some of the personal and professional issues that researchers encounter in their work. Approximately six sessions during the spring term, run in a seminar/discussion format. L. Regan and staff.

Cell Biology 727b, Advanced Seminar Course. This seminar course, which meets once a week, covers several topics suggested by the second-year Cell Biology students. It should serve to introduce students to areas they might not have considered in prior courses. Each topic is spread over 3–6 sessions, starting with an introductory overview and followed by detailed analysis of key papers. Topics for 2002–2003 to be announced. S. Ferro-Novick.

CELLULAR AND MOLECULAR PHYSIOLOGY

Office: SHM B147, 785.2989

Professors

P. S. Aronson (*Internal Medicine*), H. J. Binder (*Internal Medicine*), W. F. Boron, E. L. Boulpaep (*Director of Medical Studies; Director of Graduate Studies*), T. H. Brown (*Psychology*), M. J. Caplan, W. K. Chandler, L. B. Cohen, A. B. DuBois (*Epidemiology and Public Health*), B. Ehrlich (*Pharmacology*), B. Forbush III, J. P. Geibel (*Surgery*), G. H. Giebisch (*Sterling Professor*), S. Goldstein (*Pediatrics*), S. C. Hebert (*Chair*), J. F. Hoffman (*Higgins Professor*), L. Kaczmarek (*Pharmacology*), E. Moczydlowski (*Pharmacology*), S. Segal, G. I. Shulman (*Internal Medicine*), F. J. Sigworth, C. L. Slayman, C. W. Slayman (*Genetics*), J. T. Stitt (*Epidemiology and Public Health*), F. S. Wright (*Internal Medicine*)

Associate Professors

C. M. Canessa, M. Egan (*Pediatrics*), G. Richerson (*Neurology*)

Assistant Professors

A. Bordey (*Neurosurgery*), S. I. Dworetzky (*Adjunct*), R. M. Fitzsimonds, P. D. Neuffer, V. Pieribone, D. Zenisek

Research Scientists

T. Wang, D. Zecevic

Associate Research Scientists

M. Bailey, P. Bouyer, S. Cheng, D. Chester, B. Davis, K. Dong, C. Falk, I. Gimenez, K. Klemic, S. Krueger, M. Lu, G. MacGregor, Y. Yang, P. Zhang, Y. Zhou

Postdoctoral Fellows

D. Alvarez de la Rosa, S. Bearden, A. Brown, A. Buschmann, V. Chauvet, T. Coric, T. Giraldez, E. Kamsteeg, G. Payne, M. Pedersen, J. Rojas, L. Rondeau-Barakat, N. Todorovic, D. Vucinic, H. Yamazaki

Postdoctoral Associates

B. Baker, Z. P. Du, C. Fulton, Q. Jiang, T. Kimura, A. Kolar, E. Kosmidis, Q. Leng, J. Lu, R. Looft-Wilson, A. O'Connell, M. Radajcic, A. Rivetta, L. Tang, Y. Wang, Q. Yan, A. Zatti, G. Zeng, J. Zheng

Lecturers

M. Apkon (*Pediatrics*), L. Cantley (*Internal Medicine*), G. Desir (*Internal Medicine*), G. Lister, Jr. (*Pediatrics*), R. Mahnensmith (*Internal Medicine*)

Cellular and Molecular Physiology 550a/ENAS 550a/MCDB 550a, Physiological Systems. We develop a foundation in human physiology and the principles of feedback and regulation of homeostasis at the cellular level and of the organism as a whole. The biophysical properties of cells, tissues, and organs are developed in context of the functions they perform. We first examine cellular and membrane physiology, which leads into the physiology of skeletal muscle and its neural control, smooth muscle in hollow organs,

and the heart as a muscular pump. The regulation of cardiac output, blood flow, and vascular exchange are each considered in context and then integrated in light of exercise physiology and the maintenance of arterial pressure. The respiratory system is considered in light of the mechanical interactions between the lung and the chest wall, convection and diffusion of gasses, and respiratory control of acid-base balance. We continue by exploring the functional organization of the kidney, how urine is formed, and how salt, fluid, and acid-base homeostasis are regulated. The digestive system is developed in the context of energy balance and temperature regulation, substrate metabolism, and its regulation by hormones. Calcium, water, and electrolyte balance are incorporated in further exploration of the endocrine system, which concludes with the physiology of reproduction. The organization of the central nervous system is then considered in light of synaptic physiology, learning and memory, and the special senses. Examining the body's innate and acquired defense mechanisms concludes the overall course material. In addition, graduate students evaluate pertinent research topics on a weekly basis through directed readings, written reports, and group conferences with the instructor. S. Segal and staff.

Cellular and Molecular Physiology 560b, Cell and Molecular Physiology from Fundamental Mechanisms to Human Disease. This course focuses on understanding the processes that transfer molecules across membranes at the cellular, molecular, biophysical, and physiologic levels. Students learn about the different classes of molecular machines that mediate membrane transport, generate electrical currents, or perform mechanical displacement. Emphasis is placed upon the relationship between the molecular structures of membrane proteins and their individual functions. The interactions among transport proteins in determining the physiologic behaviors of cells and tissues are also stressed. Molecular motors are introduced and their mechanical relationship to cell function is explored. Students read papers from the scientific literature that establish the connections between mutations in genes encoding membrane proteins and a wide variety of human genetic diseases. M. Caplan, E. Boulpaep, M. Mooseker.

[Cellular and Molecular Physiology 610b, Neurophysiology: Theory and Practice. Theoretical and practical considerations of various current neurophysiologic methods, including whole-cell and patch-clamp methods, brain slice recordings, simple nervous system models, optical methods (calcium, voltage, and intrinsic signals), electrophysiology equipment/software, and recordings from intact nervous systems. V. Pieribone, F. Sigworth. Not offered in 2002–2003.]

Cellular and Molecular Physiology 710b/MB&B 710b4, Electron Cryo-Microscopy for Protein Structure Determination. Understanding cellular function requires structural and biochemical studies at an ever-increasing level of complexity. The course is an introduction into the concepts and applications of high-resolution electron cryo-microscopy. This rapidly emerging, new technique is the only tool known to date that allows biological macromolecules to be studied at all levels of resolution ranging from their cellular organization to near atomic detail. No specific prerequisites. However, parts of the course deal with diffraction theory and physical principles of image formation. Therefore, knowledge of calculus and basic physics is advantageous. F. Sigworth, V. Unger.

CHILD STUDY CENTER

Office: NIHB 208, 785.2513

Professors

J. P. Comer (*Associate Dean*), S. Kagan (*Adjunct*), Z. Kain (*Anesthesiology*), A. Kazdin (*Psychology*), R. A. King, J. Leckman, M. F. Leonard (*Emeritus*), J. Leventhal (*Pediatrics*), M. Lewis (*Emeritus*), R. Makuch (*Public Health*), L. Mayes, D. F. Musto, J. E. Schowalter, B. Shaywitz (*Pediatrics*), S. Shaywitz (*Pediatrics*), J. Singer (*Psychology*), D. L. Snow (*Psychiatry*), S. Southwick (*Psychiatry*), S. Sparrow (*Emeritus*), F. R. Volkmar, J. Woolston, E. F. Zigler (*Psychology*)

Associate Professors

B. Forsyth (*Pediatrics*), E. Grigorenko (*Psychology*), S. Horwitz (*Public Health*), A. Klin, D. Lipschitz (*Psychiatry*), P. Lombroso, S. Marans, A. Martin, L. Scahill, D. Schonfeld (*Pediatrics*), R. Schultz, M. Schwab-Stone, D. Stubbe, J. Tebes (*Psychiatry*), F. Vaccarino, M. Westerveld (*Neurosurgery*), H. Zhang (*Public Health*)

Assistant Professors

S. Berkowitz, N. Close, C. Gallo, J. Kaufman (*Psychiatry*), V. Maholmes, T. McMahon (*Psychiatry*), M. State, L. Thomas, V. R. Weersing, C. Weitzman (*Pediatrics*)

Senior Research Scientists

D. Cicchetti, G. Fisch (*Epidemiology and Public Health*), M. F. Leonard, M. Lewis, S. Sparrow

Research Scientists

G. M. Anderson, M. K. Pruett (*Psychiatry*), V. R. Seitz

Associate Research Scientists

F. Brown, L. Cardona, R. Casey, Jr., K. Chawarska, E. Culler, C. Emmons, D. Findley, M. Finn-Stevenson, R. Franks, F. Ghassemi, W. Gilliam, M. Goyette-Ewing, F. Gregory, K. Koenig, M. A. Levett-Lowe, J. Lewis III, R. Murphy, S. Paul, C. Rowland, D. Szydlo, J. Szydlo

Research Affiliates

M. Ben-Avie, J. Alsobrook, P. L. Delgobbo, Y. Kohn, M. Kohorn, R. Lord, R. Mayo, M. Mercadante, J. Naegele, S. Nash, T. Shriver, V. Sperry, R. Vermeiren, R. Weissberg, L. Wood, A. Zohar

Clinical Professors

T. W. Downey, R. W. Evans, A. Kaufman, R. Kramer (*Pediatrics*), N. Laor, S. Levy (*Pediatrics*), D. O. Lewis, K. Pruett (*Director of Medical Studies*), S. Ritvo, H. S. Sacks

Associate Clinical Professors

J. Adnopoz, R. Angoff (*Pediatrics*), P. Armbruster, S. Boltax-Stern, C. R. Canny (*Pediatrics*), A. Carter, P. M. Cohen, K. Dahl, L. Deutsch, J. B. Ferholt, N. Haynes, D. M. Koenigsberg, E. L. Loewald, J. Narad, E. A. Perlsig, J. D. Saccio, A. H. Schwartz, E. L. Stone (*Pediatrics*), A. Thies, L. Vitulano, T. Zanker

Assistant Clinical Professors

H. A. Allen, A. Avni-Singer (*Pediatrics*), M. Berkman (*Social Work*), G. Blau, J. Bregman, K. Brody, P. Cantor, L. Cariaga-Lo, P. Chappell, J. Charney, J. T. Collins, A. B. Colonna, C. Cox (*Social Work*), E. Dykens, H. Edelson-Costa, G. Epstein-Wilf, M. Fahey, G. D. Gammon, M. Gladstone, R. M. Greenbaum, W. L. Hill, Jr. (*Psychiatry*), E. O. Jennings, I. R. Jennings, E. Joyner, H. Kahn, M. Kaplan, R. King, B. Langenauer, P. Leebens, D. Lowell (*Pediatrics*), M. Lustick, N. Lustman, J. Madigan, J. P. Marachi, R. McWilliam, J. Meyers, S. Migdole (*Psychiatry*), E. Millman, N. Moss, F. J. Ninivaggi, B. Nordhaus (*Social Work*), S. Ort, J. F. Poll, M. Powers, G. Racusin (*Psychiatry*), C. Ripple, W. W. Roosen, D. Rotnem (*Social Work*), H. L. Sacks (*Social Work*), M. Schaefer, L. Schilling (*School of Nursing*), L. Siegel, A. Smaller, S. Steremberg, F. J. Streets (*Social Work*), P. J. Van Wattum, S. L. Werblood, H. Wetstone, C. P. Wiles, Jr., J. Williams (*Psychiatry*), P. Yeung, L. D. Zimmerman

Clinical Instructors

R. Avila, R. Avni-Singer (*Social Work*), B. Barile, K. Barrett (*Social Work*), E. Becker-Dunn (*Psychiatry; Social Work*), L. Bogen, D. Boyd (*Social Work*), R. Browne (*Social Work*), J. Buchbinder (*Social Work*), L. Budnick (*Social Work*), A. Caracansi, U. Chock (*Social Work*), K. Clougherty (*Social Work*), J. Connell (*Social Work*), G. Costa, J. Currier-Ezepchick (*Social Work*), J. Dawson (*Social Work*), C. De Dios-Kenn (*Social Work*), M. De-Naclerio, A. Dobos, Jr. (*Pediatrics*), S. Dobuler (*Social Work*), D. Dodge (*Social Work*), L. Donovan, K. Dubois-Walton, L. Ewing (*Social Work*), J. A. Gallalee, A. Gewirtz, L. Goldberg, J. Goldblum (*Social Work*), S. Gossart-Walker (*Social Work*), L. Gould (*Social Work*), C. Heise (*Social Work*), P. Hetherington, C. Hogan (*Social Work*), K. Holdt (*Social Work*), D. Horvath (*Social Work*), S. Jani (*Social Work*), M. Kern (*Social Work*), B. Keyes, K. Knoebber, A. Kravitz (*Social Work*), E. Kressley, J. Landau, M. Lassalle (*Social Work*), W. Levine, A. Lustbader, M. Lyons (*Social Work*), W. Marans, M. Martinez (*Social Work*), B. Mason, M. McCarthy, P. McGreen, B. Meierowitz (*Social Work*), D. Meyers (*Social Work*), L. Monaco, S. Newgass (*Social Work*), R. Nikolov, K. Olivetti (*Social Work*), C. Olson, R. Plant, R. Pugliese, B. Rickler, P. Rockholz (*Social Work*), E. Rodriguez-Keyes (*Social Work*), M. Rowe (*Social Work*), J. Russo (*Social Work*), P. Sadowitz, C. Schaefer (*Social Work*), A. Schuessler, R. Shoulders (*Social Work*), R. Sotsky, G. Weiss, C. White, G. Winn (*Social Work*)

Lecturers

D. Bella, M. Bollers, K. P. Carlson, C. Cooper, E. Ennis, D. Esserman, J. Gillette, M. Glick, S. Goldstein, J. Gruendel, D. P. Hauser, S. Heidmann, C. Horwitz, S. Janes, N. Kaufman, B. Kerman, K. Lustman-Findling, L. Nash, R. Paul, D. Pauls, B. Peterson, J. Platner, S. Pryor, C. Reberkenny-Frisketti, D. Rosen, B. Rourke, E. Rubin, M. Sappe, B. Sherman, V. Shiller, D. Smolever, J. Stoneman, K. Tsatsanis, J. Watt, E. C. Wolff

The Child Study Center is a multidisciplinary academic department of the School of Medicine for the study and care of children from birth through adolescence and their families. Child psychiatrists, psychologists, pediatricians, social workers, psychoanalysts, biomedical scientists, nurses, and other professionals collaboratively engage in research

and treatment programs on various aspects of children's growth and development, both normal and deviant. Research programs include child development, psychiatric disorders, social systems and schools, mental retardation, psychosomatic conditions, crisis and trauma, and treatment. Clinical services are provided in general and specialized outpatient clinics, in the Child Psychiatry Inpatient Service in the Children's Hospital of Yale-New Haven, and in the Child and Adolescent Psychiatry Consultation-Liaison Service. The center provides courses and other academic opportunities for undergraduates and graduate students in various disciplines concerned with children and families, as well as specialized training in child psychiatry, psychology, social work, and clinical research.

Child Study 122b, Aspects of Child and Adolescent Development in the Practice of Medicine. The concept of development serves as a unifying idea for this course. The major cognitive and emotional developmental tasks and behavioral characteristics at each stage of development in infancy, childhood, and adolescence are described and illustrated in part by the child's reactions to illness, hospitalization, dying, and death at different stages of development. Developmental contributions to the understanding of psychopathology in childhood are also outlined. The course offers live interviews of children and their families. First year, spring term, weekly one-hour lectures, and one and one-half hour seminars. K. Pruett and Child Study Center faculty.

Child Study 222, Childhood Psychopathology. Students are offered lectures, workshops, and videotapes of children with major or common psychiatric disorders usually first evident during infancy, childhood, and adolescence, including autism, mental retardation, attention deficit hyperactivity disorder, school phobia, learning disabilities, Tourette's Syndrome, obsessive-compulsive disorder, and adolescent disorders. Second year. R. A. King and Child Study Center faculty.

Child Study 322, Developmental, Psychiatric, and Psychological Assessment of Infants, Children, and Adolescents. A series of lectures on developmental assessment (DA), psychological testing (P), and the Mental Status Examination (MSE) of children is offered to all students on the Pediatric Clerkship. Students may have the opportunity to observe such testings while on the Pediatric Clerkship. Further opportunities to observe DA and P, and to perform mental status examinations of children, are provided during the Child Psychiatry track of the Psychiatry Clerkship. L. Mayes, L. Cardona.

Child Study 323, The Child Psychiatry Track. This track is offered to four students (two each, either at the Child Study Center or Riverview Hospital) per six-week rotation on the Psychiatry Clerkship. It provides an opportunity to observe and practice the process used to evaluate and diagnose and to plan the treatment of the child and his or her family. Additionally, it completes the basic requirements of the Adult Psychiatry Clerkship, including writing reports on three adult patients. The track has three components: (a) a set of mandatory core experiences, (b) a group of optional selective experiences, and (c) Practicums and Readings. The practicum includes interviewing, working up, and writing a report on two child patients at either the Children's Psychiatric Inpatient Service or Riverview Hospital under the supervision of a child psychiatry tutor. In addition, each student prepares a written presentation related to an area of interest in child psychiatry. Psychiatry clerks are based at both the Child Study Center and the Children's Psychiatric Inpatient Service (Winchester I, Y-NHH) and at Riverview Hospital. J. Woolston, J. A. Gallalee, G. D. Gammon, R. King, L. Siegel.

Child Study 324, Electives in Research. Medical students join with faculty and post-doctoral research fellows in participating in patient-oriented or laboratory-based research projects. Students participate in weekly research seminars and multidisciplinary work groups as well as being directly engaged in some aspect of a new or ongoing research project with a faculty mentor. The elective is full time and has a minimum duration of three months. J. Leckman and Child Study Center faculty.

Child Study 325/Psychiatry 325, Child Psychiatry Elective, Yale Child Study Center. The aim of this elective is to provide the student with an intensive experience in infant, child, and adolescent psychiatry. The curriculum includes assessments of normal development and psychopathology in childhood, treatment methods, and research in major disorders of childhood. The elective takes advantage of the wide range of ongoing seminars, conferences, and clinical services in place at the Child Study Center. Teaching methods include seminars, conferences, field observations, ward rounds, and practica selected by the student following consultation with the director of medical studies, Child Study Center. Open to fourth-year students throughout the year (except July and August). J. Woolston and staff.

COMPARATIVE MEDICINE

Office: 375 Congress Avenue, LSOG 117, 785.2525

Professor

R. O. Jacoby (*Chair*)

Associate Professor

J. D. Macy

Assistant Professors

M. J. Harding, J. D. Reuter, P. C. Smith, C. J. Zeiss

Research Scientists

J. L. Brandsma, S. R. Compton, J. M. McGrath, G. Yao

Associate Research Scientists

L. J. Ball-Goodrich, T. Nottoli

Research Affiliate

P. N. Bhatt

Assistant Clinical Professors

L. K. Johnson, J. W. Streett

Professor Adjunct

E. C. Weir

Associate Professor Adjunct

F. R. Homberger

DERMATOLOGY

Office: LCI 501, 785.4092

Professors

J. Bologna (*Vice Chair, Clinical Affairs*), H. K. Bottomly (*Immunobiology*), I. M. Braverman, P. Cresswell (*Immunobiology*), R. L. Edelson (*Chair; Deputy Dean for Clinical Affairs*), P. Heald (*Director of Medical Studies; Vice Chair for Medical Students and Post-graduate Medical Education Programs*), C. Janeway (*Immunobiology*), B. M. Kacinski (*Therapeutic Radiology*), D. Leffell (*Director, Yale Medical Group, YSM; and Senior Associate Dean for Clinical Activities & Strategic Planning*), A. B. Lerner (*Emeritus*), L. Milstone, J. S. Pober (*Pathology*), R. E. Tigelaar (*Vice Chair, Academic and Research Affairs; Director, Skin Disease Research Center*)

Associate Professor

E. Glusac (*Pathology*), J. McNiff, L. Wilson (*Therapeutic Radiology*)

Assistant Professors

S. Aasi, R. Antaya, S. Cowper, M. Girardi (*Director, Residency Program*), C. Herrick, R. Lazova, J. Schechner

Instructor

S. Book

Senior Research Scientists

R. Halaban, J. M. Pawelek

Research Scientists

C. Berger, A. Chakraborty, P. Schwartz

Associate Research Scientists

J. Haggerty, D. Hanlon, M. Kluger

Clinical Professors

K. Arndt, A. P. Cipriano, I. Dvoretzky, M. T. Johnson, R. C. Savin

Associate Clinical Professors

A. Bronin, F. Castiglione, Jr., I. S. Cohen, D. Davidson, J. Dover, J. Edelglass, S. Imaeda, R. S. Kahan, T. P. Kugelman, E. B. Milstone, P. Schneiderman, P. Shapiro, L. A. Sibrack, K. Watsky

Assistant Clinical Professors

J. Alter, S. Barrett, S. H. Bender, P. Bevilacqua, D. Bilinski, C. Carroll, K. Cohen, M. P. Coolidge, L. Daman, K. M. Diette, L. D'Onofrio, D. Duke, G. Federman, D. Feinberg, B. Goldberg, M. Goldstein, D. Greene, M. Kaminer, F. Kay, S. Kolenik, L. Kugelman, R. Langdon, J. C. Lehrman, S. Lerner, L. Luck, E. Markstein, B. McGrath, E. Mirrer, E. Naidorf, M. Noonan, W. Notaro, R. Oshman, B. Richter, J. G. Sansing, Jr., N. Sherline, N. R. Silverman

Clinical Instructors

A. Atton, C. Chess, S. Dietz, J. Grant-Kels, W. Jacoby, J. Knispel, E. Marsh, D. Miller, M. Oestreicher, J. Sabetta, A. Zalka, J. Zirn, B. Zubkov

Postdoctoral Fellows

S. Crane, D. Kaplan, Y. Weiru

Dermatology 120. Instruction in the evaluation and management of patients with dermatologic problems in both outpatient and inpatient settings. Emphasis is on common dermatologic problems and cutaneous pathophysiology. Ambulatory patients are seen in the Yale Physicians Building and at the Veterans Affairs Connecticut Health Care System, West Haven. Inpatient rounds are made at Yale-New Haven Hospital. Didactic sessions are held with staff three to five times a week. Grand rounds and weekly lectures are also an important feature of the elective. Course is offered for eight four-week sessions. S. Aasi, R. Antaya, J. Bologna, I. M. Braverman, S. Cowper, R. L. Edelson, M. Girardi, P. Heald, C. Herrick, R. Lazova, D. Leffell, J. McNiff, L. Milstone, J. Schechner, R. E. Tigelaar.

DIAGNOSTIC RADIOLOGY

Office: NF 2-332 SP, 785.6938

Professors

J. J. Abrahams, J. A. Brink (*Vice Chair*), R. A. Bronen, M. I. Burrell, A. M. Curtis, J. S. Duncan, M. G. Glickman (*Emeritus*), R. H. Greenspan (*Emeritus*), P. B. Hoffer, E. L. Kier, J. P. Lawson (*Emeritus*), C. H. Lee-French, S. M. McCarthy, B. L. McClellan (*Chair*), I. Prohovnik (*Adjunct*), A. T. Rosenfield, L. M. Scoult, C. Shaw, R. G. Shulman (*Molecular Biophysics and Biochemistry; Emeritus*), G. Sze, N. Talner (*Pediatrics; Emeritus*), K. J. Taylor, I. Tocino, F. J. Wackers, R. I. White, Jr., B. Zaret (*Internal Medicine*)

Associate Professors

J. Arrighi (*Internal Medicine*), R. T. Constable, E. A. Cornelius (*Emeritus*), H. P. Forman (*Vice Chair*), R. Fulbright, P. Garg, M. Johnson, L. Katz, C. Miller, J. Pollak, D. L. Rothman, A. J. Sinusas (*Internal Medicine*), L. H. Staib, J. Sunshine (*Adjunct*), H. Tagare, C. R. Taylor, S. Woods (*Psychiatry*), I. G. Zubal

Assistant Professors

J. Aruny, S. Bokhari, D. W. Cheng, R. de Graaf, N. Denbow, A. Haims, R. Hooley, L. J. Horvath, F. Hyder, W. Kubal, H. Lustberg, L. Philpotts, R. Sadar, M. G. Wysoki, M. Zawin

Instructors

J. K. Fan, J. Hawley

Associate Research Scientists

N. Driesen, M. Hampson, I. Kida, V. Neklesa, X. Papademetris, K. Purushothaman, Y. Wang, F. Xu

Research Scientists

T. Price, P. Skudlarski

Research Affiliate

G. Gindi

Clinical Professors

D. B. Nunez, J. Westcott

Associate Clinical Professors

G. Berg, K. Bird, V. Caride, D. Colley, D. Denny, G. Fishbone, G. Freedman, L. Hammers, E. Hyson, R. Lange, M. Ozonoff, N. Rosenfield, L. Russin, J. Slavin, N. Vincent

Assistant Clinical Professors

K. Allen, R. Becker, J. Biebuyck, J. Blanco, A. Bravo, T. R. Brown, D. Butler, D. S. Cerva, O. G. Choy, P. Cole, J. A. Creatura, J. Crowe, H. M. Dey, K. Dickey, L. C. Foley, W. Friedman, H. Gahbauer, M. Glicklich, R. Gonzalez, B. Griffith, C. I. Heller,

B. Jay, K. Johnson, H. Jung, A. Kalyanpur, D. Kaplan, P. Karak, A. Kaye, J. Klein, H. Lee, R. Ludwig, N. Mandell, T. McCauley, D. Moote, S. Nadel, J. Neitlich, G. Novick, E. Ragaza, P. Reeser, J. Richter, M. Robbins, M. Rosenblatt, S. Saluja, D. Schwartz, J. Seibyl, P. Shimkin, B. Simonds, J. Sokolow, G. R. Spiegel, R. Tash, S. Ulreich, G. Vahjen, P. Waxman, J. White, K. Zimmerman

Clinical Instructors

S. Berger, L. Gold, C. Kubiak, J. A. Obando, H. Pathak, M. Straub, P. Varma, J. Yi, D. Youmans

Clinical Fellows

T. Catanzano, F. Cuomo, K. Das, P. Deol, R. Gibson, K. Giles, V. Gupta, P. Kang, J. Luckman, S. Papez, A. Reeves, Y. Safriel, C. V. Saradoff, S. Tuzinkiewicz, K. Vinaya, S. Walton, T. Walton

Postdoctoral Fellow

R. Astur

Postdoctoral Associates

S. Chelikani, M. Negishi, A. Pinus, P. V. Rekkas, R. Schafer, P. Shkarin, H. Trubel, W. Yu

Lecturers

G. Conlogue, X. Ma, B. Peterson

Diagnostic Radiology 121, Diagnostic Radiology Clerkship. The four-week clerkship introduces the student to the basic principles of all forms of radiologic interpretation. Each day the students rotate through a section of the department of diagnostic imaging, including gastrointestinal, genitourinary, chest, musculoskeletal, neuroradiology, pediatrics, computed tomography, magnetic resonance, nuclear medicine, ultrasound, vascular and interventional radiology, and emergency radiology. Five days of elective time may be spent in a subspecialty area of the students' choice. In addition to participating in the daily film reading with residents and staff, the students receive an introduction to the role of that section in the diagnosis and management of disease. Self-teaching materials are available in the radiology library. The students attend the department resident conferences twice daily as well as specific student seminars. Clerkships are offered at Yale-New Haven Hospital. Prerequisites: None. Full-time: No on-call responsibilities. Limited to six students every four weeks. J. Abrahams, A. Haims, and staff.

Diagnostic Radiology 134, Clinical Internship in Vascular and Interventional Radiology. This clerkship is intended to serve as an introduction to catheter directed angiography and radiologic guided therapies. This includes transluminal revascularization (e.g. balloon angioplasty) in the peripheral, renal, and visceral circulations, embolization of vascular abnormalities, vena cava filter placement, and a variety of other vascular interventions. Exposure to percutaneous management of biliary and renal disease includes external drainage procedures, internal stents, and biopsies. Percutaneous catheter treatment of fluid collections is also performed. Students participate in the interventional radiology admitting service including interviewing patients in an outpatient clinic. Electives are tailored to three to six weeks. Hours to be arranged. Limited to one student, three to six weeks throughout the year. J. Pollak and staff.

Diagnostic Radiology 135, Clinical Clerkship in Pediatric Diagnostic Imaging.

Introduction to the clinical care of infants, children, and adolescents through the use of integrated diagnostic imaging. Students participate through review of imaging studies with fellows, residents, and attendings, observation of fluoroscopic, ultrasound, computed tomography (CT), and MRI procedures, and attendance at daily clinical conferences. Students are encouraged to use the teaching file and also to add an interesting case. Elective periods of two to four weeks are possible, times to be arranged, limited to one student per period. C. Miller and staff.

Diagnostic Radiology 137, Clinical Clerkship in Neuroradiology.

This rotation is designed as an introduction to neuroradiology. The student becomes an integral part of the neuroradiology team which consists of the resident, fellow, and attending physician. A number of teaching conferences are offered including a daily case review session. The student is exposed to the various subsections of neuroradiology including neuro CT, neuro MR, and neuro special procedures, e.g., angiography, myelography, CT biopsy, interventional angiography. J. Abrahams, G. Sze, and staff.

EPIDEMIOLOGY AND PUBLIC HEALTH

Office: LEPH 210, 785.2867

Professors

W. A. Andiman (*Pediatrics*), R. S. Baltimore (*Pediatrics*), M. Barry (*Internal Medicine*), F. L. Black (*Emeritus*), M. B. Bracken, L. M. Brass (*Neurology*), K. D. Brownell (*Psychology*), J. Casals-Ariet (*Emeritus*), M. Cullen (*Internal Medicine*), V. T. DeVita, Jr. (*Internal Medicine*), A. B. DuBois, E. Fikrig, D. Fish, S. Fleck (*Psychiatry; Emeritus*), G. H. Friedland (*Internal Medicine*), W. J. Hierholzer (*Internal Medicine; Emeritus*), T. R. Holford (*Director of Graduate Studies*), R. I. Horwitz (*Internal Medicine*), J. F. Jekel (*Emeritus*), K. A. Joiner (*Internal Medicine*), E. Kaplan (*Management*), S. V. Kasl, D. A. Kessler (*Pediatrics*), I. S. Kickbusch, W. L. Kissick (*Visiting*), H. M. Krumholz (*Internal Medicine*), B. P. Leaderer, W. Lesslauer (*Visiting; Adjunct*), L. S. Levin (*Emeritus*), R. W. Makuch, L. E. Marks, R. McCorkle (*Nursing*), D. McMahan-Pratt, K. Merikangas, M. H. Merson (*Chair*), I. G. Miller (*Pediatrics*), A. Novick (*Ecology/Evolutionary Biology*), A. M. Ostfeld (*Emeritus*), C. L. Patton, P. N. Peduzzi (*Adjunct*), W. E. Reifsnnyder (*Forestry; Emeritus*), H. A. Risch, R. A. Rosenheck (*Psychiatry*), D. S. Rowe (*Pediatrics; Emeritus*), N. H. Ruddle, P. Salovey (*Psychology*), E. D. Shapiro (*Pediatrics*), R. E. Shope (*Emeritus*), G. A. Silver (*Emeritus*), J. C. Sinclair (*Adjunct*), J. T. Stitt, J. A. J. Stolwijk (*Emeritus*), M. E. Tinetti (*Internal Medicine*), C. White (*Emeritus*), D. Zelterman

Associate Professors

S. Aksoy, E. H. Bradley, M. Cappello (*Pediatrics*), E. B. Claus, L. C. Degutis (*Surgery*), L. M. Dembry (*Internal Medicine*), L. DiPietro, N. E. Groce, P. Hartigan (*Adjunct*), R. Heimer, S. M. Horwitz, J. Ickovics, K. S. Kronebusch, G. W. Mack, S. T. Mayne, P. A. Nadkarni (*Anesthesiology*), M. K. Olson, A. D. Paltiel, H. G. Prigerson (*Psychiatry*), M. B. Russi (*Internal Medicine*), M. J. Schlesinger, J. L. Sindelar, G. H. Tignor (*Emeritus*), W. D. White, H. Zhang, H. Zhao, L. Zheng, T. Zheng

Assistant Professors

L. Alexander, S. H. Busch, K. Buse, M. Desai (*Psychiatry*), R. A. Desai (*Psychiatry*), J. Dubin, B. Emir (*Adjunct*), M. L. Irwin, A. Iwasaki, B. Jones, R. J. Katz (*Internal Medicine*), K. Khoshnood, D. L. Leslie (*Psychiatry*), B. Levy, J. H. Lichtman, H. Lin, L. M. Nicolai, A. N. Ortega, M. M. Pettigrew, N. Stachenfeld, C. Tschudi (*Internal Medicine*), H. Wang, H. Yu

Senior Research Scientists

M. Y. K. Armstrong (*Emeritus*), D. V. Cicchetti, J. S. Douglas, G. S. Fisch

Research Scientists

D. I. Baker, K. D. Belanger, B. Cartmel, L. E. Munstermann

Associate Research Scientists

N. Abdala, K. M. B. Balestracci, L. Beati, K. M. Blankenship, M. Bobulinski, M. Briggs-Gowan, M. Colmenares, T. A. Falba, W. T. Gallo, J. Gent, L. Grau, R. Gueorguieva, S. M. Kar, C. Luna, S. Mitchell, T. A. Olmstead, P. Rosenberger, N. Sun, R. Sundaram, E. Triche, M. Ulicickas-Yood

Research Affiliates

T. H. G. Aitken, J. F. Anderson, M. Berwick, D. J. Cunningham, V. H. Hodgkinson, M. P. Kumar, L. A. Magnarelli, E. M. Opton, J. Robison, H. Swede, R. B. Tower, L. V. Vaccarino

Clinical Professors

M. G. Curnen, J. C. Niederman

Associate Clinical Professors

J. B. Borak (*Internal Medicine*), W. B. Crede (*Internal Medicine*), D. L. Katz (*Director of Medical Studies*), W. L. Krinsky

Assistant Clinical Professors

M. L. Cartter, R. V. Durvasula, J. L. Hadler, C. Scott (*Pediatrics*)

Postdoctoral Fellows

Y. Ariei, A. Ashkenazi, M. Baranova, E. Bogoslovskaya, C. Cheatham, J. Doughty, N. Duchovny, J. Endross, E. Gallego, P. Guirtchenko, D. Gura, Z. Hao, J. Hellwig, Y. Hu, Y.-I. Kamijo, A. Kozlov, T. Krasnoselskikh, K. Lee, J. Mailloux, S. Martin, Z. Matebeni, N. Mawar, S. Milan, D. Nayduch, H. Ngo, A. Nienaber, E. Odgaard, D. Pan, S. Plesset, D. Roux, A. Sato, B. Seck, A. Sedrakyan, S. Smirnova, N. Smith, H. Soler, N. Tarakeshwar, Y. Tolstov, J. Tsao, A. Tulupvey, H. Yang, X. Zhao

Postdoctoral Associates

R. Barbour, B. Donji, Z. Guan, J. Guo, K. Hanincova, Y. Huang, S. Kanzok, A. Oliver, P. Pennington, J. Shi, S. Usmani, R. Van Strien, Y. Ye, X. Ying, H. Zhu, G. Zou

Lecturers

S. S. Addiss, R. Aldersdale, S. Allegretto, E. P. Anderson, T. G. Andreadis, S. G. Austin, I. M. Birnbaum, F. L. Black, A. L. Boissevain, E. A. Bortnichak, A. Brown, D. Bruce, P. F. Canny, G. L. Capozzalo, M. T. Cerqueira, P. A. Charpentier, K. H. Clark, S. Compton, J. Culhane, D. K. Diers (*Nursing*), H. G. Dove, R. Dubrow, J. D. Dunn, A.-M. Foltz, E. J. Gandsman, S. G. Geballe, G. L. Ginsberg, K. Gondek, C. H. Grantham-Millman, B. H. Gray, M. K. Gusmano, K. Hartwig, N. Hirschhorn, D. Humphries, J. F. Jekel, B. Jennings, R. V. Katz, S. L. Katz, B. D. Kerker, R. A. Lavelly, K. Lee, M. A. Lee, L. S. Levin, J. T. Lynch, R. Marcus, E. W. Mood, D. E. Morse, L. M. Mueller, J. M. Mullen, J. G. Payne, D. Pendrys, W. P. Quinn, T. Rabatsky-Ehr, D. T. Richardson, M. V. Roberto, B. Schachtel, A. N. Sofair (*Internal Medicine*), S. Spangler, J. A. Sparer (*Internal Medicine*), D. Stevens, J. A. J. Stolwijk, M. Stowe, W. J. Thomas, P. H. Van Ness, J. A. Wasserman, C. White, K. Yonkers (*Psychiatry*), J. A. Zaccagnino, E. Ziglio

The Department of Epidemiology and Public Health offers a wide variety of courses, across several divisions. Many of these are also available for medical student enrollment. The course catalogue and registration procedures may be obtained by contacting the EPH Registrar's Office.

GENETICS

Office: SHM 1310, 785.2649

Professors

E. A. Adelberg (*Emeritus*), N. Berliner (*Internal Medicine*), D. Brash (*Therapeutic Radiology*), W. R. Breg, Jr. (*Emeritus*), L. Cooley, D. DiMaio, J. M. Eisenstadt (*Emeritus*), B. G. Forget (*Internal Medicine*), P. Glazer (*Therapeutic Radiology*), A. Horwich, P. B. Kavathas (*Laboratory Medicine*), K. K. Kidd, R. P. Lifton (*Chair*), M. J. Mahoney, C. M. Radding, G. S. Roeder (*Molecular, Cellular, and Developmental Biology*), L. Rosenberg (*Adjunct*), M. R. Seashore (*Director of Medical Studies*), C. W. Slayman, K. Tanaka (*Emeritus*), P. Tattersall (*Laboratory Medicine*), D. C. Ward, S. M. Weissman, T. Yang-Feng (*Adjunct*)

Associate Professors

A. Bale, S. Baserga (*Molecular Biophysics and Biochemistry*), B. R. Pober (*Director, Postdoctoral Studies*), M. Qumsiyeh, S. Somlo (*Internal Medicine*), M. J. Stern (*Director of Graduate Studies*), H. Sun, J. Sweasy (*Therapeutic Radiology*), T. Xu, H. Zhang, H. Zhao (*Epidemiology and Public Health*)

Assistant Professors

C. Garganta, V. Reinke, K. White

Senior Research Scientist

P. J. Flory

Research Scientists

T. Ashley, W. Fenton, E. I. Golub, J. Kidd, J. M. McGrath (*Comparative Medicine*), A. Pakstis

Associate Research Scientists

B. Bi, G. Farr, E. Goodwin, H. Huang, L. Jones, D.-M. Li, Z. Lian, Y. Lu, M. Mahajan, E. Matloff, M. Miranda, Y. Nakayama, D. Nguyen, M. Palmatier, V. Petrov, R. Poddar, P. Rabinovich, H. Sun, A. Szekely, Y. Yasukochi, X. Yu, J.-Y. Zheng, X. Zhong

Postdoctoral Fellows

L. Brailey, L. Freeman-Cook, M. Ghanim, Y. Kluger, J. D. Lambert, P. Li, J. Liao, T. Morgan, L. Sun, X. Yang, H. Zhang

Postdoctoral Associates

G. Boyapty, L. Boyden, H. Huang, A. Hudson, N. Koya, T.-R. Li, C. Liao, Y. Luo, B. Mason, S. Mazzalupo, N. Mukherjee, A.-H. Nasr, H. Oota, P. Paschou, H. Qin, J. Radhakrishnan, H. Shao, E.-H. Shim, S. Wang, X. Yang, Z.-J. Ye, Y. Yilmaz

Genetics 500, Principles of Human Genetics. A course taught jointly for graduate students and medical students, covering current knowledge in human genetics as applied to the genetic foundations of health and disease. A. Bale.

Genetics 520b, Scientific Integrity in Biomedical Research. Numerous issues that bear upon responsible research conduct are discussed, including record keeping, availability of research materials, student/mentor responsibilities, reproducibility of results, confidentiality, conflict of interest, authorship, and fraudulent behavior. Required for all first- and second-year students in Genetics and all postdoctoral fellows and associates. S. Baserga.

Genetics 620, Topics in Medical Genetics. This course covers a variety of topics in the fields of biochemical genetics, DNA diagnostics, cytogenetics, prenatal genetics, and general clinical genetics and is of particular interest to graduate students, medical students, postdoctoral clinical fellows, and laboratory fellows who wish to broaden their background in the basic principles as well as the clinical applicability of medical genetics. Prerequisite: introductory course in human genetics (e.g., Genetics 500) or permission of the instructor. B. Pober.

Genetics 625a/MB&B 625a/MCDB 625a, Basic Concepts of Genetic Analysis. The universal principles of genetic analysis in eukaryotes are discussed in lectures. Students also read a small selection of primary papers illustrating the very best of genetic analysis and dissect them in detail in the discussion sections. While other Yale graduate molecular genetics courses emphasize molecular biology, this course focuses on the concepts and logic underlying modern genetic analysis. T. Xu, M. Koelle, R. Lifton, G. S. Roeder, M. Stern.

Genetics 642a/EMD 642a/MB&B 642a/MBIO 642a/MCDB 642a, Roles of Microorganisms in the Living World. This topical course explores the biology of microorganisms. Emphasis is placed upon mechanisms underlying microbial adaptations and how they influence biological systems. L. N. Ornston, D. Bessen, D. DiMaio, D. McMahon-Pratt, C. Patton, P. Tattersall.

Genetics 675a,b, Graduate Student Seminar. This course covers a variety of topics in molecular, cellular, developmental, and population genetics. Students gain experience in preparing and delivering seminars and in discussing presentations by other students. Required for all first- and second-year students in Genetics. J. Sweasy (in charge) and Genetics faculty.

Genetics 705a/MB&B 705a, Molecular Genetics of Prokaryotes. Molecular aspects of the storage, replication, evolution, and expression of genetic material in prokaryotes. Prerequisites: previous or concurrent introductory courses in genetics and biochemistry. N. Grindley, C. Radding, J. Sweasy.

Genetics 734a/MBIO 734a, Molecular Biology of Animal Viruses. Lecture course with emphasis on mechanisms of viral replication, oncogenic transformation, and virus-host cell interactions. D. DiMaio, P. Tattersall.

Genetics 743b/MB&B 743b, Molecular Genetics of Eukaryotes. Selected topics in regulation of gene expression, genome structure and evolution, signal transduction, and cellular physiology, development, and carcinogenesis. Prerequisite: biochemistry or permission of the instructor. A. Koleske, M. Hochstrasser.

Genetics 749a/MB&B 749a, Medical Impact of Basic Science. Consideration of examples of recent discoveries in basic science that have elucidated the molecular origins of disease or that have suggested new therapies for disease. Emphasis is placed on the fundamental principles on which these advances rely. Reading is from the primary scientific and medical literature, with emphasis on developing the ability to read this literature critically. Aimed at seniors and first-year graduate students. Prerequisite: rigorous

undergraduate course in molecular biology or permission of the instructor. J. Steitz, A. Miranker, M. Hochstrasser.

Genetics 777b/MCDB 677b, Mechanisms of Development. This is an advanced course on mechanisms of animal development focusing on the genetic specification of cell organization and identity during embryogenesis and somatic differentiation. The use of evolutionarily conserved signaling pathways to carry out developmental decisions in a range of animals is highlighted. Course work includes student presentations and critical analysis of primary literature. L. Cooley, V. Reinke, K. White, X.-W. Deng, F. Slack.

[Genetics 810b, Human Molecular Genetics. This course focuses on molecular genetics of single gene and multifactorial human traits. About one-half of the lectures cover strategies and methodologies for human genetics research as well as resources developed by the Human Genome Project. The remainder of the course gives examples of applications of molecular genetics in medicine and industry. Seminars devoted to reviews of primary literature and workshops lead to rigorous treatment of a limited set of topics and emphasis on a “how to” approach. This course is intended for students with a good background in genetics and a strong interest in research. A. Bale, C. Garganta. Not offered in 2002–2003.]

Genetics 840a,b, Medical Genetics. Clinic Rotation. Offers opportunity to participate in the Genetic Consultation Clinic, genetic rounds, consultation rounds, and genetic analysis of clinical diagnostic problems. By arrangement with instructor. M. R. Seashore, B. Pober.

Genetics 900a/b, Introduction to Research for First-Year Students. A laboratory rotation course designed to give first-year students the opportunity to do research in several different laboratories and to learn a variety of methods now being used in genetic biochemical studies. Director of graduate studies and staff.

Genetics 920a/b, Reading Course. A directed reading period designed for second-year students preparing for the qualifying examination. Director of graduate studies and staff.

Genetics 921a/b, Reading Course in Genetics and Molecular Biology. Directed reading course on genetics and molecular biology. Term paper required. By permission of director of graduate studies and arrangement with faculty.

HISTORY OF MEDICINE

Office: SHM L132, 785.4338

Professors

F. L. Holmes, D. Kevles (*History*), D. F. Musto (*Child Study Center*), W. Summers (*Therapeutic Radiology*), J. H. Warner (*Chair*)

Associate Professor

S. E. Lederer

Assistant Professor

N. Rogers (*Women's and Gender Studies*)

Senior Research Scholar

J. S. Fruton

Research Affiliates

T. Appel, M. Craven, G. Robinson

Yale College and Graduate School courses open to medical students:

History of Science and Medicine 177b/677b/History 177b, Biology and Society in the Twentieth Century. An exploration of issues in the understanding, engineering, and control of life. Focus on the history of genetics, molecular biology, and biotechnology and their interaction with politics, economics, law, and culture, mainly in the United States. D. Kevles.

History of Science and Medicine 241b/679b/History 241b, The Scientific Revolution. A survey of the natural science that developed between the Age of Discovery and the French Revolution. The course covers the background in Aristotelian philosophy; the shift from geocentric to heliocentric astronomy; the replacement of scholastic natural philosophy by the ideas of Galileo, Descartes, and Newton; the roles of the Catholic and Protestant churches, universities, and learned academies; the invention and improvement of scientific instruments; and the science of the Enlightenment. J. Heilbron.

History of Science and Medicine 205a/American Studies 323a/History 175a, Alcohol and Other Drugs in American Culture. The interrelation of alcohol and other drugs since the establishment of the nation. Consideration of scientific, religious, legal, literary, gender, and minority aspects. D. Musto.

History of Science and Medicine 215b/History 240b, Public Health in America, 1793–2000. A survey of public health in America from the yellow fever epidemic of 1793 to AIDS and breast cancer activism at the end of the past century. Focusing on medicine and the state, topics include quarantines, medical and social welfare failures and successes, the experiences of healers and patients, and organized medicine and its critics. N. Rogers.

History of Science and Medicine 321b/631b/History 233b, The Cultures of Western Medicine: A Historical Introduction. A survey of medical thought, practice, institutions, and practitioners from classical antiquity through the present. Changing concepts of health and disease in Europe and America explored in their social, cultural, economic, scientific, technological, and ethical contexts. J. Warner.

[History of Science and Medicine 322b/622b/History 239b, Introduction to the History of the Life Sciences. A study of landmark investigations in the life sciences, from antiquity to the mid-twentieth century. Not offered in 2002–2003.]

[History of Science and Medicine 335b/645b/History 178b, Medical Ethics in America since 1847. Not offered in 2002–2003.]

History of Science and Medicine 420a/620a/Women's and Gender Studies 332a, Gender, Science, and Sexuality. Examination of the history of the scientific study of sexuality. Primary and secondary sources covering the nineteenth and twentieth centuries are used in considering the anatomic, taxonomic, psychoanalytic, sociobiological, physiological, and molecular approaches to the study of sexuality and sexual orientation. Special attention paid to how these studies both reflect and construct gender ideology. W. Summers.

[History of Science and Medicine 433b/637b/History 441b, Race and Medicine in America, 1800–2000. An examination of the history of race and medicine in the United States, primarily but not exclusively focused on African Americans' encounters with the health care system. Topics include slavery and health; doctors, immigrants, and epidemics; the Tuskegee syphilis study and the use of minorities as research subjects; and race and genetic disease. Not offered in 2002–2003.]

History of Science and Medicine 443a/643a/History 440a, Nuclear America. A history of the nuclear enterprise from its pre-World War II origins to recent times, covering its military and civilian uses and its impact on scientific research, health and the environment, regional economies, and American politics and culture. D. Kevles.

[History of Science and Medicine 444a/642a/History 444a, Plagues, Old and New. Through contemporary accounts of older as well as modern epidemics, an attempt to understand the historical setting in which a given epidemic disease occurred, the social and medical responses to it, its demographic and long-term consequences, and the possible relevance of events connected with one epidemic to those of subsequent epidemics. Critical examination of the notion of major epidemics as one of the key contingencies of history. Not offered in 2002–2003.]

[History of Science and Medicine 445a/625a/History 438a/Women's and Gender Studies 435a, Women and Medicine in America from the Colonial Era to the Present. American women from the colonial era to the present as midwives, patients, healers, reformers, revolutionaries, innovators, and entrepreneurs. Ways that women have shaped American health care and medical research. Not offered in 2002–2003.]

History of Science and Medicine 446b/History 445b/Women's and Gender Studies 436b, The Women's Health Movement and American Society in the 1970s. A critical examination of the strengths, weaknesses, and legacy of the American women's health movement of the 1970s, placed in its social and political context. Topics include struggles to legalize birth control and abortion, establishment of alternative health and birthing centers, and links between feminist health activism and the civil rights and gay rights movements. N. Rogers.

History of Science and Medicine 447a/680a/History 482a, History of Chinese Science. A study of the major themes in Chinese scientific thinking from antiquity to the twentieth century. Emphasis on non-Western concepts of nature and the development of science in China, East-West scientific exchanges, and China's role in modern science. W. Summers.

History of Science and Medicine 601a and 602b/History 930a and 931b, Introduction to the History of Medicine and Science. A core seminar required for first-

year graduate students in the history of science and history of medicine. The seminar, which extends through the full academic year, is a foundational introduction to the history and historiography of the history of medicine and public health, the history of the physical sciences, the history of chemistry, and the history of the life sciences. S. Lederer, J. Warner (fall); J. Heilbron, F. Holmes (spring).

[History of Science and Medicine 711b, Experimentation in the History of the Life Sciences. Not offered in 2002–2003.]

[History of Science and Medicine 712/American Studies 874/History 936, The Social and Cultural History of American Medicine. Reading and discussion of recent scholarly literature with special attention to the medical marketplace, gender, and alterity in constructions of professionalism, performance, and identity in medical cultures. Not offered in 2002–2003.]

[History of Science and Medicine 713/American Studies 872/History 794, The History of Disease and Public Health in America. Reading and discussion of recent scholarly literature on the social and cultural history of disease and public health in the United States. Topics include the role of ethnicity, gender, class, region, and religion in the construction and experience of illness; state and individual responsibility for health; and representations of disease and public health in educational, propaganda, and feature films. Not offered in 2002–2003.]

History of Science and Medicine 714b/History 933b, Science and Technology in the Twentieth Century. An examination of the development of the scientific and technological enterprise in Europe and the United States, including its major intellectual achievements, academic and industrial institutions, relationship to war and the state, and standing in general culture. Among topics that might be considered are atomic, nuclear, and particle physics, genetics and molecular biology, microelectronics and computers. D. Kevles.

History of Science and Medicine 718, Performance, Identity, and the Making of American Medicine. An exploration of the shaping of American medical culture, especially during the late nineteenth and early twentieth centuries, focusing on the ways that healers' identities were constructed, perceived, and contested. Themes include conceptions of orthodoxy and alterity; the relationship between European and American notions of the moral, social, political, technical, and epistemological grounding of professional identity; struggles over the place and meaning of "science" in the healer's identity; and medicine and modernity. Case studies examine the fashioning of identities for the medical marketplace and more private constructions of self, with attention to gender, ethnicity, race, religion, and region. Readings engage the recent historiography of the field and explore self-representations of practitioners in primary texts ranging from diaries to prescriptive literature, as well as popular depictions in novels and visual media. J. Warner.

History of Science and Medicine 723, Making the Modern Body. An examination of the ways in which the human body has become both a site for medical and surgical practices and a source of tissues and tools for therapeutic purposes in twentieth-century America. Topics include the scientific developments and social and cultural implications of such technologies as organ transplantation, plastic surgery, and in vitro fertilization, with attention to gender, race, religion, and cultural representations of the body—male and female, living and dead, animal and human. S. Lederer.

[History of Science and Medicine 724, Methods and Literature in the History of Science and Medicine. Not offered in 2002–2003.]

History of Science and Medicine 725a/History 942a, History of Disease and Public Health in Western Societies. An exploration of recent approaches to understanding the history of disease and public health in Western societies. Topics in this reading seminar, which focuses on the nineteenth and twentieth centuries, include bodies and cities; contested definitions of disease, contagion, and pollution; illness, healing, and popular culture; medicine and empire; health care, the state, and charity; health education; and industrial disease and health policy. N. Rogers.

History of Science and Medicine 785b/History 785b, Science and Technology in American Society. The growth of science and technology in the United States and their integration into the overall national narrative. Topics include the American scientific community and its roles in exploration, agriculture, industry, national defense, religion, culture, and social change. D. Kevles.

[**History of Science and Medicine 912a, Reading Seminar in the History of Disease and Public Health in America.** Not offered in 2002–2003.]

[**History of Science and Medicine 913b, Reading Seminar in the History of the Life Sciences.** Not offered in 2002–2003.]

History of Science and Medicine 914 a or b, Research Tutorial I. By arrangement with faculty.

History of Science and Medicine 915 a or b, Research Tutorial II. By arrangement with faculty.

[**History of Science and Medicine 919b, Research Seminar in the History of Medicine and Science.** An exploration of research methods and the craft of writing in the history of medicine and science. Participants are expected to produce full-length research papers, and these individual research programs are the central focus of the group's discussions. Not offered in 2002–2003.]

History of Science and Medicine 920a or b, Independent Reading. By arrangement with faculty.

History of Science and Medicine 930a or b, Independent Research. By arrangement with faculty.

In addition to formal course offerings and tutorials offered in the School of Medicine, Yale College, and the Graduate School, section activities in the History of Medicine are supplemented by a number of related historical medical programs. During the second term the Department of Surgery sponsors the annual Samuel Clark Harvey Memorial Lecture. The Nathan Smith Club, which annually awards the John F. Fulton Memorial Award, is composed of medical students interested in medical history who assemble monthly in the homes of various faculty. The Beaumont Medical Club, founded at Yale in 1920, sponsors six lectures in the History of Medicine during the academic year and annually selects a Beaumont Lecturer and a George Rosen Lecturer in the History of Medicine. Section faculty are available for M.D. thesis supervision.

The section offers a Ph.D. program in the History of Medicine and the Life Sciences. In addition it offers an M.A. program designed particularly for those who plan to combine teaching or scholarship in these fields with a professional career in medicine or the life sciences. For further information concerning admissions and the program itself, consult the Graduate School bulletin.

IMMUNOBIOLOGY

Office: 464 Congress Avenue, Room 276B, 785.3857

Professors

J. Bender (*Internal Medicine*), A. Bothwell, K. Bottomly, J. Craft (*Internal Medicine*), P. Cresswell, R. Flavell (*Chair*), S. Ghosh, C. Janeway, Jr., P. Kavathas (*Laboratory Medicine*), I. Mellman (*Cell Biology*), J. Pober (*Pathology*), N. Ruddle (*Epidemiology and Public Health*), D. Schatz, R. Tigelaar (*Dermatology*)

Associate Professors

F. Lakkis (*Internal Medicine*), M. Shlomchik (*Laboratory Medicine*)

Assistant Professor

R. Medzhitov

Associate Research Scientists

J. Blander, K.-C. Chin, E. Eynon, H. Foellmer, O. Henegariu, J. Huleatt, I. Kawikova, E. Kopp, M. May, W. Mehal (*Internal Medicine*), D. Pflugh, C. Viret, Z. Zhang

Research Affiliate

A. Haberman

Immunobiology 100a, Immunology for Students of Medicine. Immunology and its application to clinical situations. 12 hours lecture, 8 hours tutorials.

Immunobiology 530a/MCDB 530a, Biology of the Immune System. The development of the immune system. Cellular and molecular mechanisms of immune recognition. Effector responses against pathogens; autoimmunity. K. Bottomly and staff.

Immunobiology 531b, Advanced Immunology. The historical development and central paradigms of key areas in immunology. The course attempts to develop a clear understanding of how these paradigms were established experimentally. Landmark studies are discussed to determine how the conclusions were obtained and why they were important at the time they were done. Lecture and discussion format; readings of primary research papers and review articles. Prerequisite: Immunobiology 530a or equivalent. Enrollment limited to 15. R. Medzhitov and staff.

Immunobiology 537a, Advanced Immunology Seminar: Lymphocyte Development. This seminar course considers the molecular and cellular aspects of the development of B and T lymphocytes. Topics covered include lineage commitment and cell fate determination, transcription, signaling, gene arrangement, and cellular selection and homeostasis. The course emphasizes reading of the primary literature, and important components of student evaluation include class participation and a term paper written in the form of an NIH grant. D. Schatz, C. Janeway, R. Tigelaar.

Immunobiology 600a, Introduction to Research. Introduction to the research interests of the faculty. Required for all first-year Immunology Track students. D. Schatz and staff.

[Immunobiology 601b, Fundamentals of Research. Seminar discussing the proper conduct of research. Required for first-year Immunobiology Track and second-year Immunobiology students. P. Cresswell and staff. Not offered in 2002–2003.]

INTERNAL MEDICINE

Office: FMB 102, 785.2697

Professors

J. Amatruda (*Adjunct*), V. A. T. Andriole, P. S. Aronson, P. W. Askenase, E. Atkins (*Emeritus*), C. E. Atterbury (*Emeritus*), M. Barry, W. P. Batsford, J. R. Bender, N. Berliner, F. J. Bia, M. J. Bia, H. J. Binder, P. K. Bondy (*Emeritus*), J. L. Boyer, A. E. Broadus, R. Bucala, G. N. Burrow (*Emeritus*), H. S. Cabin, H. Chase, E. Chu, M. W. Cleman, L. S. Cohen, D. L. Coleman, H. O. Conn (*Emeritus*), L. M. Cooney, Jr., D. L. Cooper, J. E. Craft, M. R. Cullen, V. DeVita, Jr., R. M. Donaldson, Jr. (*Emeritus*), T. P. Duffy, A. Ebbert, Jr. (*Emeritus*), S. Edberg (*Laboratory Medicine*), J. A. Elias, E. Fikrig, R. L. Fisher, B. G. Forget, J. N. Forrest, Jr., G. H. Friedland, G. Garcia-Tsao, J. B. L. Gee (*Emeritus*), R. H. Gifford (*Emeritus*), J. A. Goffinet (*Emeritus*), F. S. Gorelick, R. J. Groszmann, J. P. Hayslett, S. Hebert (*Cellular and Molecular Physiology*), W. J. Hierholzer (*Emeritus*), N. J. Holbrook, R. I. Horwitz (*Chair*), S. K. Inouye, K. L. Insogna, C. C. Jaffe, K. A. Joiner, F. S. Kantor, C. R. Kapadia, J. P. Kassirer (*Adjunct*), D. A. Kessler (*Pediatrics*), H. M. Krumholz, R. J. Levine, H. Levitin (*Emeritus*), R. Lifton (*Genetics*), R. L. Mahnensmith, S. E. Malawista, J. C. Marsh (*Emeritus*), R. A. Matthay, P. McPhedran (*Laboratory Medicine*), M. H. Nathanson, P. G. O'Connor, R. J. Papac, P. N. Peduzzi (*Epidemiology and Public Health; Adjunct*), V. J. Quagliarello, J. M. Rapoport, A. Rastegar, F. F. Richards (*Emeritus*), S. H. Rosenbaum (*Anesthesiology*), R. S. Sherwin, G. I. Shulman, N. J. Siegel (*Pediatrics*), B. R. Smith (*Laboratory Medicine*), H. M. Spiro (*Emeritus*), M. E. Tinetti, M. Traube, E. Ullu, F. Wackers (*Diagnostic Radiology*), S. Weissman (*Genetics*), F. S. Wright, L. H. Young, B. L. Zaret

Associate Professors

A. K. Abu-Alfa, F. Altice, J. A. Arrighi, L. Bockenstedt, S. T. Bogardus, J. J. Brennan, B. A. Burtness, C. Canessa (*Cellular and Molecular Physiology*), L. Cantley, K. L. Cohen, L. E. Cohn, J. P. Concato, S. T. Crowley, L. M. Dembry, G. V. Desir, M. P. DiGiovanna, M. A. Drickamer, J. Evans, D. G. Federman, D. A. Fiellin, T. R. Fried, R. S. Galvin (*Adjunct*), T. M. Gill, M. Green, P. Hebert, J. B. Henrich, E. S. Holmboe, J. S. Hughes, S. J. Huot, S. E. Inzucchi, S. D. Katz, W. N. Kernan, Jr., J. Lacy, F. Lakkis, F. A. Lee, M. Mamula, R. A. Marottoli, C. A. McPherson, P. K. Mistry, V. Mohsenin, J. Murren, P. Noble, M. A. Perazella, W. M. Philbrick, G. Pizzorno, D. D. Proctor, M. J. Radford, C. A. Redlich, M. C. Reid, R. Reilly, M. Remetz, M. O. Rigsby, H. Rinder (*Laboratory Medicine*), C. Rochester, L. E. Rosenfeld, D. M. Rothstein, M. Russi, J. F. Setaro, M. D. Siegel, A. J. Sinusas, S. Somlo, R. Soufer, L. Tanoue, M. Topazian, B. Wong, J. Wysolmerski

Assistant Professors

B. G. Abbott, N. Angoff, E. Bahceci, T. J. Balczak, L. Bell (*Adjunct*), G. K. Berland, D. G. Bermudes (*Adjunct*), D. Biemesderfer, M. S. Blum, J. S. Bogan, D. Bravata, R. Brienza, K. Brown, H. Cain, Y.-T. Chen (*Adjunct*), G. G. Chung, G. L. Chupp, J. F.

Clancy, G. W. Cline, J. A. Dranoff, M. S. Ellman, M. H. Farrell, S. Fatenejad (*Adjunct*), J. M. Foody, R. Formica, L. Fraenkel, F. J. Giordano, D. R. Goldstein, C. P. Gross, B. Gulanski, S. G. Haskell, S. Hay, J. L. Hilbert Howard-Flanders, E. H. Holt, C. J. Howes, E. A. Jonas, I. Kang, S. S. Kashaf, R. Katz, B. I. Kazmierczak, C. S. Kim (*Pediatrics*), J. K. Kim, H. Kluger, M. J. Kozal, J. D. Kravetz, R. Krishnamurthy, S. Kummer, M. Larson, C. G. Lee, J. H. Lee, P. Lee, Y. Liu, F. M. Lobo, U. Masiukiewicz, K. McKenzie, R. L. McNamara, W. Z. Mehal, J. P. Moriarty, V. A. Morris, A. Nagar, V. Nakaar (*Adjunct*), V. Navarro (*Adjunct*), A. J. Peixoto, K. Petersen, S. Pfau, M. A. Pisani, P. Rabinowitz, A. B. Reisman, J. Ren (*Adjunct*), M. Rose, F. J. Roux, C. B. Ruser, K. Russell, R. Russell, M. M. Sadeghi, S. M. Schnittman (*Adjunct*), S. E. Seropian, A. C. Shaw, W. Shlomchik, A. N. Sofair, J. M. Stein, O. Taiwo, C. Tschudi, K. Wagner, H. A. Waskin (*Adjunct*), L. Wen, D. Wencker, M. S. Wilson, A. V. Wisniewski, Z. Yin, T. Zheng (*Immunology*), Z. Zhu

Instructors

H. R. Aslanian, B. C. Cambi, K. D. Carr, M. H. Chung, D. S. Geller, C. Gunderson, T. E. Kim, A. V. Longacre, K. A. Maynor, D. Psyrrri, N. C. Rabidou, J. A. Rosenbaum, T. S. Schreiber, A. Vaezy

Senior Research Scientists

R. R. Montgomery, V. M. Rajendran

Research Scientists

R. E. G. Hendler, A. Khanna-Gupta, C. J. Soroka, H. Velazquez, C. Viscoli

Associate Research Scientists

M. Bartkiewicz, A. A. Belperron, Y. Cai, D. Cao, S. Chapoval, M. Collinge, I. Coppens, Z. Dai, J. D. Dziura, P. Gaines, L. Geng, S. Goyal, P. Haynes, C. H. He, V. Kalb, S. A. Kale, R. J. Lampert, L. Leng, A. Li, X. Lin, J. Liu, Y. Lu, B. Ma, R. Mamillapalli, A. Mani, Y. Mao, M. T. McIntosh, S. Narasimhan, U. Pal, L. Rogozinski, T. T. Stedman, M. H. Stowe, B. Sun, R. B. Thomson, J. Wang, L. Wang, C. M. Wiedercht, S. Wongcharatrawee, S. Wormsley, J. Xu, J. Yan, J. Zhang, X. Zhang

Clinical Professors

J. Alexander, J. Belsky, J. M. Boyce, T. N. Byrne (*Neurology*), N. Dainiak, N. D. D'Esopo, J. W. Dobbins, L. R. Farber, F. O. Finkelstein, D. S. Fischer, M. H. Floch, L. Friedman, M. Gordon, E. D. Hendler, P. N. Herbert, P. B. Iannini, J. D. Kenney, A. S. Kliger, S. D. Kushlan, J. S. Loke, N. J. Marieb, M. Moser, S. Nair, R. T. Schoen, M. H. Schoenfeld, C. B. Sherter, H. L. Smits, S. B. Sulavik, R. J. Vender

Associate Clinical Professors

J. R. Anthony, S. A. Atlas, D. J. S. Beardsley (*Pediatrics*), M. Bender, O. J. Bizzozero, Jr., S. N. Bobrow, J. B. Borak, M. H. Brand, S. D. Brenner, M. Brodoff, G. K. Buller, B. V. Caldwell, E. Citkowitz, J. P. Cleary, S. A. Cohen, E. L. Cooney, D. L. Copen, W. B. Crede, G. M. Dillard, C. A. Disabatino, Jr., K. J. Dobuler, E. L. Etkind, R. Fearon, R. D. Ferranti, J. M. Fessel, B. Forman, J. D. Gaines, H. B. Garfinkel, J. J. Garsten, D. I.

Geisser, R. A. Gelfand, P. Genecin, T. J. Godar, R. S. Gordon, A. V. Granata, J. M. Grant, L. E. Grauer, T. P. Greco, R. G. Haddad, F. D. Haeseler, E. Hankin, G. J. Hutchinson, K. A. Hutchinson, R. M. Jarrett, S. A. Jerrett, D. M. Kaminsky, M. H. Kaplan, D. Katz (*Epidemiology and Public Health*), S. W. Kingsley, A. Kotch, S. J. Kra, M. J. Krauthamer, B. Lahiri, A. Lebowitz, R. A. Levine, A. L. Levy, H. D. Lewis, C. R. Libertin, E. Littman, W. B. Lundberg, Jr., R. W. Lyons, R. J. Mangi, C. A. Manthous, P. Marignani, A. M. Marino, E. M. Mazur, D. B. Melchinger, D. J. Miller, M. A. Miller, S. S. Milles, D. Moll, E. D. Moritz, S. J. Moses, S. N. Novack, P. B. Nussbaum, J. J. O'Connell, J. Perlotto, J. F. Pezzimenti, D. Podell, C. A. Polnitsky, J. A. Rankin, G. V. Reid, J. L. Renda, J. H. Revkin, I. M. Roberts, R. T. Rozett, J. R. Sabetta, M. Sadigh, M. H. Sangree, K. V. Schwartz, M. L. Schwartz, M. F. Simms, J. D. Smith, N. Spinelli, G. A. Spreccace, J. F. Sullivan, H. L. Taubin, M. J. Taylor, F. J. Troncale, W. F. Van Eck, S. M. Winter, P. S. Wiske, S. Wolfson, J. G. Wong, B. J. Wu

Assistant Clinical Professors

R. M. Aaronson, A. J. Accomando, R. Ahmadi, F. D. Alfano, C. A. Ames, D. Anderson, J. F. Andrews, C. W. Andrias, S. J. Angelo, E. Anhalt, C. A. Arnold, S. Aronin, E. Atlas, J. Banatoski, R. J. Barse, M. C. Bennick, C. A. Berken, L. Berman, R. D. Black, J. M. Blumberg, N. A. Bonheim, R. S. Borrus, H. M. Brett-Smith, L. Bridger, M. L. Brines, E. Y. Brown, C. M. Brunet, L. V. Buckley, J. Burdige-Concato, M. Burg, L. L. Burgo-Black, W. A. Camp (*Neurology*), J. P. Chandler, C. L. Cherney, D. M. Chess, J. Cho, S. Z. Chowdhury, J. J. Chuong, M. E. Chute, G. V. Clift, C. A. Clyne, G. M. Cohen, M. Cohen, W. Cohen, J. D. Cooper, R. B. Cooper, W. G. Covey, H. M. Crowe, J. A. Culpepper-Morgan, A. J. Cusano, L. J. Cuzzone, L. J. Davis, M. A. Demetrius, D. Desir, R. R. Diamond, V. C. Dicola, E. J. Dill, A. B. Douglass, A. Drakonakis, J. T. Dreznick, K. S. DuFour, D. W. Dunne, R. M. Echols, W. F. Eckhardt, Jr., D. J. Eilbott, T. D. Eisen, P. D. Ephraim, S. M. Epstein, J. J. Ernstoff, B. A. Feigenbaum, I. Feintzeig, M. K. Fikrig, S. M. Fink, W. Fischer, F. A. Flatow, J. F. Flint, A. H. Fortin, B. C. Fox, T. M. Fynan, J. E. Gage, V. Gassman, P. N. Geimer, J. Gerber, B. J. Gerstenhaber, A. E. Ghantous, V. E. Ghantous, H. C. Gift, E. M. Ginsberg, G. S. Gladstein, J. A. Godley, M. P. Golden, G. H. Gordon, S. M. Gordon-Dole, D. I. Grayer, J. A. Green, M. S. Grogan, T. K. Gupta, K. A. Haedicke, C. M. Hamill, J. H. Hansson, H. L. Haronian, J. K. Henchel, R. G. Hindes, C. F. Hollander, D. Hollister, K. J. Hunt, R. G. Huntley, Jr., D. G. Huskins, J. Iannarone, S. Jacoby, E. J. Jimenez, S. Jones, L. Jung, H. P. Kaplan, M. E. Katz, R. E. Kaufman, R. D. Kayne, K. Kefalos, A. M. Keller, M. S. King, R. Kinstlinger, H. Knight, C. R. Kramer, H. M. Kramer, M. L. Kraus, M. J. Kunkel, S. H. Kunkes, S. P. Lagarde, S. Lam, W. H. Landschulz, R. A. Lanzi, J. D. Lawrason, P. Lebowitz, R. E. Lebson, R. L. Leff, R. J. Lewis, A. T. Licciardello, H. M. Likier, M. Litchman, W. S. Long, J. A. Magaldi, A. R. Malina, M. E. Mann, E. P. Mardh, M. A. Marieb, S. Mark, R. Martell, B. P. Mathur, S. W. McCalley, R. J. McDonald, R. M. McLean, C. C. McNair, Jr., T. P. Meehan, J. A. Merritt, K. Michels-Ashwood, I. D. Mickenberg, S. P. Mickley, D. T. Miller, P. A. Monoson, R. F. Morrison, S. K. Mukherjee, R. J. Nardino, E. R. Nash, A. J. Natale, E.

A. Nolfo, J. W. O'Brien, J. P. O'Connell, J. A. Orell, F. C. Pannill, W. T. Panullo, L. A. Panzini, W. N. Pearson, B. Peck, W. Petit, D. Phanumas, P. F. Pierce, M. Poursmail, H. L. Quentzel, A. M. Radoff, A. M. Rashkow, M. A. Reale, C. R. Reed, N. J. Rennert, R. Renzi, B. A. Roach, D. Rocklin, D. Roer, P. R. Rogol, S. G. Rosen, A. Rosenberg, M. Rosman, K. D. Sabbath, K. L. Sacks, R. T. Sadock, S. Sandroni, S. Sandur, S. L. Saunders, A. Schaffner, E. S. Scherr, G. S. Schleiter, J. A. Schmierer, C. F. Scholhamer, H. M. Schwartz, M. Scully, C. B. Seelig, A. O. Seltzer, J. Seltzer, W. T. Sherman, J. M. Shi, W. Y. Shih, A. L. Silber, R. S. Silverman, M. L. Skluth, A. R. Skopek, L. F. Smaldone, M. J. Smith, H. B. Soletsky, J. M. Solomon, J. M. Sorensen, J. Soufer, P. A. Soukas, J. F. Sproviero, R. M. Stark, R. H. Stember, S. D. Stocker Giles, L. Sullivan, B. C. Swirsky, M. Sznol, M. B. Taylor, T. Taylor, J. H. Tenney, I. R. Ternouth, B. S. Thomas, J. Toksoy, J. Tomanelli, R. Torres, J. P. Tracey, D. H. Trock, T. K. Trow, K. J. Twohig, J. G. Uberti, J. S. Urbanetti, L. S. Vasquez, M. S. Villanueva, R. M. Vogel, F. X. Walsh, H. Ward, W. S. Warren, J. J. Weiner, D. A. Weinshel, P. I. Weisinger, S. B. Weissman, M. L. Whitcomb, K. P. White, R. E. White, L. M. Whitman, H. S. Wilkes, D. J. Williams, R. P. Wong, A. Wormser, K. H. Yang, A. Yee, G. Yuen, J. S. Zaretsky, S. W. Zarich, J. S. Zesk, F. R. Zwas

Clinical Instructors

M. A. Adlersberg, Y. Amoateng-Adjepong, L. F. Aoun-Barakaf, P. Asiedu, A. M. D. Assevero, A. Bedford, G. J. Bombassei, J. J. Bowen, J. A. Brier, J. A. Brunetti, M. Buitrago, A. W. Camp, V. A. Chang, R. M. Cohen, G. R. Corcoran, K. E. Dahl, M. L. Dam, M. R. Depman, S. Dey, D. L. Dobkin, B. R. Doolittle, K. A. Dressler, M. H. Driesman, S. A. D'Souza, C. M. Edelmann, S. L. Eisen, J. M. Elser, E. Fan, S. J. Farber, M. A. Feinberg, M. N. Fiengo, D. Fine, J. L. Fogle, R. S. Folman, L. A. Freed, L. S. Galante, A. B. Gorelick, P. C. Greco, E. M. Grubman, G. A. Guadagnoli, M. S. Guoth, W. B. Hale, K. A. Hamed, D. M. Helburn, G. Henry, J. G. Henry, D. G. Hill, F. Homayounrooz, J. S. Humphrey, U. Iloeje, B. A. Indeck, D. M. Intihar, K. A. Kaplove, M. A. Kazakoff, K. G. Kett, D. C. King, L. Knoll, W. M. Kobialka, L. H. Kwan, E. A. Laberee, P. G. Levinson, A. Liebling (*Pediatrics*), C. P. Loscalzo, P. S. Loving, M. A. Mankus, H. B. Mayer, T. J. McLarney, J. L. Meizlish, S. G. Menon, B. H. P. Mobo, Jr., P. Morales, J. I. Nadelmann, K. G. Nair, G. J. Napolitano, H. Nawaz, K. Nazer, K. K. Nelson, R. Nudel, B. R. Olson, S. P. O'Mahony, B. Ostroff, W. W. Paramanathan, T. E. Pellechi, A. E. Perrin, W. R. Petricone, A. S. Pumerantz, H. R. Pun, R. Rafi, H. H. Reinhart, C. R. Rethy, G. A. Reznikoff, L. Rome, S. D. Rossner, S. R. Rubenstein, M. C. Rubinstein, D. M. Sack, L. Sanders, J. R. Satchell-Jones, R. R. Savino, M. B. Schwartz, A. E. Selkin, J. F. Shea, M. L. Sher, K. S. Sinusas, B. Skudlarska, A. G. Sreih, M. A. Stehney, G. F. Tansino, P. G. Thomas, M. K. Tighe, J. E. Topal, M. C. Trager, G. E. Tratt, R. Umashanker, M. Vahey, C. Vaid, D. J. Van Rhijn, H. R. Vikram, M. D. Virata, G. Vitagliano, R. B. Wein, O. G. Weis, A. C. Wells, S. C. Widman, J. E. Williams, D. H. Witt, D. M. Wolfsohn, O. R. Wright, R. Yavari, J. Yu, C. S. Zalis, R. A. Zlotoff

Lecturers

B. J. Abelow, J. G. Carroll, Y.-C. Cheng (*Pharmacology*), M. Chomiak, E. Dan, J. M. DeJesus, D. D'Onofrio, E. Grant, C. Gyorgyey, S. Harris, S. G. Howe, V. F. Keller, L. C. Kerin, M. Knobf, J. A. Leach, D. C. Leake, S. S. Rathore, C. M. Russell, A. E. Scholhamer, J. A. Sparer, G. F. Spinner, M. E. Taafel, G. Vratsanos, Y. Wang, C. K. Wells

Internal Medicine 103, Core Medicine Clerkship. The Internal Medicine Clerkship comprises three one-month rotations: Hospital Medicine I, Hospital Medicine II, and Ambulatory Medicine. Students are assigned to complete these rotations in a specific order determined by the clerkship directors. During the Hospital Medicine clerkships, students serve as clinical clerks at participating hospitals. Students interview and examine patients, write admission and progress notes, and work with medical teams in the care of patients. Between Hospital Medicine I and Hospital Medicine II, students receive graduated responsibility for patient care. Conferences and teaching rounds are held daily. During the Ambulatory Medicine component of the clerkship, students complete a curriculum including general medicine practice, subspecialty practice, and classroom instruction. Clinical preceptors enable students to have an active part in patient evaluation and treatment commensurate with each student's experience and capability. Students interview and examine patients, develop differential diagnoses, present to preceptors, discuss treatment with patients, and write visit notes. At all clinical sites, students routinely telephone patients in follow-up. The overall course director is V. J. Quagliarello. The director for the ambulatory component is W. N. Kernan, Jr. Clinical precepting and classroom teaching involves over 100 physicians in the Department of Medicine.

Internal Medicine 104, Principles of Clinical Reasoning. The course objective is to help students learn the principles of clinical reasoning. These principles require an understanding of the type of clinical questions that are central to patient care; the source and quality of clinical data used to answer these questions; the methods (in design and analysis) employed in clinical research; the quantitative concepts central to clinical decision making; and the application of data derived from research, physician experience, and patient interactions to individual decision making. The strategy of the course is to cover topics in diagnosis, screening, prognosis, and therapy through case vignettes that are intended to illustrate principles of clinical reasoning. J. Concato, R. I. Horwitz.

Internal Medicine 105, Doctor/Patient Encounter. This course, extending throughout the first two years, is intended to teach medical students skills in medical interviewing, history taking and physical examination, and their application in clinical reasoning. The format of the course includes lectures, demonstrations and patient interviews, small group seminars, and weekly meetings in groups of four students for two years with an individually assigned faculty-tutor.

During the clinical tutorials in the first year, students begin to learn how to perform a complete physical examination in structured, supervised sessions in which they examine one another. They also learn the basics of interviewing patients. Other activities may involve talking with patients whose illnesses coincide with current classroom topics; visiting hospital support services such as Diagnostic Imaging (including Reading Room), Dialysis Unit, Newborn Special Care, an ICU, etc.; visiting affiliated institutions such as Hospice, a rehabilitation hospital, a geriatric care facility, an HMO, a community clinic, or a private physician's office.

The second year includes learning more sophisticated skills in obtaining a medical history, how to write it up in a prescribed format, and how to present it orally. Physical

examination skills are expanded by examining patients and, in the second term, by focusing on physical diagnosis of common pathologic findings in the heart, lungs, abdomen, extremities, etc. Most of the second-year activities occur within the tutorial group, although standardized patients are used for teaching breast, pelvic, and scrotal exams. At the end of this course, students are prepared to begin clerkships. Limited to medical students. S. Flynn.

Internal Medicine 106, Mechanisms of Disease: Systems/Organs. The purpose of this course is to bridge the preclinical and clinical years and to teach students to use preclinical data in a clinical context. It introduces the pathologic variation of the normal physiologic mechanisms that the students have already learned. This required course is offered in a continuum from October through May for second-year medical students. It consists of integrated discrete modules that present disease processes from various disciplinary perspectives. The components include pathophysiology, pathology, laboratory medicine, diagnostic radiology, preventive medicine, pharmacology, clinical medicine, pediatrics, and surgery.

For each module, representatives from each discipline meet and create a course that presents a comprehensive overview of the organ/system, progressing and building information in a way that allows students to form a basis on which to add knowledge throughout their careers.

Material is taught in lecture format; small groups discuss cases and laboratories. The modules are Blood/Hematology; Cardiovascular System; Clinical Neuroscience and Psychiatry; Endocrine Systems; Female Reproductive System; Gastrointestinal System; Musculoskeletal System; Renal System including Male Reproductive System; Respiratory System; Ophthalmology; Oncology; and Skin. Each module has a faculty coordinator. These modules provide excellent preparation for clinical work on the wards as well as preparation for second-year USMLE boards, which are now entirely clinically oriented. Course is limited to second-year medical students. S. Flynn.

Internal Medicine 107b, Professional Responsibility. Through a series of lectures and small group case discussions, this course examines physicians' responsibilities to their patients, their colleagues, their communities, and to society at large. The course studies the nature of the physician-patient relationship and its ethical underpinnings, as well as the legal, social, and economic contexts in which it operates. It focuses on the physician's obligations in several areas, including care for the underserved and vulnerable, respect for patients' privacy and confidentiality, obtaining informed consent for treatment, respecting the right to refuse treatment, respecting reproductive choices, and dealing with issues at the end of life. Finally, the course examines the flaws and strengths of the U.S. health care system, and the personal and social consequences of recent changes in the way health care is organized and financed in this country. J. S. Hughes.

Internal Medicine 108, Integrative Clinical Medicine. This three-work course is required of fourth-year students in the spring term. Each week's sessions center on the evolution of a complex case using intensive small-group formats under the supervision of experienced clinical faculty. The course involves significant student research and peer presentations surrounding the salient clinical, social, and behavioral issues presented by the unknown case itself, followed by a final grand rounds with considerable patient participation and student interaction. The afternoon sessions include an emergency medicine lecture series conducted by faculty in that discipline in preparation for internship, and approximately 10–12 sessions in medical informatics and computer resources for future practice conducted by the staff of the Sterling Medical Library. F. J. Bia (course director).

Internal Medicine 122, Endocrine Clerkship. The student participates as an active member of the endocrine training program, making daily rounds with the endocrine fellows, residents, and attending physicians. Inpatient consultation, a variety of endocrine clinics, and regularly scheduled metabolism-endocrine conferences are part of the rotation. Full time for three weeks. Offered during elective time. Limited to two students at a time throughout the year. J. Bogan, A. E. Broadus (supervisor), K. L. Cohen, B. Gulanski, R. G. Hendler, E. H. Holt, K. L. Insogna, S. Inzucchi, U. Masiukiewicz, R. S. Sherwin, G. I. Shulman, J. Wysolmerski.

Internal Medicine 123, Renal Clerkship. This clerkship in clinical nephrology offers the student an opportunity for in-depth learning regarding problems in fluid and electrolyte disturbances, acute renal failure, chronic renal failure, and hypertension. Emphasis is placed on problem recognition, pathophysiologic diagnosis, evidence-based clinical judgment, and management based on pathophysiologic principles. The primary activity involves the inpatient consultation service in which the student works up and follows several patients per week, and participates in daily rounds with the attending physicians, postdoctoral fellows, and residents on service. Students also attend adult ambulatory clinics, have the opportunity to attend a pediatric renal clinic, and participate in the weekly renal conferences. An introduction to hemodialysis, peritoneal dialysis, renal transplantation, and renal biopsy histology is also provided. Students have the opportunity to visit patients on rounds in the hemodialysis units and see patients in the outpatient peritoneal dialysis clinics. Students are encouraged to review renal pathology slides as appropriate and can extend their learning by working through a collection of case studies. The clerkship is limited to two students per hospital; full-time participation is expected. Students should have completed the Internal Medicine clerkship. Rotations can be three- to six-weeks' duration, although, to derive benefit, at least four weeks is recommended. The elective is offered at both Yale-New Haven Hospital and the Veterans Affairs Connecticut Health Care System, West Haven. A. Abu-Alfa, P. S. Aronson, M. J. Bia, L. Cantley, S. Crowley, G. V. Desir, R. Formica, J. Forrest, A. Peixoto, J. P. Hayslett, S. Huot, R. Mahnensmith, M. Perazella (supervisor), A. Rastegar, R. Reilly, S. Somlo.

Internal Medicine 136, Digestive Disease Conference. Each Friday afternoon from 2 to 3:30 P. M., current patients with gastrointestinal and liver problems of medical, surgical, pediatric, or radiologic interest are presented and discussed. This is a practical series of discussions intended to interest anyone from a second-year student to a practitioner. Active participation by all who come is encouraged. Meets in Fitkin. M. Topazian and Digestive Disease faculty.

Internal Medicine 137, Clinical Gastroenterology Clerkship. The student participates in the daily activities of the Gastroenterology Service. The student is an integral part of the GI team and should plan to spend full time on the elective at Yale-New Haven Hospital or the Veterans Affairs Connecticut Health Care System, West Haven. Activities include rounds, consultations, conferences at both hospitals, and special procedures. Students participate in outpatient clinics held by the various physicians of the section. This is an opportunity to see a wide variety of gastrointestinal problems and patients, with discussion and review. Offered to one student each at Yale-New Haven Hospital and Veterans Affairs Connecticut Health Care System. Rotations should be four weeks in duration. Students should have completed the Internal Medicine clerkship. Digestive Disease faculty.

Internal Medicine 141, Cardiology Clerkship. The student participates in the daily activities of the Cardiology Consultation Service, including rounds, consultations, semi-

inars, and conferences dealing with clinical cardiology, nuclear cardiology, echocardiography, cardiac catheterization, and other special procedures. This is a full-time elective requiring a full day's activities but no night call. The training experience emphasizes the physiologic basis for clinical manifestations of cardiovascular diseases, and their therapy. The elective is limited to three students at Yale-New Haven Hospital and two students at the Veterans Affairs Connecticut Health Care System, West Haven. The elective lasts a minimum of three weeks; six weeks is recommended if possible. Students must have completed basic Internal Medicine clerkships prior to clerkship. Following an initial Cardiology Clerkship, individual electives can be designed for specific cardiology laboratories or activities such as the coronary care unit, cardiac catheterization laboratory service, echocardiography, nuclear cardiology, electrophysiology, etc. J. Arrighi, B. Abbott, W. P. Batsford, J. R. Bender, M. Blum, J. J. Brennan, M. Burg, H. S. Cabin, J. Clancy, M. W. Cleman, L. S. Cohen, N. Fiengo, J. Foody, F. Giordano, D. Goldstein, H. Haronian, P. Hebert, C. Howes, C. C. Jaffe, S. Katz, H. M. Krumholz, R. Lampert, F. A. Lee, Y.-H. Liu, R. McNamara, S. E. Pfau, M. Radford, M. Remetz, L. Rosenfeld, K. Russell, R. Russell, M. Sadeghi, J. F. Setaro, A. J. Sinusas, R. Soufer, F. J. Wackers, D. Wencker, L. H. Young, B. L. Zaret. The individual supervisor is selected from the above participating faculty on a monthly basis.

Internal Medicine 142, Infectious Diseases. The goal of this clerkship is to broaden a student's experience and diagnostic skills in infectious diseases. Students participate as active members of the consultation service and training program in infectious diseases (Yale-New Haven and Veterans Affairs Connecticut Health Care System, West Haven hospitals). This requires a full-time daily commitment of four to six weeks although shorter clerkships are possible when justified. Activities include daily rounds with both fellows and attending physicians, attendance at all weekly subspecialty conferences, workup of several new consultations each week, formal case presentations, directed reading and library research, and case write-ups for review by the fellow and/or attending physician. Students are encouraged to work closely with fellows and to present cases. Training in diagnostic bacteriology, specifically designed for students, is conducted. Limited to a maximum of two students for each three- to six-week period throughout the year. Outside students accepted through the Office of the Assistant Dean. Completion of all basic clinical clerkships is preferred, though only the basic clinical clerkship in Internal Medicine is required. V. T. Andriole, F. J. Bia, D. L. Coleman, L. Dembry, G. H. Friedland, K. Joiner, M. Kozal, V. J. Quagliarello, M. Rigsby, B. Wong.

Internal Medicine 143, Externship in HIV/AIDS. Students desiring an intensive, more advanced experience with the care of HIV-infected persons may spend one month as a subintern on the Atkins Firm. The Atkins Firm offers a combined general internal medicine/HIV ward experience. Previously, Atkins admitted only HIV-positive persons. However, with the advent of highly active antiretroviral therapy and effective opportunistic infection (OI) prophylaxis, the HIV inpatient census has decreased and both HIV-positive and general medical patients are cared for. The firm practices a multidisciplinary HIV care approach. There are two Atkins teams, each comprised of an attending, one resident, two interns, and one third-year medical student. On average, 30–50 percent of the patients are HIV-positive. Students who elect an externship on Atkins function as an integral member of one of the two Atkins teams. However, the student does not substitute for, but works in tandem with one of the interns, essentially as a second intern. Activities include supervised initial evaluation and daily management of patients with HIV disease; daily rounds with the team; case presentations to the attending physician; and attendance of tri-weekly attending rounds, during which various HIV-related infections and noninfectious problems are discussed. In addition, the student works

closely with members from social work, nursing, pastoral care, and discharge planning to better appreciate the multidisciplinary nature of HIV care. Students also attend one outpatient HIV clinic per week in the Nathan Smith Clinic in order to supplement their inpatient experience with the ambulatory aspects of HIV disease. This elective accommodates one student per month and offers a unique opportunity to participate in comprehensive HIV care in the AIDS Care Program, preferably upon completion of all basic clinical clerkships. A previous medical or surgical subinternship is useful preparation. Outside students are accepted through the Office of the Assistant Dean. F. L. Altice, N. Angoff, F. J. Bia, M. Buitrago, G. H. Friedland, M. Kozal, P. Pierce, V. Quagliarello, T. Schreibman, K. Wagner.

Internal Medicine 146, Hematology Clerkship. This clerkship provides intensive exposure to clinical hematology by direct participation in the activities of a busy clinical hematology service. Students work up new patients and consultations (at least two patients per week), and attend outpatient clinic on Tuesday mornings, where they are assigned to see one new patient or two follow-up patients. Students also attend daily hematology ward rounds, bone marrow readings, weekly inpatient and outpatient clinical review, and clinical teaching conferences. Students may limit participation to include only attendance at daily conferences, bone marrow readings, and weekly hematology clinic. One or two students for three to six weeks throughout the year. D. Beardsley, N. Berliner, T. P. Duffy, B. G. Forget, P. McPhedran, R. J. Papac, J. M. Rappeport, H. Rinder, B. R. Smith, L. Solomon.

Internal Medicine 151/Environmental Health Sciences 575a,b, Introduction to Occupational and Environmental Medicine. Geared toward those interested in full-time specialty careers in occupational or preventive medicine, material covers clinical toxicology, industrial hygiene and techniques for evaluation of clinical and workplace problems. This didactic course meets two hours weekly throughout the year, beginning in September. Enrollment limited to 10. M. R. Cullen, M. Russi, and Occupational Medicine faculty.

Internal Medicine 152, Occupational and Environmental Medicine. This full-time clinical elective emphasizes recognition, management, and prevention of occupational diseases. Approximately five half-days are spent in outpatient clinics, the remainder of the time in on-site plant evaluation, clinical follow-up, and didactic teaching sessions. This course is full time, limited to two students per rotation, scheduling year-round. M. R. Cullen, P. Rabinowitz, C. A. Redlich, M. Russi, J. Sparer, O. Taiwo.

Internal Medicine 155, Advanced Clinical Clerkships (“Sub Internship”). Students serve as advanced clinical clerks on the floors of one of the following hospitals: Yale-New Haven Hospital; Veterans Administration Hospital, West Haven; Waterbury Hospital, Waterbury; or St. Mary’s Hospital, Waterbury. The students function in a role that provides a high degree of involvement in patient care decisions. Students function either as a pair in place of or with first-year residents, admitting patients to the medical service under the close supervision of a third-year resident in charge of the service and the attending physician. In addition to daily work rounds and teaching-attending rounds, students are expected to participate in departmental conferences concerning their patients. The purpose of the course is to provide advanced undergraduate education in the broad field of internal medicine above that received in the third-year clerkship. It provides the opportunity for students to increase their overall knowledge of, and experience with, a wide variety of disease processes. In addition, it provides practical experience in the process of gathering clinical data, making appropriate formulations, and basing decisions and priorities upon those formulations. By following a larger number of patients more closely, students increase their clinical acumen, improve their technical

skills, and develop an appropriate level of clinical confidence. The setting allows the development of an increased sense of patient care responsibility, from admission to discharge of the patient. Offered throughout the year for periods of four weeks each, to students who have completed their required medical clerkships. C. R. Kapadia (program director).

Internal Medicine 156, Clerkship in Liver Disease. The student becomes integrated into the team of physicians involved in inpatient and outpatient clinical hepatology. This team normally consists of a faculty attending, one to two postdoctoral fellows in liver disease, and one medical student. The student is expected to see inpatient consultations, discuss the findings with the fellow, and ultimately present the patient to the attending. Additionally, on Tuesday and Wednesday mornings the student sees patients in the Liver Outpatient Clinic. Attendance is expected at weekly liver biopsy, clinical and research conferences, and students may also attend the Liver Transplantation Clinic. This elective represents an intensive experience in hepatology, and during the six-week period the student is introduced not only to problems in the clinical management of liver disease, but also gains a growing appreciation of the role of the liver in systemic disease. This elective is offered at Yale-New Haven Hospital (Drs. Anderson, Boyer, Garcia-Tsao, Mistry, and Nathanson) or the Veterans Affairs Connecticut Health Care System, West Haven (Drs. Groszmann and Garcia-Tsao). Three or six weeks, full time.

Internal Medicine 157, Gastroenterology. Clinical rounds and clinics with local and Yale gastroenterologists; conferences on gastrointestinal problems with emphasis on physiologic, radiologic, and pathologic correlation; gastrointestinal radiology conferences; demonstrations of endoscopy (including fiberoptic visualization of the esophagus, stomach, duodenum, colon); other procedures, such as biopsy (liver, esophagus, stomach, small intestine, colon, and rectum), cytology (esophagus, stomach, pancreaticobiliary, and colon), polypectomy, laser, bicap, ERCP, sphincterotomy, sclerotherapy, and PEG. Emphasis on diagnosis and clinical management of gastrointestinal disease of all types. Available to fourth-year students throughout the year at Bridgeport Hospital. I. M. Roberts.

Internal Medicine 158, Primary Care Clerkship. The Primary Care Clerkship provides students with an opportunity to acquire knowledge and develop clinical and interpersonal skills applicable to outpatient primary care practice. Students are assigned to an office or clinic where they care for patients under supervision by either a family practitioner, general internist, or pediatrician on Mondays, Wednesdays, and Fridays for one month. On Tuesdays and Thursdays students attend a case-based Workshop Program based upon common disorders and core skills relevant to primary care practice. Students may also obtain their clinical experience at an "away site" in the United States or Puerto Rico and complete the Workshop Program on campus during another rotation. Director: F. Haeseler; with a faculty comprised of physician educators from the greater New Haven area who share a commitment to practice-based teaching.

Internal Medicine 158-1, Primary Care Evening Clinic. The ambulatory care experience in the Primary Care Center is designed to provide longitudinal experience in the management of adult outpatients. These are weekly pre-clinic conferences, two per month being didactic conferences given by a student or a guest lecturer. The clinic is held each Wednesday evening, 5–9 P.M. Open to a limited number of fourth-year students and fulfills the primary care requirement. Director: K. P. White; and staffed by M. Dillard and rotating attending physicians.

Internal Medicine 159, Lung Diseases. Students work closely with faculty and staff of the pulmonary group and participate in daily consulting and intensive care rounds. Students assist in the examination and treatment of patients with various cardiopulmonary

diseases, including tuberculosis, chronic obstructive airways disease, asthma, lung cancer, interstitial lung diseases, respiratory lung infection, and other diagnostic problems. They receive practical instruction in lung function tests and their interpretation, in clinical and laboratory methods used for diagnosis and management (including intensive respiratory care), and in fiberoptic bronchoscopy. Didactic lectures are given in areas relating to airway pharmacology, lung cell biology, and lung immunology (respiratory cells, immunologic reactions, etc.). H. Cain, G. Chupp, L. Cohn, J. Hilbert Howard-Flanders, P. Lee, R. Matthay, V. Mohsenin, P. Noble, M. Pisani, C. Redlich, C. Rochester, F. Roux, M. Siegel, L. Tanoue, T. Zheng.

Internal Medicine 180, Rheumatology. Students participate in the inpatient Rheumatology consult service at both Yale-New Haven Hospital and the Veterans Affairs Connecticut Health Care System, West Haven. Students attend two general arthritis clinics at the Veterans Affairs Connecticut Health Care System, West Haven, one general arthritis clinic in the Primary Care Center, Yale-New Haven, and spend one afternoon per week with an attending rheumatologist in a private practice setting. Students also attend a general Orthopaedics clinic during their rotation. Students complete a core curriculum in Rheumatology and fill out pre- and post-rotation evaluation forms. Formal conferences include Rheumatology Grand Rounds, which are held each Wednesday at 8 a.m., and a Case Conference at 9 a.m. Optional conferences include a Rheumatology research-in-progress meeting, and a weekly research journal club held on Fridays at noon. If interested, students may opt to combine Rheumatology and Allergy and Clinical Immunology. Limited to two students for each period of four to six weeks throughout the year. L. Bockenstedt, R. Bucala, J. E. Craft, J. Evans, E. Fikrig, L. Frankel, I. Kang, S. E. Malawista, M. Mamula, R. Montgomery.

Internal Medicine 181, Medical Oncology Clerkship. An intensive exposure to medical oncology including diagnosis, staging, evaluation and combined modality therapy, supportive care, and management of problems associated with cancer. Students work under the direct supervision of the attending staff and participate in the care and management of patients on the inpatient service and in the outpatient clinic. They join oncology morning rounds and present patients at the Clinical Oncology Conference. Limited to two students for two to six weeks throughout the calendar year. D. L. Cooper, Program Director.

Internal Medicine 182/Psychiatry 209, Addictions Medicine Clerkship. Offered jointly by the departments of Internal Medicine and Psychiatry. The Yale University School of Medicine offers an elective clinical training experience in Addictions Medicine for interested third- and fourth-year medical students. The primary training sites are the inpatient psychiatric service for dual diagnosis patients at the Connecticut Mental Health Center, the outpatient substance abuse treatment services at the Connecticut Mental Health Center, the APT Foundation Central Medical Unit, and the Primary Care Center at Yale-New Haven Hospital. H. R. Pearsall, P. G. O'Connor. The Addictions Medicine Clerkship is an elective that is scheduled for four weeks. (Slightly longer or shorter training experiences are available by contacting H. R. Pearsall.) Students participate as medical student clerks on the Dual Diagnosis Unit at Connecticut Mental Health Center. This experience is an intensive one, and involves working closely with addicted patients with chronic mental illness. In addition to the inpatient experience, students participate in outpatient treatment under the supervision of clinicians at the Substance Abuse Treatment Unit and the Central Medical Unit, and in the substance abuse assessment and referral services of the Primary Care Center. Students are also invited to participate in the Substance Abuse Research Seminar as well as other educational activities of the Inpatient Division and the Substance Abuse Treatment Unit. For

students desiring an intensive focus in one of the three areas of teaching (inpatient dual diagnosis, outpatient substance abuse treatment, or substance treatment in a primary care setting), a schedule can be tailored to provide more time in the setting of interest. H. R. Pearsall, P. G. O'Connor.

Internal Medicine 184, Medical Informatics. We explore topics in informatics, such as the definition and scope of the specialty, software engineering, networking and networks, database management systems, information retrieval, the electronic medical record, clinical decision support, and medical decision science. By arrangement with the instructor. R. N. Shiffman.

Internal Medicine 187, Infectious Disease. The elective emphasizes clinical diagnosis and treatment of patients with infectious diseases, hospitalized at the Hospital of Saint Raphael. Students make rounds with infectious diseases fellows and with the infectious diseases attending physician. Rounds include discussions of many common infectious diseases problems and of approaches to appropriate use of antibiotics. Students are expected to follow critically ill patients diligently, and may be asked to review articles regarding infections affecting patients followed by the infectious diseases service. J. M. Boyce, S. Weissman, H. Vikram, M. Virata, M. Golden.

Internal Medicine 188, Renal. The elective is supervised by the Renal Service at the Hospital of St. Raphael. Discussions are held concerning glomerular, tubulo-interstitial, acid base, and electrolyte disorders. The student participates by performing initial consultations on four or five new inpatients per week, as well as actively participating in the follow-up care of interesting renal, electrolyte, and acid-base problems being followed in the hospital. Student participation in the weekly outpatient Renal Clinic is encouraged. Participation in the outpatient hemodialysis unit and outpatient continuous ambulatory peritoneal dialysis facility is an optional feature of the elective. Formal attending/teaching rounds are held daily for renal fellows, residents, and students participating in the elective. Conferences include biweekly renal conference at the Hospital of St. Raphael, weekly renal conference at Yale-New Haven Hospital, and weekly hemodialysis and continuous ambulatory peritoneal dialysis conferences. The renal fellows at the Hospital of St. Raphael help in the supervision of the students. The course is offered as an elective with a limit of two students for each rotation. H. Carey, T. Eisen, F. O. Finkelstein, J. Hansson, M. Hotchkiss, D. Simon, D. Smith.

Internal Medicine 189, Pulmonary Critical Care. Supervised clinical management in the Medical-Pulmonary Intensive Care Unit of the Hospital of St. Raphael. The student shares responsibility for a variety of acute medical problems, with an emphasis on pulmonary diseases. Extensive experience with mechanical ventilation and other forms of respiratory therapy is available. A working understanding of cardiopulmonary physiology, arterial blood gases, and acid-base abnormalities in the assessment and management of respiratory disorders is obtained with the direct supervision of pulmonary medicine attending physicians as well as fellowship trainees in the Yale Pulmonary training program. The elective is limited to one student per period. H. Knight, J. Pippim.

Internal Medicine 192, Physical Medicine and Rehabilitation. The Hospital of St. Raphael has developed an elective that is designed to offer students a wide range of clinical exposure to the diagnosis and management of patients with rehabilitation problems. Students are actively involved with in-hospital patients and outpatients as well as EMGs. Focus is on thorough musculoskeletal and functional examination. Common diagnoses seen include neck and back pain, amputees, post-traumatic nonsurgical orthopaedic disorders, and electrodiagnostics/EMGs. This elective results in an increased awareness of the complete evaluation of musculoskeletal and neurological disorders and how they impact daily function. S. George, J. O'Brien.

Internal Medicine 193, Subinternship in Medicine, Hospital of St. Raphael. This subinternship allows the senior student the opportunity to assume more responsibility for the care of the individual patient. Working as a member of the team, the subintern has major responsibilities in initial assessment, plan formulation, and ongoing patient management. Full-time medical directors provide supervision and training. The option of supervised night call provides additional opportunities for experience in acute care medicine. The student may elect assignment on one of the four teaching services, the MICU, or the CCU. B. Wu, R. Nardino, and colleagues.

Internal Medicine 195, Medical Intensive Care Unit Elective. This rotation exposes highly qualified fourth-year students to the broad spectrum of medical critical care. Students are on call every third night with an intern and resident pair, assisting them in the admission of patients. Students follow patients in the MICU and assist in their care with their intern and resident. It provides the opportunity for participating in the acute management of common medical emergencies such as pulmonary edema, DKA, GI bleeding, acute respiratory failure, renal failure, coma, overdoses, metabolic acidosis, hypertensive emergencies, and myocardial infarctions. Students are expected to learn about the pathophysiology and treatment of these disorders, in this nonsubinternship setting. Basic cardiac life support training is expected. All students must obtain approval in advance to take this elective, based on performance in Medicine I and/or II clerkships, from the supervising MICU Medical Director, M. Siegel.

Internal Medicine 500, Quantitative Clinical Epidemiology. This composite course begins with an intensive set of summer events during July and the first two weeks of August. The course resumes in September and continues throughout the rest of the academic year, ending in early June. The total course actually comprises eight courses. The summer term contains the session on elementary statistics, and part of the course on research architecture and data processing. The fall term contains the completion of research architecture, the courses on experimental design and postelementary statistics, and more on data processing. The spring term contains the remaining courses. Summer sessions are held four times a week, for ten hours per week. Fall sessions are held three times a week, for six and one-half hours per week. Permission of instructor required. J. P. Concato, R. I. Horwitz, J. F. Jekel, H. M. Krumholz, C. K. Wells.

Internal Medicine 501, Medical Journalism. A course in review of scientific articles submitted to the *Yale Journal of Biology and Medicine*. Medical, public health, nursing, and graduate students in other biological sciences are selected on a competitive basis for the editorial board of the *Journal*, usually in the first year of their graduate program. Students review several manuscripts each year in conjunction with a faculty member and present their reviews to the editorial board. Students also prepare book reviews, review articles, and other kinds of articles for consideration for publication in the *Journal*. Students have the opportunity to participate in all phases of medical publication, including the technical and production work of the *Journal*. The students remain on the board for the full term of their graduate program. Editorial board meetings are held regularly throughout the year. Occasional guest lectures and regular discussions by editors of other journals supplement the review sessions. One hour biweekly. W. C. Summers and editorial staff.

Internal Medicine 502, Clinical Clerkship, The Connecticut Hospice, Branford, Connecticut. This fifty-two-bed inpatient program at the nation's first hospice provides intensive palliative care for patients with terminal illnesses. The medical, psychosocial, and spiritual needs of these patients and their families are met through the coordinated efforts of an interdisciplinary team of physicians, nurses, social workers, pharmacists, and clergy. When cure is no longer realistic, the goal of therapy becomes symptom control

to enable the patient to carry on an alert and pain-free existence. To achieve this goal, a careful physical assessment and noninvasive diagnostic studies can permit the use of focused therapeutic approaches, carefully selected to meet the needs of the individual patient. The specialized hospice care program emphasizes control of pain and other symptoms with a wide spectrum of both pharmacologic and nonpharmacologic modalities. Students participate in the care and management of hospice inpatients, potentially serving as primary physician for selected patients, under the close supervision of the hospice staff physicians and/or medical director. They participate in morning rounds, family conferences, and weekly Interdisciplinary Team Conferences. A two- or four-week rotation is offered. The four-week rotation includes time spent in the home care program, attending team conferences, and making home visits. The home care program encompasses eighty-nine cities and towns throughout Connecticut. Contact Lisa Candido at 203.481.6283, extension 534.

Internal Medicine 504, Bone Marrow Transplantation. A one-month rotation on the adult bone marrow transplantation unit. Daily inpatient rounds are held. Students are involved in the care of the patients, including the performance of procedures, and attend a daily bone marrow transplant clinic for patient follow up. Weekly clinical conferences are also attended. A suggested reading program is provided. Students are required to present a short discussion about a topic of their choice. D. Cooper.

Internal Medicine 610/Investigative Medicine 610, Translational Research and Molecular Tools, Part II. This is an intensive, full-time two-week lecture and laboratory course, with emphasis on protein and nucleic acid biochemistry and on RNA interference experiments. The lectures complement and extend the laboratory experience. The laboratory course requires full-time commitment. Offered in August. Prerequisite: consent of the instructor. E. Ullu and staff.

Internal Medicine 620/Investigative Medicine 620, Translational Research and Molecular Tools, Part I. In week one of this two-week course, the student becomes familiar with both the underlying theory and the practical application of genetic sequence analysis. Lectures are supplemented with computer laboratory sessions to reinforce the ideas and provide practical experience. The ideas presented in this course are critical for molecular experimental design, interpreting results of sequencing projects, inferring gene function from primary genetic sequence data, and managing molecular biology data. In week two, students learn the underlying principles in structure-based drug design. Lectures are supplemented with computer laboratory sessions devoted to practical learning of basic principles in protein structure determination, analysis, and relationship to molecular drug design. Clinically relevant examples of this approach are considered. Offered in July. Prerequisite: consent of the instructor. K. Joiner and staff.

Internal Medicine 625/Investigative Medicine 625, Principles of Clinical Research. The purpose of this two-week intensive course is to provide an overview of the objectives, research strategies, and methods of patient-oriented research. Topics include: competing objectives of clinical research, principles of observational studies, principles of clinical trials, principles of meta-analysis, interpretation of diagnostic tests, challenges in using statistics in clinical research, causal inference, and decision analysis. Sessions include lectures and discussion of readings distributed in advance. Offered in July. Prerequisite: consent of the instructor. S. Inouye and staff.

Internal Medicine 630a/Investigative Medicine 630a, Practical and Ethical Issues in Clinical Investigation. This term-long course addresses topics that are central to the conduct of clinical investigation, including ethics of clinical investigation, scientific fraud, technology transfer, and interfacing with the pharmaceutical industry. Practical sessions include: scientific presentations and teaching, medical writing, NIH peer review

process, journal peer review process, and career development: models of academia. This course provides guidelines and a framework for the clinical investigator to write, obtain funding for, conduct, and present a clinical study. Prerequisite: consent of the instructor. H. Binder and staff.

Internal Medicine 640/Investigative Medicine 640, Seminars in Molecular Medicine. This two-term (fall–spring) seminar course focuses on the details of the basic investigation of the biochemistry, cell biology, genetics, immunology, and molecular biology of human disease from a sophisticated perspective. At each session, articles on the basic laboratory investigation of a disease or disease process (which is well understood at the molecular level) are selected by the faculty. Faculty provide a didactic session, followed by discussion and student presentations on topics selected jointly with the conveners. Prerequisite: consent of the instructor. K. Joiner and staff.

Internal Medicine 650/Investigative Medicine 650, Seminars in Clinical Investigation. This two-term (fall–spring) seminar course explores the interface between clinical strategies and the methodologies used to investigate these topics. A variety of topics are covered in an interactive seminar format. Articles are selected by the faculty, and students review and discuss the articles at each session. In addition, students gain experience in critical evaluation of study designs and protocol development (in the fall term), and grant writing and reviewing, medical writing/abstract presentation (in the spring term). Attendance and active participation are required. The course gives new clinical investigators the tools to conduct their own research project. Prerequisite: introductory biostatistics training (e.g., GCRC two-week course) and consent of the instructor. S. Inouye and staff.

Humanities in Medicine

The courses listed below are offered through the Program for Humanities in Medicine for 2002–2003. For further information, call Dr. Thomas Duffy or Clara Gyorgyey at 203.785.6102. Schedules of courses are flexible. If you are interested in any (or all) of the following courses, or have other interests that could be addressed through this program, please so indicate on the sign-up sheet. No obligation even if you sign up.

Internal Medicine 505, Literature and Medicine. Hope, courage, devotion, anguish, pain, illness, and death – the substance of all great literature is also fundamental to medicine. Literature and Medicine, a five-session elective, introduces students to short works of fiction, illuminating the ethical, moral, and psychological issues continually confronting their profession. The course helps students develop an understanding of the ways in which interpreting a literary narrative enhances their interactions with patients and clarifies the ethical dimensions of their work. Course schedule: six meetings at a mutually determined time. T. Duffy, W. Maye.

Internal Medicine 506, Hungarian Literature and Medicine. A five-session elective designed to introduce students to a rather unfamiliar culture: five highly gifted and severely impaired early twentieth-century Hungarian authors and their literary works that feature universal issues central to medicine anywhere. Students read the short stories and poetry of outstanding Hungarian authors in new English translation. The main focus is on how their diseases (brain tumor, syphilis, cancer, manic depression, and schizophrenia) altered their creative consciousness and their works. Course schedule: five meetings at a mutually determined time. C. Gyorgyey.

Internal Medicine 507b, Traditional Jewish Attitudes Toward Physicians' Rights, Responsibilities, and Immunities. A three-part elective seminar, using traditional Jewish sources, to consider such matters as the physician's right to meddle with God-caused illness; physician licensure; judicial oversight for patient injury or death; and various immunities for the physician. Course schedule to be agreed upon. M. Traube.

Internal Medicine 509b, Pregnancy and Neonatal Loss. For first-year students. This elective centers around what a physician feels when his/her patient dies and how he/she can come to a resolution with regard to this loss. In particular, focus on the expression of feelings through letter writing, poetry, and face-to-face encounters with family members. Introduction to "case histories" based upon the lecturer's experiences. Course schedule: six meetings at a mutually determined time. Please contact the instructor by e-mail: berman@hygeia.org. M. R. Berman.

LABORATORY MEDICINE

Office: CB 407, 688.2446

Professors

A. Baumgarten (*Emeritus*), F. J. Bia (*Internal Medicine*), J. Booss (*Neurology*), R. K. Donabedian (*Director of Medical Studies*), S. C. Edberg, P. I. Jatlow (*Chair*), L. Kaplow (*Pathology; Emeritus*), P. B. Kavathas, M. Landry, P. McPhedran, D. Seligson (*Emeritus*), B. Smith (*Vice Chair*), E. L. Snyder (*Associate Chair, Clinical Affairs*), P. J. Tattersall (*Associate Chair, Research and Academic Affairs*)

Associate Professors

D. Krause, C. Rinder (*Anesthesiology*), H. Rinder, M. Shlomchik, G. Stack

Assistant Professors

S. Campbell, M. Hodsdon, Y. Y. Wu

Senior Research Scientist

S. Cotmore

Research Scientists

G. Anderson (*Child Study Center*), C. Fong-Cheng, W. McMurray

Associate Research Scientists

L. Devine, J. G. Howe, L. J. Kieffer, J. Liu, X.-Y. Ma, G. Palmer, M. Ripps

Clinical Professors

B. Griffith, R. A. Levine, S. Wardlaw

Associate Clinical Professors

D. Mayo, I. Nash, T. J. Tinghitella

Assistant Clinical Professors

P. Fiedler, S. Gray, H. Malkus, R. R. Rathbone, C. Rauch, N. Shafi

Lecturers

N. Drew, D. Ferguson, W. Gross, C. Kontnick

Laboratory Medicine 102b. This lecture, laboratory, and seminar course deals with scientific use of clinical laboratories (hematology, clinical chemistry, immunology, blood banking) as a basis for the understanding, diagnosis, and treatment of disease. Emphasis is on the selection and interpretation of laboratory tests used in the practice of medicine as well as on acquiring some understanding of the technology used in the clinical laboratories. Lectures and laboratories are integrated into the new organ-based modular system of clinical instruction for second-year medical students. Second-year course. R. K. Donabedian and associates.

Laboratory Medicine 123a, Medical Microbiology. This course focuses on both basic microbial pathophysiology and medical microbiology. The course is divided into four sections, consisting of microbial physiology and genetics, bacteriology and mycology,

virology, and parasitology. Microbial pathogenesis is taught as it relates to human infectious disease on the cellular and molecular levels. The unique structures, lifestyles, and roles in producing disease of medically important microbes are taught in lecture, laboratory, and small group settings. Laboratory sessions acquaint the student with techniques and procedures used in the laboratory detection and identification of the various groups of microorganisms, and employ a case-based approach to tie the laboratory findings to clinical illness and management. In laboratory, the student learns the histochemical, immunological, biochemical, and tissue culture techniques used for identification of microbes. In addition to learning some of the more complex laboratory procedures such as tissue culture in virological diagnoses, the student becomes proficient in simpler yet critically important bedside tests such as the Gram stain. Problem-based learning sessions in clinical infectious disease are offered in the last half of the course to bridge the science of the microbe to the management of infected patients. Second-year course. S. Campbell, F. Bia, S. Edberg, M. Landry, T. Tinghitella, and associates.

Laboratory Medicine 131. This is an in-depth experience in the field of laboratory medicine. The various diagnostic tests available in a large university hospital clinical laboratory are examined in terms of basic technology, theory, clinical indications for ordering, and specificity for disease process. Emphasis is on clinical laboratory correlation. The student participates in the various departmental teaching conferences such as Journal Club, Research Seminar, and Clinical Rounds. The students can select rotations through the various laboratories or concentrate in one area (blood bank, clinical chemistry, hematology, microbiology, immunology). Three days per week, for two or three weeks, given three times per year. Limited to two students per session. R. K. Donabedian and associates.

Laboratory Medicine Teaching Sessions for Third-Year Medical Students. The purpose of the Laboratory Medicine Teaching Sessions is to introduce third-year students on their clinical rotations to basic concepts of laboratory diagnosis. On the first afternoon of their Internal Medicine rotations at Yale-New Haven Hospital, students visit four laboratories: Blood Bank, Hematology, Chemistry, and Microbiology/Virology. In each laboratory, the faculty use clinical cases together with relevant slides, culture plates, or other test data to illustrate the use and interpretation, as well as pitfalls, of laboratory tests. These teaching sessions should also serve to encourage and facilitate communication with the laboratories after the students return to the wards.

MICROBIAL PATHOGENESIS

Office: 295 Congress Avenue, Room 354, 737-2404

Professors

N. W. Andrews, J. E. Galán, M. K. Hostetter (*Pediatrics*)

Associate Professor

C. R. Roy

Assistant Professors

B. I. Kazmierczak (*Internal Medicine*), W. H. Mothes

Associate Research Scientist

L.-M. Chen

Microbiology 601a and b, Seminal Papers on the Foundations of Modern Microbiology. A required course for Microbiology first- and second-year students; not for credit. Students present and discuss papers describing fundamental discoveries in areas related to microbiology. The goal is to familiarize students with the process of scientific discovery, and with the history of major developments in the field. Topics include important discoveries involving major human pathogens, fundamental processes in molecular biology, and the development of technology that had a major impact in current biomedical research. N. Andrews, P. Tattersall.

Microbiology 685b, Molecular Mechanisms of Microbial Pathogenesis. The course focuses on current topics related to host pathogens interactions. Each week a lecture is given on the topic followed by student presentations of seminal papers in the field. All participants are required to present a paper. N. Andrews, J. Galán, C. Roy, W. Mothes.

MOLECULAR BIOPHYSICS AND BIOCHEMISTRY

Offices: JWG 304, 432.2077; SHM C106, 785.4246

Professors

D. M. Crothers (*Chemistry*), D. M. Engelman, J. Fruton (*Emeritus*), A. Garen, S. Ghosh (*Immunobiology*), N. D. F. Grindley (*Director of Graduate Studies*), A. Hamilton (*Chemistry*), M. Hochstrasser, W. H. Konigsberg, P. Lengyel (*Emeritus*), R. Lifton (*Genetics*), R. M. Macnab (*Director of Undergraduate Studies*), I. G. Miller (*Pediatrics*), S. G. J. Mochrie (*Physics*), P. B. Moore (*Chemistry*), A. M. Pyle, C. M. Radding (*Genetics*), L. Regan, F. M. Richards (*Emeritus*), G. L. Schmir (*Emeritus*), R. G. Shulman (*Emeritus*), S. Simmonds (*Emeritus*), O. Sinanoglü (*Chemistry; Emeritus*), M. Snyder (*Molecular, Cellular, and Developmental Biology*), D. Söll, J. A. Steitz, T. A. Steitz (*Chair*), S. Strobel, J. M. Sturtevant (*Chemistry; Emeritus*), W. C. Summers (*Therapeutic Radiology*), D. C. Ward (*Genetics*), H. W. Wyckoff (*Emeritus*)

Professor (Adjunct) of Research

K. Williams

Associate Professors

S. Baserga (*Director of Medical Studies*), M. Gerstein, M. Koelle, A. Miranker, M. Solomon, S. Wolin (*Cell Biology*)

Assistant Professors

J. Cabral, E. De La Cruz, L. Heginbotham, A. Koleske (*Director of Graduate Admissions*), V. Unger

Senior Research Scientists

C. Joyce, P. Lengyel

Research Scientists

Z. Hu, K. Tycowski, J. Wang

Visiting Research Scientists/Scholars

J. H. Kim, J. Li, Y. Ma, L. Wang

Associate Research Scientists

A. Amerik, S. Balasubramanian, J. Burton, D. Chase, A. Cheng, M. Cocco, J. Countryman, J. Elliott, E. Folta-Stogniew, E. J. Hager, K. Hager, J. Hansen, P. Harrison, Z. S. Juo, S. Kamtekar, W. D. Kennedy, S. Mane, B. Min, J. Pata, D. Tumbula-Hansen, G. Yang, Y. W. Yin

Postdoctoral Fellows

L. Aramli, G. Blaha, G. Clayton, N. Conrad, O. Fedorova, L. Feng, S. Flaherty, Y. Fujii, A. Ghetu, T. Hirose, Y. Huang, S. Jaswal, Y. Kluger, U. Lehnert, N. Luscombe, T. Magliery, G. Muth, D. Schneider, D. Schwartz, L. Szewczak, C. Waldsich, Y. Wang, Y. Xiong

Postdoctoral Associates

P. Adams, R. Albright, S. Bailey, P.-J. Chang, S. Chang, L.-W. Chen, C.-N. Chin, S. Chung, A.R. Curren, J. Dervan, B. Ding, A. Dixon, A. Eversole, B. González-Pedrajo, S. Gülich, K. Huang, S. Irizarry, R. Jansen, T. Kawashima, D. Klimenko, R. Krieger, N. Lan, I. Laurenzi, F. Li, G. Li, X. Li, Y. Liu, R. Lytle, X. Ma, K. Malarkey, T. Marlovits, J. McMurry, D. Milburn, H. Nakano, S. Namgoong, K. Okuda, D. Ostapenko, V. Purohit, A. Rebane, B. Ruan, J. C. Salazar, V. Serebrov, W. Silverman, X. Song, J. Su, Y. Sun, H. Toogood, S. J. Venkatraman, S. Wenwieser, C. Wilson, J. Ye, J. Yu, E. Zakharova, Z. Zhang

Postgraduate Associates

I. Ahel, A. Ambrogelly, D. Korenčić, E. Kutluay, M. Locher, R. C. Polycarpo, A. Sauerwald

Research Affiliate

W. Summers

Lecturers

A. Belperron (*Internal Medicine*), L. Denson (*Pediatrics*), J. Kahn (*Pediatrics*), W. D. Kennedy, J. McKinney (*Pediatrics*), A. Pawashe, V. Samuel

Molecular Biophysics and Biochemistry 550a, Molecular Foundations of Medicine. *This course is part of the Molecules to Systems course, which is open only to first-year medical students.* An introduction to the major concepts of biochemistry and molecular biology, with emphasis on the human body. Special attention is devoted to how recent advances in basic science contribute to our understanding and treatment of human disease. S. Baserga, A. Koleske, I. G. Miller, D. Engelman, M. Koelle. Conference leaders: A. Belperron, L. Denson, J. Kahn, W. D. Kennedy, J. McKinney, V. Samuel.

Molecular Biophysics and Biochemistry 600a, Principles of Biochemistry I. A rigorous introduction to the major concepts of biochemistry and to the process of discovery in this discipline, with emphasis on macromolecular conformation and physical processes in biochemistry. Energy metabolism, hormone signaling, and muscle contraction as examples of complex biological processes whose underlying mechanisms can be understood by identifying and analyzing the molecules responsible for these phenomena. M. Koelle, D. Engelman.

Molecular Biophysics and Biochemistry 601b, Principles of Biochemistry II. The chemistry and metabolism of nucleic acids, the mechanism and regulation of protein and nucleic acid synthesis, and selected topics in macromolecular biochemistry. J. Steitz, W. Konigsberg, S. Baserga.

Molecular Biophysics and Biochemistry 602a/Cell Biology 602a, Molecular Cell Biology. A comprehensive introduction to the molecular and mechanistic aspects of cell biology for graduate students in all programs. Emphasizes fundamental issues of cellular organization, regulation, biogenesis, and function at the molecular level. S. Wolin, G. Warren, T. Pollard.

Molecular Biophysics and Biochemistry 625a/Genetics 625a/MCDB 625a, Basic Concepts of Genetic Analysis. The universal principles of genetic analysis in eukaryotes are discussed in lectures. Students also read a small selection of primary papers

illustrating the very best of genetic analysis and dissect them in detail in the discussion sections. While other Yale graduate molecular genetics courses emphasize molecular biology, this course focuses on the concepts and logic underlying modern genetic analysis. T. Xu, M. Koelle, R. Lifton, G. S. Roeder, M. Stern.

Molecular Biophysics and Biochemistry 642a/EMD 642a/Genetics 642a/MBIO 642a/MCDB 642a, Roles of Microorganisms in the Living World. A topical course exploring the biology of microorganisms. Emphasis is placed upon mechanisms underlying microbial adaptations and how they influence biological systems. Prerequisites: biology, chemistry, and biochemistry. L. N. Ornston, D. McMahon-Pratt, R. M. Macnab.

Molecular Biophysics and Biochemistry 650a and 651b, Laboratory Rotation for First-Year Students. Three consecutive research laboratory experiences lasting eight to ten weeks each. Required for all first-year graduate students. N. D. F. Grindley.

[**Molecular Biophysics and Biochemistry 658a/Chemistry 558a, Research Topics in Biophysics.** An advanced treatment of the fundamental physical properties that dictate the behavior of biological molecules. Taught with participation of a number of biophysics faculty; extends to their current research specialties. Not offered in 2002–2003.]

Molecular Biophysics and Biochemistry 660Lb, Laboratory for Biochemistry and Biophysics. An intensive introduction to the principles and applications of experimental techniques currently used in biochemistry, biophysics, and molecular biology. A. Garen, W. Konigsberg, A. Pawashe.

Molecular Biophysics and Biochemistry 675, Seminar for First-Year Students. Required for all first-year graduate students. M. Koelle, A. Miranker, and staff.

Molecular Biophysics and Biochemistry 676b/Cell Biology 676b, Responsible Conduct of Research. Designed for students who are beginning to do scientific research. The course seeks to describe some of the basic features of life in contemporary research and some of the personal and professional issues that researchers encounter in their work. Approximately six sessions during the spring term, run in a seminar/discussion format. First-year graduate students are required to attend. L. Regan and staff.

Molecular Biophysics and Biochemistry 700b, Properties of Macromolecules. Solution properties of macromolecules and current topics in biophysics, including electrostatics, hydrodynamics, enzyme kinetics, molecular dynamics, and multiple equilibria. Prerequisites: physical chemistry and biochemistry. L. Regan, E. De La Cruz.

Molecular Biophysics and Biochemistry 701b3, Diffraction Methods. Biological applications of X-ray crystallography, small-angle X-ray, neutron scattering, and cryo-electron microscopy. J. Cabral, V. Unger.

Molecular Biophysics and Biochemistry 701b4, NMR Methods. Basic principles of NMR with emphasis on biological applications in the primary literature. Application areas include structure determination, drug binding, molecular recognition, protein folding, and in vivo metabolism. Prerequisites: physical chemistry and biochemistry. A. Miranker.

Molecular Biophysics and Biochemistry 705a/Genetics 705a, Molecular Genetics of Prokaryotes. Molecular aspects of the storage, replication, evolution, and expression of genetic material in prokaryotes. Prerequisites: previous or concurrent introductory courses in genetics and biochemistry. N. D. F. Grindley, C. Radding, J. Sweasy.

Molecular Biophysics and Biochemistry 710b4/C&MP 710b4, Electron Cryo-Microscopy for Protein Structure Determination. Understanding cellular function requires structural and biochemical studies at an ever-increasing level of complexity. The course is an introduction into the concepts and applications of high-resolution electron cryo-microscopy. This rapidly emerging, new technique is the only tool known to date that allows biological macromolecules to be studied at all levels of resolution ranging from their cellular organization to near atomic detail. V. Unger, F. Sigworth.

Molecular Biophysics and Biochemistry 741a, Structure and Chemistry of Proteins and Nucleic Acids. Selected topics in the structure of proteins and nucleic acids; sequence-dependent interactions between proteins and nucleic acids; chemical modifications of DNA; chemical studies of DNA-binding proteins; catalytic RNA. Prerequisite: biochemistry. T. Steitz, D. Söll.

Molecular Biophysics and Biochemistry 743b/Genetics 743b, Molecular Genetics of Eukaryotes. Selected topics in regulation of gene expression, genome structure and evolution, signal transduction, and cellular physiology, development, and carcinogenesis. Prerequisite: biochemistry or permission of the instructor. M. Hochstrasser, A. Koleske.

Molecular Biophysics and Biochemistry 749a/Genetics 749a, Medical Impact of Basic Science. Consideration of examples of recent discoveries in basic science that have elucidated the molecular origins of disease or that have suggested new therapies for disease. Emphasis is placed on the fundamental principles on which these advances rely. Reading is from the primary scientific and medical literature, with emphasis on developing the ability to read this literature critically. Aimed primarily at undergraduates. Prerequisite: MB&B 600a/601b or permission of the instructor. J. Steitz, M. Hochstrasser, A. Miranker, and staff.

Molecular Biophysics and Biochemistry 750a2, Biological Membranes. Biological membranes and their resident proteins are essential for cellular function; yet comparatively little is known about their structure and dynamics. This module serves as a brief introduction to the biochemistry and biophysics of lipids, lipid bilayers, and lipid-derived second messengers. In addition, structural as well as functional aspects of the different classes of membrane proteins are discussed along with an outline of experimental approaches used to achieve an understanding of membrane protein structure and function at a molecular level. V. Unger, L. Heginbotham, D. Engelman.

Molecular Biophysics and Biochemistry 752a/MCDB 752a, Genomics and Bioinformatics. Genomics describes the determination of the nucleotide sequence and many further analyses to discover functional and structural information on all the genes of an organism. Topics include the methods and results of functional and structural gene analysis on a genome-wide scale as well as a discussion of the implications of this research. Bioinformatics describes the computational analysis of genomes and macromolecular structures on a large scale. Topics include sequence alignment, biological database design, comparative genomics, geometric analysis of protein structure, and macromolecular simulation. Prerequisites: EEB 122b and Math 115, or permission of the instructor. D. Söll, M. Gerstein, M. Snyder.

[Molecular Biophysics and Biochemistry 800a, Molecular Mechanisms of Disease. This course describes selected medical applications of recent findings in the biochemical properties of biomolecules and their interactions. Not offered in 2002–2003.]

Molecular Biophysics and Biochemistry 900a or 901b, Reading Course in Biophysics. Directed reading course in biophysics. Term paper required. To be arranged with faculty.

Molecular Biophysics and Biochemistry 902a or 903b, Reading Course in Molecular Genetics. Directed reading course in molecular genetics. Term paper required. To be arranged with faculty.

Molecular Biophysics and Biochemistry 904a or 905b, Reading Course in Biochemistry. Directed reading course in biochemistry. Term paper required. To be arranged with faculty.

NEUROBIOLOGY

Office: SHM C300, 785.4323

Professors

C. J. Barnstable (*Ophthalmology and Visual Science*), B. S. Bunney (*Psychiatry*), N. W. Daw (*Ophthalmology and Visual Science*), P. S. Goldman-Rakic, C. Greer (*Neurosurgery*), S. Hockfield (*Dean, Graduate School*), J. Kocsis (*Neurology*), R. H. LaMotte (*Anesthesiology*), C. Leranth (*Obstetrics and Gynecology*), D. A. McCormick, P. Rakic (*Chair*), J. Santos-Sacchi (*Surgery*), I. R. Schwartz (*Surgery*), G. M. Shepherd, S. Strittmatter (*Neurology*), S. G. Waxman (*Neurology*)

Associate Professors

M. Alreja (*Psychiatry*), A. Arnsten (*Director of Graduate Studies*), C. Bruce, N. de Lanerolle (*Neurosurgery*), T. Horvath (*Obstetrics and Gynecology*), T. Hughes (*Ophthalmology and Visual Science*), B. Moghaddam (*Psychiatry*), M. Picciotto (*Psychiatry*), A. Roe, M. L. Schwartz (*Director of Medical Studies*), F. Vaccarino (*Child Study Center*)

Assistant Professors

H. Blumenfeld (*Neurology*), W. Chen, M. Donoghue Velleca, R. Fitzsimonds (*Cellular and Molecular Physiology*), M. Laubach (*J. B. Pierce Laboratory*), D. Navaratnam (*Neurology*), V. Pieribone (*Cellular and Molecular Physiology*), N. Sestan, N. Tian (*Ophthalmology and Visual Science*), M. Yeckel

Research Scientist

L. D. Selemón

Associate Research Scientists

S. Antic, H. Friedman, W. Gao, S. Gary, V. Gazula (*Neurology*), M. Ma, R. Matthews, E. Sybirska

Postdoctoral Associates & Fellows

B. Berechid, J. Bergsman, C. Broberger, L. Chen, C. Crasto, M. Dino, A. Duque, J. Fitzpatrick, C. Gandhi, V. Gluncic, X. Grosmaître, B. Heider, S. Janusonis, F. Jia, S. Kolk, T. Koos, U. Kraushaar, H. Lu, E. Markakis, T. Morse, I. Opris, C. Paspalas, M. Sarkisian, Y. Shu, M. Viapiano, M. Wang, Y. Wang, A. Xia, W. Xiong, S. Zeng, Z. Zhou

Neurobiology 500b/Neuroscience 510b, Structural and Functional Organization of the Human Nervous System.

An integrative overview of the structure and function of the human brain as it pertains to major neurological and psychiatric disorders. Neuroanatomy, neurophysiology, and clinical correlations are interrelated to provide essential background in the neurosciences. Lectures in neurocytology and neuroanatomy survey neuronal organization in the human brain, with emphasis on long fiber tracts related to clinical neurology. Weekly three-hour laboratory sessions devoted to neuroanatomy in which students dissect the human brain and examine histological sections in close collaboration with faculty members. Lectures in neurophysiology cover various aspects of neural function at the cellular level, with a strong emphasis on the mammalian nervous system. Each student may participate in a weekly physiology conference with a

faculty member, covering such topics as vision, sensory physiology, motor systems, simple nervous systems, or general neurophysiology. Clinical correlations consist of five sessions given by one or two faculty members representing both basic and clinical sciences. These sessions relate neurological symptoms to cellular processes in various diseases of the brain. Variable class schedule; contact course instructor. P. Rakic, M. Schwartz, and staff of the Department of Neurobiology with participation of the departments of Anesthesiology, Neurology, Neurosurgery, Physiology, and Psychiatry.

Neurobiology 501a/Neuroscience 501a, Principles of Neuroscience. A lecture survey course given jointly by the faculty of the Yale Interdepartmental Graduate Program in Neuroscience as the introductory core course for this program. Each lecture attempts to elucidate a major principle of nervous system development, structure, or function. The lectures are arranged in a sequence of five sections: cellular and molecular neurobiology, neurotransmitters and neuromodulators, development, neural systems, and neural basis of behavior. Topics include molecular structure of ion channels, single channel recording and monoclonal antibodies; synaptic transmission, second-messengers and neuropeptides; synaptogenesis; functional organization of the visual, somatosensory, and olfactory systems; and the cellular basis of behavior, including learning and memory. A short paper is required in each of the five main sections. M. Picciotto, R. Fitzsimonds.

Neurobiology 502a, Structure and Function of Neocortex. This seminar/lecture course covers anatomical, biochemical, and physiological organization of selected sensory, motor, and association regions of cortex. Sample topics discussed include development, evolution of multiple representations, columnar organization, and plasticity of neocortex. Permission of instructor required. P. S. Goldman-Rakic.

[**Neurobiology 507b/Neurology 108b/Neuroscience 507b, Cellular and Molecular Mechanisms of Neurologic Disease.** Molecular and cellular neuroscience has recently developed many novel and powerful techniques for understanding nervous system function. The course focuses on how these basic science advances have been translated into breakthroughs in clinical neurology. Lectures illustrate the connection of modern laboratory studies to our understanding of pathophysiologic mechanisms, to the development of diagnostic tests, and to the use of novel treatment modalities. S. Strittmatter, S. Waxman. Next offered in 2003–2004.]

[**Neurobiology 509b/Neuroscience 539b, Synaptic Organization of the Nervous System.** Introduction to principles of neural circuit organization at the cellular level (morphology, physiology, and pharmacology). Emphasis is on mammalian systems and comparisons with lower vertebrates and invertebrates. Permission of instructor required. G. Shepherd. Next offered in 2003–2004.]

Neurobiology 510, Introduction to Methods in Cellular and Molecular Neurobiology. Firsthand insight into various techniques and approaches used in neuroscience. Light microscopic techniques include various metallic impregnation methods, autoradiography, anterograde and retrograde axonal transport methods, hybridoma and recombinant DNA technology, deoxyglucose metabolic method, fluorescent and immunocytochemical methods. Electron microscopy encompasses transmission, electronmicroscopic autoradiography, and immunoperoxidase methodology. Choice of techniques and hours to be arranged with individual faculty or staff members of the Department of Neurobiology.

Neurobiology 511, Introduction to Techniques Used in Electrophysiological Analysis at the Cellular Level. Includes practical training in *in vivo* and *in vitro* nervous system preparations, extracellular and intracellular recordings, sensory stimulation,

dye injections, and selected neuropharmacological procedures. Choice of techniques and hours to be arranged with individual faculty or staff members of the Department of Neurobiology.

[Neurobiology 520a, Vision: Cellular and Network Dynamics of the Cerebral Cortex. This class explores the mechanisms of cerebral cortical function through the eyes of the visual cortex. The course covers the cellular and synaptic properties of cortical neurons and circuits and the theoretical and experimental mechanism by which cortical neurons analyze the visual scene, including higher order visual processes such as the analysis of color, contours, depth, motion, and mechanisms of attention and visual memory. A. Roe. Next offered in 2003–2004.]

[Neurobiology 524a/Neuroscience 514a, The Regulation of Cell Fate During CNS Development. This course is intended to discuss the general mechanisms that regulate cell fate during the development of the central nervous system. It focuses on the progressive specialization of cellular function beginning with the establishment of CNS polarity, the acquisition of regional identity, and the determination of the fate of neural cells within the CNS. The interactions between evolutionary conserved genes and intercellular signaling systems are emphasized. The course meets twice a week for one hour each time. Each week covers one topic as detailed in the syllabus. On Wednesday, general concepts are reviewed in a seminar format, led by the course director, faculty participants, or invited speakers. On Fridays, one or two papers presented by students are discussed in detail. All class members are invited to participate in the paper presentation and discussion. F. M. Vaccarino. Next offered in 2003–2004.]

[Neurobiology 530b, Neurobiology of Schizophrenia. Schizophrenia is a debilitating disorder of thought and affect with unknown etiology. In this course, research findings from basic and clinical venues are discussed to provide an overview of the current state of our knowledge about the pathophysiology of this disease and treatment strategies. The course consists of didactic lectures and student-led discussion of key research papers that focus on morphological, developmental, and genetic abnormalities that are suspected to occur in schizophrenia, as well as the utility of various animal models for improving clinical treatment. B. Moghaddam. Next offered in 2003–2004.]

[Neurobiology 550/Neuroscience 550, Introduction to Neuroinformatics. Introduction to applications of bioinformatics to the functional analysis of genes, proteins, cells, and circuits in the nervous system. Emphasis is on understanding basic principles underlying the informatics approach to building tools and databases for analyzing complex neural data, using SenseLab as a model. G. Shepherd, P. Miller, and staff. Next offered in 2003–2004.]

Neurobiology 560/Neuroscience 560, Genomics and Proteomics of the Nervous System. Introduction to applications of microarray data to generating patterns of gene expression in specific cell types within different brain regions, and to analyzing the cellular functions of gene products in different neuronal compartments. Advanced tutorial course, using interactive Web-based tools. G. Shepherd and staff.

[Neurobiology 570a/Neuroscience 570a, Cellular and Network Dynamics of Sensory and Motor Functions. This course examines the circuitry and functioning of sensorimotor systems, particularly visual and oculomotor, with emphasis on data gathered from single neuron recording and functional imaging in the primate neocortex. Cortical mechanisms of perception, memory, decision making, and motor initiation are considered. Format emphasizes informal presentation, analysis, and criticism of important and recent papers in the field. Prerequisite: Neurobiology 500b. C. Bruce and faculty. Next offered in 2003–2004.]

Neurobiology 601, Topics in Olfactory Physiology. Advanced tutorial course. G. Shepherd.

Neurobiology 610b, Fundamentals in Neurophysiology. This course is designed for students who wish to gain a theoretical and practical knowledge of modern neurophysiology. Graduate students specializing in neurophysiology and non-neurophysiology are encouraged to attend, as the course begins at a very basic level and progresses to more complicated topics. Topics include properties of ion channels, firing properties of neurons, synaptic transmission, and neurophysiology methodology. V. Pieribone, F. Sigworth.

Neurobiology 720a/MCDB 720a/Neuroscience 720a, Neurobiology. Examination of the excitability of the nerve cell membrane provides a starting point for the study of molecular, cellular, and intracellular mechanisms underlying the generation and control of behavior. H. Keshishian, P. Forscher.

NEUROLOGY

Office: LCI 708, 785.5947

Professors

T. Allison (*Emeritus*), J. Booss, M. B. Bracken (*Epidemiology and Public Health*), L. M. Brass, G. H. Glaser (*Emeritus*), P. Goldman-Rakic (*Neurobiology*), J. D. Kocsis (*Director of Postdoctoral Studies*), R. H. Mattson (*Director of Medical Studies*), W. I. McDonald (*Adjunct*), L. R. Ment (*Pediatrics*), J. W. Prichard (*Emeritus*), P. Rakic (*Chair, Neurobiology*), B. A. Shaywitz (*Pediatrics*), S. S. Spencer, P. Strittmatter (*Visiting*), S. M. Strittmatter, S. G. Waxman (*Chair*)

Associate Professors

R. B. Duckrow, J. M. Goldstein, R. D. Kerns (*Psychiatry*), E. Novotny (*Pediatrics*), O. A. C. Petroff, G. B. Richerson (*Director, Neurology Residency Program*)

Assistant Professors

J. Baehring, H. Blumenfeld, M. Carrithers, T. Cummins, M. Gorman, F. Hisama, S. Markovic-Plese, D. Navaratnam, S. Novella, H. Patwa, M. A. Rizzo, P. K. Stys (*Visiting*), D. Tkeshelashvili

Instructors

M. Chen, E. Fertig, D. Jaeger, S. Ro

Research Scientists

J. A. Black, M. Craner (*Visiting*), S. Dib-Hajj

Associate Research Scientists

S. Agulian, Y. Akiyama, L. Errante, A. Fournier, O. Hadjimichael, K. Lankford, B. Liu, C. Livsey (*Neurosurgery*), A. Lo, J. Preiningerova, M. Renganathan, A. Rush, A. Szekely, W. Wang, Y.-M. Wu, H. Zaveri

Clinical Professors

T. N. Byrne, R. L. Lesser (*Ophthalmology and Visual Science*), L. Levy, S. Levy (*Pediatrics*), T. J. Walsh (*Ophthalmology and Visual Science*)

Associate Clinical Professors

R. C. Delaney, J. C. Moench, K. N. Sena, F. Testa (*Pediatrics*), R. S. Young (*Pediatrics*)

Assistant Clinical Professors

A. R. Bobowick, S. L. Bridgers II, J. B. Butler, W. A. Camp, J. B. Guarnaccia, B. B. Haak, M. Hasbani, A. Katz, M. W. Kremenitzer, J. H. Mashman, J. C. McVeety, R. A. Noveley, A. M. Rapoport, D. S. Russell (*Psychiatry*), M. J. Stransky, S. Tepper, J. S. Tucker, N. Werdiger

Clinical Instructors

T. E. Conley, R. P. Einbinder, M. Eisa, B. Greenspan, D. J. Shiling, I. Silverman, D. Story, K. Taylor, M. Tolar, E. S. Tucker, P. Wade, D. Wirz

Postdoctoral Fellows

C. Bradley, B. Hains, Y. Kataoka, L. Paige, C. Saab, D. Tinklepaugh, H. A. Tokuno, B. Wu

Postdoctoral Associates

T. Grandpre, J. K. Lee, S. Li, A. McGee, H. Nersesyan, S. Rajagopalan, B. Shah, K. Tanabe, P. K. Tekumalla, H. Togashi

Lecturers

O. Avitzur, L. Bangalore, O. Hommo, T. Imaizumi, F. Richardson, V. Shen

Neurology 102, Clinical Neuroscience Core Clerkship. The primary goal of this four-week clinical clerkship is to provide students with a fundamental approach to the nervous system. Specifically, this means the history, examination, diagnostic imaging, and treatment in the context of specific patients. Additionally, there is a series of lectures covering the broad range of conditions students are likely to encounter, such as trauma, stroke, infections, tumors, dementias, and seizures. Students take call with neurology residents once a week at Yale-New Haven Hospital; students assigned to neurosurgery take call with the residents on that service. An ophthalmology component is integrated into the clerkship. Students meet twice during the clerkship for basic ophthalmology lectures and demonstrations, have opportunity once during the clerkship to examine patients in clinic, and have an option to take call with an ophthalmology resident. After having given input on their preferences, students are placed on one of the following Y-NHH services for their clerkships: adult inpatient neurology, adult neurology consultation service, pediatric neurology, neurosurgery, or a rotation consisting of all outpatient clinics. An adult neurology rotation is also offered at the Veterans Affairs Connecticut Health Care System, West Haven. There are only two or occasionally three students assigned to each service, except pediatric neurology, which is limited to one student. All rotations are done at Y-NHH or the Veterans Affairs Connecticut Health Care System, West Haven, unless special or unusual circumstances justify taking the course at some other academic institution. H. Patwa, L. Ment, C. Duncan, P. Gloor.

Neurology 103, Clinical Neurology Elective. Assignments for the clinical neurology elective are to the Y-NHH neurology consultation service, a rotation consisting of all outpatient clinics; or to the neurology consultation service at the Veterans Affairs Connecticut Health Care System, West Haven. Four-week blocks coinciding with clerkship dates are preferred, but scheduling of electives is somewhat flexible. Students are able to request a choice, but assignment is made to assure that there is a balanced distribution between students in the required Neuroscience Clerkship and those doing electives, in order to allow an optimal learning experience for all students. Students work directly with attending faculty, chief residents, and junior residents as well as other medical students, rotators, and support staff. In addition to in-hospital patient evaluation and care, students on a consultation service are assigned to outpatient clinics. The students participate in departmental conferences and seminars. In addition, participation in most of the activities of the required Neuroscience Clerkship (e.g., didactic lectures, ophthalmology) is encouraged (see Neurology 102 for description of clerkship details). The department is receptive to other specially tailored programs in areas such as epilepsy, stroke, movement disorders, neuroimmunology, etc., as well as clinical neurophysiology and research methods. H. Patwa and associates.

Neurology 104, Clinical Neurology Subinternship. Under appropriate supervision, students directly examine, diagnose, and manage patients on the neurology services at

Yale-New Haven Hospital or Veterans Affairs Connecticut Health Care System, West Haven, and attend daily teaching rounds and conferences. Hours to be arranged. Four-week rotations are recommended; alternative services are possible. Limited to two students each period, usually one on each service. H. Patwa and associates.

Neurology 106b, Clinical Neurophysiology. Seminars and demonstrations in clinical applications of neurophysiology: electromyography and electroencephalography. Basic electronics are taught along with standard practice of recording and interpreting neurophysiology studies. J. M. Goldstein, H. Patwa, S. P. Novella.

[**Neurology 108b/Neurobiology 507b/Neuroscience 507b, Cellular and Molecular Mechanisms of Neurologic Disease.** Molecular and cellular neuroscience has recently developed many novel and powerful techniques for understanding nervous system function. This course focuses on how these basic science advances have been translated into breakthroughs in clinical neurology. Lectures illustrate the connection of modern laboratory studies to our understanding of pathophysiologic mechanisms, to the development of diagnostic tests, and to the use of novel treatment modalities. S. Strittmatter, S. Waxman. Next offered in 2003–2004.]

Neurology 112b, Neuro-Oncology. Neurological complications occur in approximately 20 percent of hospitalized oncology patients. The neurological complications of systemic cancer, as well as of primary CNS tumors, are discussed in depth. Issues regarding diagnosis and management of metastatic disease involving the nervous system as well as treatment-related complications are reviewed. In addition, metabolic and vascular disturbances and infections unique to the oncology patient that involve the nervous system are discussed. Specific cases are presented and arrangements are made to see specific patients during the elective period. This course is offered every three weeks with two lectures each week and is limited to three or four students per session. T. N. Byrne.

Neurology 114b, Physiology of the Mammalian Nervous System. The overall objective of this laboratory course is to introduce the student by hands-on experience to a variety of cellular electrophysiological techniques used in the study of the mammalian nervous system. Students set up a small electrophysiology laboratory and carry out experiments with the supervision of faculty. Laboratories include sucrose gap in whole nerve, single microelectrode current and voltage clamp recording of sensory neurons, field potential studies in rat hippocampal slice, and patch clamp analysis of cultured neurons. This course is limited to six to eight students. Permission of instructor is required for enrollment, 203.937.3802. J. D. Kocsis.

NEUROSURGERY

Office: TMP 4, 785.2805

Professors

R. Bronen (*Diagnostic Radiology*), W. F. Collins, Jr. (*Emeritus*), C. C. Duncan, C. A. Greer, C. LaMotte, J. Persing (*Surgery/Plastic*), J. M. Piepmeier, D. E. Redmond (*Psychiatry*), D. D. Spencer (*Chair*), A. Van den Pol

Associate Professors

R. T. Constable (*Diagnostic Radiology*), N. de Lanerolle, A. C. de Lotbinière, R. B. Duckrow (*Neurology*), K. J. Ruskin (*Anesthesiology*), M. Westerveld, A. Williamson

Assistant Professors

J. M. Baehring (*Neurology*), J. Bartolomei, A. Bordey, V. Chiang, M. J. Gorman (*Neurology*), M. Gunel, K. Stoddard, J. Strugar, K. Vives

Associate Research Scientists

T. Eid, X.-B. Gao, P. K. Ghosh, C. Livsey, H. Treloar, K. Wu

Visiting Research Scientists

H. Hetherington, J. Pan

Research Affiliate

J. Pizzonia

Clinical Professors

L. M. Davey, F. Robinson

Associate Clinical Professors

I. Goodrich, D. E. Nijensohn

Assistant Clinical Professors

T. J. Arkins, G. M. Bloomgarden, P. S. Dickey, Z. Ghogawala, E. Kornel, T. Larsen, C. W. Needham, J. K. Sabshin, J. Stern

Clinical Instructors

E. Akeyson, A. Firlik

Postdoctoral Associates

H. Huang, Y. Li

Postdoctoral Fellows

J. Alvarez-Carriles, S. M. Amarasingha, A. Cohen-Gadol, C. Iwema, K. Mishra, M. Noha

Lecturer

E. M. Ogle

Neurosurgery 101, Neurological Surgery. This is an externship in which the student is involved in inpatient evaluation, outpatient visits, supervised emergency and inpatient consultations. The student attends the operating room, follows patients, and is expected to correlate the clinical experience with basic neuroscience. J. Bartolomei, V. Chiang, W. F. Collins, A. de Lotbinière, C. C. Duncan, M. Gunel, J. M. Piepmeier, D. D. Spencer, J. Strugar.

Neurosurgery 102, Experimental Neurological Surgery. Typically taken during completion of the thesis requirement. Specific projects are by agreement with faculty members. Ongoing laboratory research includes: the molecular neuroanatomical assessment of the epileptic focus (N. C. de Lanerolle); ultrastructural assessment of organization and plasticity in local synaptic networks (C. A. Greer); the distribution and specificity of membrane-bound proteins directing neuronal growth (A. Van den Pol); glial cell function at synapses; intercellular communication promoting neurogenesis (A. Bordey); human and animal slice electrophysiology (A. Williamson, A. Bordey); human and animal intracerebral microdialysis (D. Spencer, I. Cavus); image-guided neurosurgical robotics and biophysical studies of brain imaging (D. Spencer, J. Duncan); molecular genetics of neurological disease (M. Gunel); role of the gene Notch in neoplastic CNS tumors (K. Vives); characterization of ensheathing cells in promoting axonal elongation (J. Bartolomei). Clinical research includes neurotrauma (V. Chiang), neuropsychological studies (M. Westerveld, K. Stoddard), spine disease (J. Strugar, J. Bartolomei), epilepsy surgery (D. Spencer), pediatric neurosurgery outcomes (C. Duncan), neuro-oncology (J. Piepmeier), and stereotactic radiosurgery (A. de Lotbinière). Available throughout the year. Arrangements made with C. A. Greer.

OBSTETRICS AND GYNECOLOGY

Office: FMB 339, 785.4002

Professors

A. Arici, H. R. Behrman, M. B. Bracken (*Epidemiology and Public Health*), S. K. Chambers, J. Copel, R. A. Ehrenkrantz (*Pediatrics*), I. Gross (*Pediatrics*), J. Hayslett (*Internal Medicine*), R. B. Hochberg, E. E. Jones, B. M. Kacinski (*Therapeutic Radiology*), E. I. Kohorn (*Emeritus*), C. Leranath, C. J. Lockwood (*Chair*), M. Mahoney (*Genetics*), S. McCarthy (*Diagnostic Radiology*), F. Naftolin (*Molecular, Cellular, and Developmental Biology*), P. M. Sarrel (*Psychiatry; Emeritus*), P. E. Schwartz, K. Taylor (*Diagnostic Radiology*)

Associate Professors

A. J. Duleba, R. Feinberg (*Adjunct*), F. Galerneau, J. Henrich (*Internal Medicine*), T. Horvath, U. Magriples, V. Parkash (*Pathology*), T. Rutherford, E. Sze, H. Taylor, K. Williams

Assistant Professors

S. Diano-Horvath, E. F. Funai, G. Mor, D. Neale, S. M. Richman, D. Sakkas

Instructors

R. Al-Rejjal, M. O. Bahtiyar, R. Benoit, G. Daftary, S. D. Julien, C. B. Kallen, N. Mahutte, P. Matta, D. D. O'Malley, T. Pejovic, V. Ravishankar, E. Seli, M. Small, J. Tangir

Senior Research Scientist

G. Huszar

Research Scientists

H. Kliman, G. Krikun, F. Schatz

Associate Research Scientists

N. Bonafe, E. Borok, M. A. Gilmore-Herbert, D. Labaree, E. Neuber, E. Sapi, J. Song

Research Affiliates

D. Keefe, T. Polcz, D. Seifer, P. Whitten

Clinical Professors

M. Berman, S. Laviertes, V. Lynch, M. Minkin, W. Reguero, S. Spangler, L. Wartel

Associate Clinical Professors

R. Auerbach, H. Blanchette, C. Cassin, R. Cwik, D. Greenfeld, T. Hanson, M. Holley, R. Kaump, W. Lieber, C. McCarthy, L. Olson, J. Silidker, B. Silverman, H. Simon, V. Stuermer, R. Vidone, J. Whetham, L. Zamore

Assistant Clinical Professors

N. Achong-Dorvilus, M. Beatrice, P. Brines, S. Casper, E. Chang, R. Chosak, I. Cohen, P. Coppola, E. Fine, K. Fletcher, D. Fox, G. Foye, M. Gillette, C. Kandall, E.

Karlovsky, J. Karsh, K. Kearns, K. Kharma, J. Knudson, S. Laifer, P. Lamastra, B. Lieberman, E. Luchansky, J. Lyddy, S. Mark (*Internal Medicine*), B. McDowell, L. Plisic, N. Ravski, B. Rigney, S. Roth, R. Stiller, A. Strong, H. Suesserman, E. Topran, T. Zreik

Clinical Instructors

A. Asis, M. Asis, E. Berry, U. Bhuvanesh, A. Chelouche, F. Cohn, S. Fleischman, J. Grosso, C. Huttler, J. Kaczmarek, A. Landry, D. Lima, R. Lubell, B. Maloy, J. McGrade, R. Moscarelli, H. Nusbaum, E. Palluotto, A. Petruzzelli, R. Pringle, K. Rath, M. Rhee, S. Rosenman, A. Ross, D. Roth, R. Samuelson, M. Speranza, J. Stadalnik, A. Tirado, D. Tonzola, M. Tse

Postdoctoral Fellows

V. Abrahams, G. Akbas, V. Edusa, G. Halis, M. Im, D. Izquierdo, M. Senturk, K. Son, S. Taskiran

Postdoctoral Associates

A. Abzaid, M. Berkkanoglu, T. Hajszan, M. Kamsteg-Lemstra, E. G. Kovacs, F. Nastaran, I. Silva, B. J. Tatelon, J. Zhang, Y. Zhou

Lecturers

M. Davis, B. Forbis, N. Kellett, G. Kolin, E. Kuczynski, N. Martina, V. McEvoy, L. Mosley, D. Quealy, M. Reault, T. Santos, E. Shawn, M. Sullivan, C. Szejik, J. Vulte

Obstetrics and Gynecology 103, Core Inpatient Clerkship. This core clerkship is a four-week rotation in which students serve as clinical clerks on both the obstetrics (two weeks) and the gynecology services (two weeks). At our affiliate sites, which include Bridgeport Hospital, Hospital of St. Raphael, and Danbury Hospital, the clerk functions as part of a team that participates in both gynecologic and obstetrical care. During the obstetrics portion of the rotation at Yale-New Haven Hospital, the clinical clerk is assigned to the labor floor and is expected to actively participate in patient care commensurate with his or her experience. Students are expected to work up and follow patients during labor and delivery, write notes during the intrapartum period, participate in the delivery, and participate in the patient's postpartum care. Students on gynecology spend one week on the general gynecology service, where they become familiar with the common disorders encountered in gynecological practice. The student also spends one week on the gynecologic oncology service and functions as a part of that team. The rotation offers a unique opportunity for the student to learn preoperative and postoperative management of patients with complicated medical problems, review pelvic and abdominal anatomy, and become familiar with the basics of major gynecological cancer treatment including surgical management as well as chemotherapy and radiation therapy management. The clerk is expected to interview, examine, and follow patients assigned in rotation. The student is also expected to participate in operative procedures, particularly as relates to those patients that they are responsible for following. E. E. Jones.

Obstetrics and Gynecology 104/Psychiatry 107, Shared Clerkship in Medical Psychiatry. This clerkship, administered jointly with the Department of Psychiatry, is designed to provide students with an understanding of the presentation of psychiatric illness in patients with co-morbid medical disorders. Emphasis is placed on screening

interviews, including mental status examination; identification of symptoms; and differential diagnosis and initial treatment recommendations in patients with co-morbid and psychiatric illness. Special emphasis is placed on evaluation of psychiatric emergencies and competency to make informed medical decisions. R. Rohrbaugh and Department of Psychiatry faculty.

Obstetrics and Gynecology 107, Perinatal Elective. The Maternal Fetal Medicine Division of the Department of Obstetrics and Gynecology offers a three- to four-week high-risk obstetric elective for fourth-year medical students. Ideally, only one student should be on the service at any time. The student is on call with the high-risk chief resident and should come in at least on every third to fourth night to take part in the management of high-risk patients during labor and delivery. The student attends the high-risk obstetric clinics that are held once a week on Thursday. In addition to doing high-risk obstetric rounds with the team and admitting emergency patients, the student is expected to attend perinatal ultrasound sessions that are held every day from 9 A.M. to 4 P.M. There are several rounds for students that include all obstetric rounds held in the department and the daily high-risk obstetric rounds. The evaluation of the student is based primarily on the clinical performance as well as participation at rounds and presentation of cases. J. Copel and staff.

Obstetrics and Gynecology 108, Reproductive Endocrinology and Infertility Elective. A clinical elective in reproductive endocrinology and infertility. Students pursuing this elective gain a basic knowledge of reproductive endocrine function including the physiology of the menstrual cycle and ovulation, male reproductive events, and the physiology of the climacteric and menopause. They also are introduced to disruptions in physiology and function leading to endocrine and infertility problems. Some of the common clinical problems to which students are introduced are polycystic ovarian disease and other symptoms of androgen excess, hyperprolactinemia, anovulatory syndromes, various genetic abnormalities that affect fertility, endometriosis and its sequelae, and tubal disease and its ramifications for surgery. In addition, students are exposed to the new reproductive technology such as in vitro fertilization and the embryo transfer procedure. By the end of the elective, students are expected to be knowledgeable in all of the above areas through both reading and interaction with patients, faculty, and fellows. Suggested reading for the elective is Speroff, Glass, and Kase, *Clinical Gynecologic Endocrinology and Infertility*, 6th edition, Williams and Wilkins, publishers. In addition to being conversant with the above clinical situations, students on elective are expected to see endocrine and infertility patients in the clinic with faculty and fellows. Patients are interviewed and presented to the faculty member working with the students, and the cases are discussed. If appropriate, students also participate in physical examinations. Students are also expected to participate in surgical procedures on endocrine and infertility patients. Students take histories and perform physical examinations on major surgical cases at the time of hospital admission. They are expected to be present in the operating room during the surgery and follow the patients during the postoperative recovery period. Students also have the opportunity to assist in outpatient surgical procedures done in the one-day surgical center and to observe procedures in in vitro fertilization and the embryo transfer program. A full range of conferences and teaching sessions including the Obstetric and Gynecologic Grand Rounds also is available for students participating in the elective. Staff.

Obstetrics and Gynecology 109, Oncology Elective. The purpose of the oncology elective is to enhance the student's knowledge of the diagnosis and management of women with gynecologic malignancies. The elective is offered to one student at a time for three to four weeks. The student is exposed to all modalities of treatment for

gynecologic malignancies including radical gynecological surgery, chemotherapy, and radiation therapy. The student is expected to be an integral part of the team in the management of the patients admitted to the service. The student admits patients and takes part in their care throughout the elective period. The student is assigned to the operating room, especially to assist the patient whom he or she has evaluated. In addition, the student attends one-day surgical procedures to observe the placement of brachytherapy and other procedures, e.g., cystoscopy, proctoscopy examination under anesthesia with biopsy. In the ambulatory setting, the student is exposed to the gestational trophoblastic clinic and the colposcopy clinic. A multiple-discipline tumor conference including faculty members from the divisions of Radiation Oncology and Gynecologic Pathology is held weekly. The student is also expected to attend a weekly gynecologic oncology conference and participate in the discussion. P. E. Schwartz and staff.

OPHTHALMOLOGY AND VISUAL SCIENCE

Office: BB 110, 785.2020

Professors

C. Barnstable, M. Coca-Prados, N. Daw, C. Gonzalez, W. H. Miller (*Emeritus*),
M. L. Sears (*Adjunct*), M. B. Shields (*Chair*)

Associate Professors

T. Hughes, L. J. Rizzolo (*Surgery*), J. Sinard (*Pathology*)

Assistant Professors

R. Adelman, B. DeBroff, S. Forster, Z. Klett, G. Shafranov, S. Tauber, N. Tian,
C. Zeiss (*Comparative Medicine*)

Instructors

K. Bashford, J. Membreno

Associate Research Scientists

S. Ghosh, M. Li, X. F. Wang

Clinical Professors

I. W. Abrahams, A. A. Khodadoust, R. L. Lesser, D. E. Silverstone, T. J. Walsh,
A. S. Wong

Associate Clinical Professors

P. Haffner, A. J. Levada, D. W. Parke, A. D. Rose, K. M. Stoessel, R. A. Wiznia

Assistant Clinical Professors

P. Branden, L. Doctor, J. Elman, P. Falcone, A. J. Fezza, K. Gagnon, S. B. Hersh,
W. Larrison, D. W. MacRae, A. Mead, M. Milner, J. Olson, P. Palmisano, A. D.
Pearlstone, E. A. Petrelli, R. L. Petrelli, A. Romania, C. Sklar, S. M. Soloway, G.
Sweeting, D. Tom, M. L. Weitzman, B. D. Zuckerman

Clinical Instructors

D. Bacal, J. Q. Brooks, S. Castracane, V. DeLuise, A. R. Ecker, P. A. Ecker, P. Guida,
E. Lim, J. Martone, P. Masi, D. Shore, J. Silverman, P. Silverstone, J. Sokol, J. Weisz

Postdoctoral Fellows

M. Abreu, R. Reddy

Postdoctoral Associates

Q. Fischer, Q. He, Y. Li, S. B. Patil, Y. Rao, M. Salvador-Silva, Y. Yang

Ophthalmology and Visual Science 103, Clerkship in Clinical Ophthalmology.

This required clerkship in clinical ophthalmology is given over several afternoons during the Neuroscience Clerkship. The objective of the clerkship is to convey the basic knowledge and examination skills required to diagnose and initiate treatment for common and urgent disorders of the eye and visual system. Instruction is through required readings,

seminars, case study material, a practice examination session, and clinic sessions at either the Yale Department of Ophthalmology and Visual Science, the Veterans Affairs Connecticut Health Care System, West Haven, or a community ophthalmologist's office. S. Forster.

Ophthalmology and Visual Science 120, Elective in Clinical Ophthalmology. This intensive two-to-four-week elective consists of twenty half-day or forty half-day sessions during which the students observe in subspecialty clinics, evaluate patients in general ophthalmology clinics, observe ophthalmic surgery, participate in department conferences, and review independent study material provided by the department. A short presentation on a specific topic provides an opportunity to explore one aspect of ophthalmology in depth. Subspecialty experiences include corneal and external eye diseases, glaucoma, neuro-ophthalmology, oculoplastics, and retinal diseases. Each two-week elective is limited to two fourth-year students. Offered September through May. S. Forster, faculty, and resident staff.

Ophthalmology and Visual Science 126, Preceptorial in Ophthalmology. In this elective the student has intensive exposure to one ophthalmic subspecialty under the direct supervision of one or two faculty members. Generally, the experience includes observing in a subspecialty clinic and the operating room, and may include completion of a minor research project. Prior to starting this elective, the student must have outlined a plan of study and obtained the approval of the supervising faculty members. Faculty members in corneal and external diseases, glaucoma, oculoplastics, and retina participate. A list is available from the director of medical studies. Limited to fourth-year students. One to four weeks. Offered September through June. Faculty.

ORTHOPAEDICS AND REHABILITATION

Office: YPB 133, 785.2579

Professors

R. Baron, G. Friedlaender (*Chair*), C. Gundberg, M. Horowitz, P. Jokl, J. Lawson (*Diagnostic Radiology; Emeritus*), M. Panjabi, R. Pelker, T. Renshaw, W. Southwick (*Emeritus*)

Associate Professors

M. Baumgaertner, J. Cholewicki, L. Katz (*Diagnostic Radiology*), J. Slade, A. Vignery

Assistant Professor

J. Yue

Instructors

M. Dicaprio, C. Dubois, S. Holmes, D. Lindskog, A. Moore

Research Scientist

W. Horne

Associate Research Scientists

A. Bruzzaniti, M. Kacena, A. Sanjay

Research Affiliate

H.-Y. Qian

Clinical Professors

P. Brown, K. Keggi, R. Kramer (*Pediatrics*), J. Lynch, U. Weil

Associate Clinical Professors

H. Bradburn, R. Deponte, R. Johnson, R. Margolis, E. Sella

Assistant Clinical Professors

J. Aversa, A. Axtmayer, R. Bernstein, P. Blume, D. Caminear, J. Daigneault, P. DeLuca, R. Eisen (*Pathology*), D. Gibson, G. Gorecki, J. Irving, J. Kelley, K. Kramer, J. Lieponis, M. Luchini, P. Luchini, R. Mayor, M. Murphy, D. Novicki, T. Patel, M. Pressman, J. Raycroft, A. Reznik, D. Rosenblum, J. Shine, A. Sicklick, M. Silver, J. Sumner, C. Swigart, G. Taggart, J. Wu

Clinical Instructors

C. Barrette, D. Bindelglass, D. Brittis, M. Clain, R. Dawe, R. Diana, A. H. Feldman, J. Grauer, R. Hendrikson, H. Hermele, N. Kaplan, J. Mangieri, J. McCallum, T. Moran, M. Morrison, P. Naiman, J. Perlman, R. Stanton, P. Stovell, C. Wahl

Lecturers

J. Fulkerson, M. Parisi

Orthopaedics and Rehabilitation 102, Surgical Clerkship. Twelve weeks total. Students in the first clinical year spend six weeks on the general surgical service of one of the following: Yale-New Haven Hospital, Veterans Affairs Connecticut Health Care System, West Haven, or Hospital of St. Raphael. Each student is integrated into the clinical team and assigned to specific patients. Responsibilities include taking histories and performing physical examinations on their patients, participating in the evaluation and management of these patients, following patients' progress, and participating as assistants in the surgical operations performed upon their assigned cases. In addition, the students are expected to participate in the evaluation and care of the critically ill patient in the intensive care unit and the injured patient in the emergency room. Emphasis is placed on involving students in the process of clinical problem solving with the guidance of the residents and the attending preceptors. Conferences, case study groups, and rounds are held emphasizing this problem-oriented approach. Staff.

The remaining six-week period is spent as a clinical clerk in the surgical specialties. Seven specialties are offered: cardiothoracic, otolaryngology, neurosurgery, orthopaedics, pediatric, plastic and reconstructive, and urology. Each student elects three of these specialties and spends two weeks on each. While on the specialty of choice, the student is assigned patients in rotation and carries out complete histories, physical examinations, and certain procedures on these patients. While on the orthopaedic service, the student is assigned to one of the subspecialty teams, which include pediatric orthopaedics, spine, joint reconstruction, trauma, oncology, foot and ankle, hand, and sports medicine. The student is expected to participate, whenever possible, in the operative procedures performed on these patients and in their postoperative care. The student is also invited to attend the outpatient clinics in his or her assigned specialty. A series of one-hour lectures, rounds, or demonstrations is given each afternoon by the surgical specialties so that the student has the opportunity of gaining knowledge of the wide field of specialties even though he or she does not participate in every specialty as a clinical clerk. Directed by individual surgical specialty chiefs.

Orthopaedics and Rehabilitation 104, Subinternship. Limited to third- and fourth-clinical years, with prior clerkship rotation. The student is an active member of one of the orthopaedic teaching teams (pediatric orthopaedics, spine, joint reconstruction, trauma, oncology, foot and ankle, hand, and sports medicine). Inpatient, outpatient, and operating room experience is supplemented by regular conferences. Limited to four students, preferably for one-month rotations, throughout the year. Arrangements must be made with Kathryn Umlauf.

Orthopaedics and Rehabilitation 108, Subinternship, Adult Reconstructive and Rehabilitative Orthopaedics, Veterans Affairs Connecticut Health Care System, West Haven. The student functions as the intern on a large adult orthopaedic service. He or she attends conferences at the Veterans Affairs Connecticut Health Care System, West Haven, and at Yale-New Haven Hospital. (Y-NHH conferences include an ongoing seminar on basic sciences as related to the musculoskeletal diseases.) The student is a full participant in the outpatient department and in the work of the operating room. This subinternship offers an intensive clinical experience with a variety of complex orthopaedic reconstructive problems. Rotations are usually for one month. By arrangement with Kathryn Umlauf.

Orthopaedics and Rehabilitation 110, Biomechanics Terminology. Presentation and explanation of some basic biochemical terms used to describe body tissues, structures, and functions. More than one hundred basic engineering terms are introduced. The format of presentation for each term is (1) a precise definition followed by units of measurement in the new S.I. system, (2) a detailed explanation, and (3) examples of its use

in the everyday experience as well as in the medical field. Mathematical formations are presented whenever necessary. Eight weeks, by arrangement. M. Panjabi.

Orthopaedics and Rehabilitation 116, Basics of (Fracture) Diagnosis and Treatment. A six-week seminar in the basic elements of diagnosis and treatment of a spectrum of musculoskeletal trauma. M. Baumgaertner.

Orthopaedics and Rehabilitation 118, Musculoskeletal Anatomy. The basics of musculoskeletal anatomy from a functional anatomic and surgical perspective. The material is presented using prosected specimens. Knowledge of Anatomy 100a or its equivalent is assumed. M. Baumgaertner.

Orthopaedics and Rehabilitation 120, Rehabilitation Medicine at Gaylord Hospital. A four-week elective rotation designed to provide a comprehensive view of rehabilitation. The elective is composed of didactic sessions and clinical experiences in both the inpatient and outpatient setting. Areas of primary focus include spinal cord injury, head trauma, multiple trauma, amputations, pain management, occupational rehabilitation, stroke, and other neurologic rehabilitation. Specific problems, such as gait deviation, heterotopic ossification, and spasticity are addressed. Therapeutic modalities — bracing and other durable medical equipment — are covered. The roles of allied health professionals, including physical, occupational, and speech therapies, and neuropsychology are demonstrated. Available throughout the year by arrangement with A. Sicklick and D. Rosenblum.

PATHOLOGY

Office: LH 108, 785.2759

Professors

P. W. Askenase (*Internal Medicine*), D. Carter, Y. Choi (*Co-Vice Chair*), J. Costa (*Co-Vice Chair*), S. E. Downing (*Emeritus*), S. D. Flynn, N. Holbrook (*Internal Medicine*), **L. S. Kaplow (*Emeritus*)**, M. Kashgarian, J. H. Kim, P. Lizardi, J. A. Madri (*Director of Medical Studies*), V. T. Marchesi, M. Mooseker (*Molecular, Cellular, and Developmental Biology*), J. S. Morrow (*Chair*), J. S. Pober, J. K. Rose, D. F. Stern (*Director of Graduate Studies*), R. Yesner (*Emeritus*)

Associate Professors

E. Glusac, R. Homer, D. Krause (*Laboratory Medicine*), J. M. McNiff (*Dermatology*), V. Parkash, A. Perkins, M. Reyes-Mugica, D. Rimm, M. Robert, J. Sinar, G. Tallini, W. Zheng

Assistant Professors

S. Bannykh, M. Chacho, L. Hao, P. Hui, D. Jain, D. Kowalski, R. Lazova (*Dermatology*), I. Ocal, M. Pinto, P. Ravichandran

Instructor

P. Shukla

Research Scientists

J. Brandsma (*Comparative Medicine*), C. Howe

Associate Research Scientists

P. Biswas, R. Camp, G. Chatterjee, J. Czyzyk, D. Dillon, X.-Y. Fu, N. Kirkiles-Smith, L. Madge, K. Mahboubi, M. Mattie, D. Pradhan, N. Rose, M. Stankewich, Z. Walther, T. Welte, B. Yatsula, S. Zhang, Z. Zhang

Research Affiliates

S. Glantz-Tuschman, B. Xie

Clinical Professors

G. L. Davis, D. M. Lowell, G. Reynoso

Associate Clinical Professors

R. S. Beckett, N. E. Herrera, P. B. Hukill, S. H. Lee, D. F. Miller, I. Nash (*Laboratory Medicine*), D. J. Nelligan, R. A. Vidone (*Obstetrics and Gynecology*), I. M. Weisbrot

Assistant Clinical Professors

H. W. Carver II, T. E. Ciesielski, E. M. Clayton, M. T. Cronin, R. Eisen, P. Fiedler (*Laboratory Medicine*), N. Gelfman, G. Golenwsky, D. Graesser, I. S. Hahn, G. M. Kleinman, R. M. Kranwinkel, V. Lopez, D. MacRae (*Ophthalmology and Visual Science*)

Clinical Instructors

W. G. Frederick, A. Katsnelson, S. Wain

Postdoctoral Associates

C. Cianci, A. D'Alessio, J. Esparza, A. Jackson-Fisher, Q. Gao, S. Husain, H. Kim, J. Lage, J. H. Li, M. Liu, A. McCabe, O. L. Mironenko, A. Moh, K. Okuma, G. Reshetnikova, M. Schwartz, D. P. Tuck, Y.-Y. Xiao, X. Xu, S. S. B. Yu, J. Zhang, S. Zhang

Postdoctoral Fellows

C. Angeletti, K. Boyd, G. Brandao, S. Liang, T. Manes, E. Ramsburg-Vratsanos, A. Riba, Z. Senturk, S. Tandon, P. Tang, N. Torpay, L. Tsvetkov, F. Vavzanen, M. Wolfgang, X. Xu

Pathology 100, Pathological Basis of Human Disease. Fundamental principles underlying the pathological alterations in function and structure that constitute the reaction of the organism to injury. Pathology of diseases involving special organs and systems. Correlation of the clinical and anatomical manifestations is emphasized. J. Madri, S. Flynn, and staff.

Pathology 116, Autopsy Pathology. Participation in the autopsy service with members of the house staff in pathology. Participation in autopsies and the presentation and review of the clinical and anatomical findings of postmortem examinations with senior members of the department. Opportunities exist for correlation studies with previous biopsies, and clinical investigative and cell biologic techniques in relation to necropsy material. Six weeks minimum, full time. Limited to two students. J. Sinard and staff.

Pathology 117, Anatomic Pathology. The department offers an elective to medical students in the third and fourth years which provides a broad experience in general diagnostic techniques. Students have opportunities to participate in surgical pathology, cytology (including fine-needle aspiration), and autopsy. A daily conference is scheduled for both residents and students. In addition to direct responsibilities in the handling of the cases, the student has the opportunity to apply the special techniques of electron microscopy, immunohistochemistry, flow cytometry, and molecular diagnostics. A minimum of four weeks is suggested for this elective. Five students are accommodated every four to six weeks. J. Costa and staff.

Pathology 650b, Cellular and Molecular Biology of Cancer. A comprehensive survey of cancer research from the cellular to the clinical level. The relation of cancer to intracellular and intercellular regulation of cell proliferation is emphasized, as are animal models for cancer research. Background in molecular genetics and cell biology is assumed. D. F. Stern and A. S. Perkins.

Pathology 670b, Biological Mechanisms of Reaction to Injury. An introduction to human biology and disease as a manifestation of reaction to injury. Topics include organ structure and function, cell injury, circulatory and inflammatory responses, disordered physiology, and neoplasia. M. Kashgarian and staff.

Pathology 680a, Topics in Molecular Medicine. Readings and discussion in topics relevant to cell biology, pharmacology, and molecular medicine. The class emphasizes analysis of the primary research literature and development of presentation skills. D. Krause.

Pathology 690a, Molecular Mechanisms of Diseases. This course focuses on the molecular defects underlying fundamental human diseases. The program covers the cellular and molecular mechanisms of infectious and degenerative diseases, vascular and inflammatory processes, AIDS, and hemorrhagic disorders. The objective is to highlight the interface between experimental and molecular medicine, and how it relates to the pathogenesis of human diseases. V. T. Marchesi.

PEDIATRICS

Office: LMP 4085, 785.4638

Professors

W. A. Andiman, W. R. Anyan, M. D. Baker, R. S. Baltimore, A. Bazyz-Asaad, G. P. Beardsley, W. R. Breg, Jr. (*Genetics; Emeritus*), T. Carpenter, J. A. Copel (*Obstetrics and Gynecology*), T. F. Dolan, Jr. (*Emeritus*), C. C. Duncan (*Neurosurgery*), R. A. Ehrenkranz, M. Genel, S. Goldstein, I. Gross, J. Gryboski (*Emeritus*), A. Horwich (*Genetics*), M. Hostetter, Z. Kain (*Anesthesiology*), D. Kessler, D. M. Komp (*Emeritus*), J. Leckman, M. F. Leonard (*Child Study Center; Emeritus*), J. M. Leventhal, M. Lewis (*Child Study Center; Emeritus*), G. Lister, Jr., M. J. Mahoney (*Genetics*), L. Mayes (*Child Study Center*), P. L. McCarthy, L. R. Ment, I. G. Miller, M. S. Moyer, H. A. Pearson (*Emeritus*), L. K. Pickett (*Surgery; Emeritus*), M. Rogers (*Adjunct*), S. Rooney, D. S. Rowe (*Emeritus*), J. E. Schowalter (*Child Study Center*), J. H. Seashore (*Surgery*), M. R. Seashore (*Genetics*), E. D. Shapiro, B. A. Shaywitz, S. E. Shaywitz, N. J. Siegel, J. Sinclair (*Epidemiology and Public Health; Adjunct*), B. Smith (*Laboratory Medicine*), N. Talner (*Emeritus*), W. V. Tamborlane, R. J. Touloukian (*Surgery*), F. Volkmar (*Child Study Center*), J. Woolston (*Child Study Center*)

Associate Professors

M. Apkon, M. Brueckner, M. Cappello, S. Caprio, D. Donnelly, M. Egan, J. Fahey, B. Forsyth, A. H. Friedman, P. Gallagher, J. Gruen, B. McClain (*Anesthesiology*), E. Novotny, G. Pizzorno (*Internal Medicine*), B. Pober (*Genetics*), M. Reyes-Mugica (*Pathology*), S. Rivkees, L. Rosenfeld (*Internal Medicine*), D. Schonfeld, R. Shiffman, J. Van Hoff, M. Westerveld (*Neurosurgery*), Y. Xia

Assistant Professors

R. Antaya (*Dermatology*), L. Arnold, K. Banasiak, C. Baum, K. Bechtel, P. Bowers, J. Calderon, R. Chapman, E. Colson, L. Denson, S. Escalera, M. Farrell (*Internal Medicine*), A. Golioto, L. Jacobsen (*Psychiatry*), J. Kahn, C. Kim, J. Klig, P. Leith (*Anesthesiology*), R. Palazzo, K. Santucci, B. Sleight, C. Snyder, J. M. Stein (*Internal Medicine*), S. Weinzimer, C. Weitzman

Instructors

A. Coughlin, J. Levine

Research Scientists

J. McGrath (*Comparative Medicine*), K. Pugh

Associate Research Scientists

V. Bhandari, D. Bockenbauer, C. Bogue, M. Butler, B. Chen, J. Dziura, S. Frankel, K. Freudigman, R. Fuleihan, M. Gaeta, N. Kadan-Lottick, W. D. Kennedy (*Molecular Biophysics and Biochemistry*), K. Marchione, J. McKinney, W. Mencl, E. Pinter, G. Porter, K. Schneider, S. Smith, C. Turner, M. Vazquez, H. Yan, P. Zhang, Z. Zhao

Research Affiliate

E. Kennedy

Clinical Professors

M. Curnen (*Epidemiology and Public Health*), J. R. Gallagher (*Emeritus*), P. S. Goldstein, H. Jacobs, T. Kennedy, D. Kohn (*Surgery*), R. A. Kramer, L. S. Krassner, M. Kresch, R. G. LaCamera, S. Levy, B. M. McDonald, J. McNamara, A. C. Mermann, H. Sacks (*Child Study Center*), M. Sklaire, M. A. Wessel, J. Zelson

Associate Clinical Professors

F. P. Anderson, R. Angoff, D. Beardsley, A. S. Beasley, K. Berkwitz, J. Blanton, S. Boltax-Stern (*Child Study Center*), H. D. Bornstein, Jr., K. A. Bradford, M. Browne, C. Canny, R. Chessin, S. Danoff, M. Engel, J. Federico, J. B. Ferholt (*Child Study Center*), J. D. Ferholt, H. D. Fink, T. Flynn, J. Fong, R. Freedman, C. Goff, H. Goldenring, F. L. Gruskay, J. Gundy, J. Hen, Jr., R. Herzlinger, A. Jamshidi, L. S. McIntosh, M. Mercurio, S. Nallainathan, C. R. Palm, C. Randolph, R. Shelling, E. L. Stone, F. Testa, R. Young

Assistant Clinical Professors

R. J. Anderson, C. Aten, A. J. Avni-Singer, R. Berning, A. Bhargava, R. M. Biondi, S. Boulware, N. Brown, J. Burger, C. Butler, D. Cheromcha, J. Combs, N. Condulis, N. Czarkowski, P. Czuczka, N. Deleuchtenberg, S. Dibs, C. Dorfman, D. Durante, G. Dworkin, A. R. Enriquez, T. Etkin, P. Fadakar, K. Fearn, C. A. Fischbein, M. Galal, G. Germain, E. H. Gleich, A. J. Grant, G. W. Grundy, J. Gruskay, R. Halperin, J. Hamilton (*Social Work*), J. Harper, R. Hobbie, M. Hommell, M. Ikeda, S. Iragorri, W. D. Irving, R. Johnson, L. Kass, O. H. Lascano, L. Lasley, S. Lavietes (*Social Work*), M. Lee, D. Lowell, C. Mann, E. Marmer, C. McEvoy, A. Meyers, J. Morgan, C. Morrison, M. Pardi, A. Perez, S. Peterec, H. Pierce, M. Robert, H. Romanowitz, M. Sanyal, R. Scalettar, N. Schamban, G. Schare, M. Schneider, C. Scott, L. Semeraro, L. Shader, R. Shea, M. Siev, W. Silberberg, M. Silverman, S. Spiesel, C. Stone, C. Summers, S. Theofanidis, S. Tsalbins, J. Tuggle III, S. Updegrove, J. Walterspiel, G. Wanerka, J. F. Wedgwood, N. Weinberger, N. Weinstein, P. Weiss, R. F. Whelan, E. Wiesner, R. D. Windom, C. Wood, C. Woods, J. Wynne

Clinical Instructors

R. Adamenko, P. Alvino, J. Anderson, A. Atton (*Dermatology*), S. Baum, L. Berlin, M. Birmingham, M. Brochin, K. Burke, A. Cameron, R. Carroll, J. Cersonsky, M. Dilorenzo, J. Dipisa, A. Dobos, Jr., R. Dorr, D. Dreyfus, A. Driggers, W. Flynn, D. Gallo-Van Ess, G. Ganea, B. Gardner, S. Gardner, G. J. Germano, M. A. Glenn, K. Goldberg, L. Gray, D. Griffin, M. Groth, J. Harwin, A. Hoefler, F. Holmes, D. Idelson, T. V. Jackson, E. James, L. Jayanthi, B. Jubelirer, S. Kayani, H. Kipperman, S. Leib, A. Liebling, D. Lippi, R. Lockhart, J. Lopez, C. Menzies, A. Mrozowski, N. Naran, C. Nicolosi (*Social Work*), M. Pouliout, O. T. Rose, M. Shaw, S. Simon, E. R. Smith, M. P. Smith, E. Springhorn, J. Stein, N. Stein, S. C. Stein, D. Thomas, D. Torres, M. Vincent, L. Waldman, S. Walsh, D. Wisler, A. Wu, J. Young

Postdoctoral Fellows and Associates

S. Adefeyisan, I. Al-Ammouri, S. Bhaduri-McIntosh, A. Benin, M. Bizzarro, R. Bungiro, P. J. Chang, H. Chen, L. Chen, R. Cong, J. Delaney, K. Dorsey, J. Drummond-Lewis, E. J. Edelman, J. Enciso, W. Eppich, F. Esper, A. Esquibies, H. Hallaq, M. Held, E. Hernandez, S. Hong, A. Hsiao, S. Husain, T. Kelly, K. Kevill, J. Khan, H. Kocinsky, A. Kollewe, M. Kim, S. Lakhani, I. Lazar, B. Lechner, K. T. Lee, D. Listman, D. Lu, H. Meng, J. Mieszczanek, J. Moltedo, J. Nedrelow, T. Othman, E. Paintsil, S. Rajan, M. Riordan, J. Ryu, S. Seghal, M. Seli, Y. Senturias, M. Sivasubramaniam, T. Shih, H. Trubel, B. Weeks, S. Weiner, R. Weiss, C. Yeckel, J. Zhang, P. Zhao

Lecturers

C. Cook, E. Drye, K. Feiden, P. Killeen, J. Mande, R. Perl

Pediatrics 103, Third-Year Clerkship. The Pediatric Clerkship consists of four major parts: three different clinical experiences and a core curriculum. One clinical experience is a two-week ambulatory rotation in a primary care setting. Another two-week rotation allows students to join a pediatric subspecialty team or to work in the Pediatric Intensive Care Unit. The third clinical experience consists of a four-week rotation on the inpatient service at the Children's Hospital at Yale-New Haven or at Bridgeport Hospital. One afternoon each week is devoted to pediatric grand rounds and teaching conferences in which the core curriculum is presented. At each venue adequate time is allotted to read about relevant clinical problems, present cases to an attending or resident, and attend didactic or case-review conferences. W. A. Andiman.

Pediatrics 104, Outpatient Clerkship. Students assume responsibility, under supervision, for comprehensive care of children. They evaluate children referred to the clinic with diagnostic problems. Special emphasis is placed on problems related to the ambulatory patient. Senior students only. One student, full time, for three weeks. P. L. McCarthy and staff.

Pediatrics 128, Hematology–Oncology. A survey of the normal and abnormal hematology and the common malignancies of infancy and childhood. Students make initial rounds with the attending and the ward team at 7:30 A.M. The mornings are then spent in clinic seeing outpatients who come for therapy or follow-up. More extended bedside rounds, including time allotted for family discussions, take place in the afternoon. Students are expected to prepare a brief presentation for the team. One student, full time for three or more weeks, throughout the academic year. J. Van Hoff and staff.

Pediatrics 139, Pediatric Neurology. Students participate in the pediatric neurology clinic and the learning disorders unit and see neurology patients on the pediatric wards. Up to two students, full time, for three weeks, throughout the academic year. L. R. Ment, E. Novotny, B. Shaywitz, S. Shaywitz, M. Engel, S. Levy, F. Testa.

Pediatrics 143b/Surgery 136b, Pediatric Surgery. A general survey of pediatric surgical problems based on illustrated case summaries and subject presentation by students, with selected readings from the literature. Limited to six students, first and last six weeks of spring term. Once weekly, time to be arranged. J. H. Seashore, R. J. Touloukian.

Pediatrics 144, Clinical Clerkship in Pediatric Cardiology. Developmental aspects of cardiovascular function as applied to infants and children in both a clinical and a laboratory setting. Students are assigned to various members of the pediatric cardiology staff. Emphasis on physical diagnosis, use of noninvasive methods, and clinical physiologic

correlates. Up to two students every four weeks throughout the year. M. Brueckner, J. Fahey, A. H. Friedman, C. Snyder, P. Bowers, G. Porter.

Pediatrics 146, Clinical Pediatric Infectious Diseases. Students participate in daily consultation rounds, Pediatric AIDS Clinic, and pediatric infectious diseases clinic. Students also participate in pediatric infectious disease rounds by presenting the case studies of one or more inpatients whom they have examined to a group of faculty and fellows. Rounds last approximately two hours (Wednesday morning). Emphasis is placed on correlation of the clinical problem and its practical management with principles of infectious disease epidemiology and clinical microbiology (bacteriology, virology, and parasitology). Limited to two students per three- to six-week period throughout the academic year. W. Andiman, R. Baltimore, M. Cappello, J. Kahn, J. McKinney, G. Miller, G. Shapiro, M. Vazquez.

Pediatrics 148, Pediatric Endocrinology and Metabolism. An extensive exposure to clinical pediatric endocrinology, in particular problems of growth, sexual development, thyroid disorders, and diabetes mellitus and other disorders of carbohydrate metabolism. A full six-week elective includes three weekly general endocrinology clinics, two weekly diabetes clinics, and a hyperlipidemia/obesity clinic, and the inpatient service, generally concentrated in the Children's Clinical Research Center. One student, full-time, six weeks, throughout the academic year. S. Caprio, T. Carpenter, M. Genel, S. Rivkees, W. V. Tamborlane, S. Weinzimer.

Pediatrics 152, Subinternship. Senior students serve as advanced clinical clerks in order to gain experience in providing care to pediatric patients. During the subinternship, students are directly responsible for the care of their assigned patients, under the supervision of resident and attending physicians. Subinternships are served for four-week periods on one of the inpatient teams or in the Pediatric Emergency Department in the Department of Pediatrics at the Children's Hospital at Yale-New Haven. N. J. Siegel and staff.

Pediatrics 153, Pediatric Gastroenterology/Hepatology. A general survey of clinical pediatric gastroenterology and hepatology with particular emphasis on inflammatory bowel disease, malabsorption, diarrheal disorders, nutrition, and liver disease. The elective includes daily inpatient rounds, three weekly clinics, and several weekly clinicopathologic conferences, as well as observation of endoscopic procedures. One student, full-time, three or six weeks, throughout the academic year. C. McEvoy, S. Moyer, T. Denson, S. Escalera.

Pediatrics 154, Pediatric Respiratory Medicine. During the elective, students are exposed to a range of activities in the Section of Respiratory Medicine. These include the evaluation of respiratory and pulmonary function in a variety of disease conditions, and care of infants and children with respiratory diseases such as asthma, cystic fibrosis, bronchopulmonary dysplasia, pneumonia, aspiration syndromes, and obstructive sleep disorders. Emphasis is on physical diagnosis. Rotations through the pulmonary function laboratory and the Children's Sleep Center. Laboratory experience can be arranged. Participation in seminars, journal club, and patient rounds and clinics. Two students, every four weeks, throughout the academic year. A. Bazy-Asaad, M. Egan, R. Palazzo.

Pediatrics 155, Pediatric Emergency Medicine. Senior students have the opportunity to evaluate and manage a broad range of acute pediatric illnesses under direct attending supervision. Participation in daily teaching conferences, "mock" codes, and clinical practice exercises is encouraged. Clinical duties are distributed over five six-hour clinical shifts per week. Up to two students every four weeks, throughout the academic year. A four-week rotation is recommended. M. D. Baker and staff.

PHARMACOLOGY

Office: SHM B204, 785.4372

Professors

G. K. Aghajanian (*Psychiatry*), K. S. Anderson (*Director of Medical Studies*), G. P. Beardsley (*Pediatrics*), H. R. Behrman (*Obstetrics and Gynecology*), B. S. Bunney (*Psychiatry*), E. S. Canellakis (*Emeritus*), Y. C. Cheng, E. Chu (*Internal Medicine*), J. R. Cooper (*Emeritus*), P. S. Dannies, R. S. Duman (*Psychiatry*), B. E. Ehrlich, R. E. Handschumacher (*Emeritus*), L. K. Kaczmarek, E. G. Moczydlowski, A. Nairn (*Psychiatry*), W. H. Prusoff (*Emeritus*), J. M. Ritchie, S. C. Rockwell (*Therapeutic Radiology*), R. H. Roth, Jr. (*Psychiatry*), G. Rudnick (*Vice Chair*), A. C. Sartorelli, J. Schlessinger (*Chair*), W. Sessa (*Director of Graduate Studies*), S. G. Waxman (*Neurology*)

Associate Professors

C. M. Crews (*Molecular, Cellular, and Developmental Biology*), M. P. DiGiovanna (*Internal Medicine*), V. Gribkoff (*Adjunct*), R. Heimer (*Epidemiology and Public Health*), J. Howe, E. Lolis, M. Picciotto (*Psychiatry*), G. Pizzorno (*Internal Medicine*), J. Tallman (*Psychiatry; Adjunct*), T. Verdoorn (*Adjunct*)

Assistant Professors

A. Bennett, Y. Ha, I. Lax

Research Scientists

D. Stagg, Y.-L. Zhu (*Visiting*)

Associate Research Scientists

R. P. Baumann, Jr., S. Bian, M. Bordonaro, H. Gu, K. Ishiguro, D. Johnson, S. Kolli, M.-C. Liu, M.-Z. Luo, S. McKay, E. Murakami, P. Penketh, A. Pivazyan, A. Robert, K. Shyam, G. Sowa, M. Stephan

Research Affiliates

M. Belcourt, W. Gao, K. M. Holtz, Z. Jiang, S.-H. Liu, J. Mei

Postdoctoral Fellows

P. M. Bauer, M. Beckman, J. P. Bingham, K. Chou, G. Crichlow, H. Ding, H.-H. Hsia, W. Joiner, S. Zoellner

Postdoctoral Associates

E. Ackah, A. Bhattacharjee, E. Boadu, R. Desai, V. P. Eswarakumar, J. T. Fontana, L.-Y. Fu, C. Furdui, W. Gao, Y. Gao, W. Hinz, R. Hu, Y. Iwakiri, Y. Kaulin, S. Kolli, P. Krishnan, W. Lam, B. Lamothe, D. L. Lazarova, Y. Lee, C. H. Leung, Q. Li, Y. Li, Z. Li, Z. P. Lin, J.-Y. Liou, D. Mattoon, X. Mei, Q. Miao, E. Murakami, S.-Y. Park, A. Sachpatzidis, M. Sachsamanoglou, Y. Sato, A. Sau, H. A. Seow, Z. Takacs, E. C. Thrower, C. D. Verrico, C.-J. Wang, Y. Wang, H. Yeo, J. Yu, H. Zeng, H. Zhang, Y. Zhang, Y. Zhang, Y. W. Zhang

Lecturers

J. G. Collins (*Anesthesiology*), L. M. Dembry (*Internal Medicine*), G. E. Gardiner, M. Hodsdon (*Laboratory Medicine*), R. J. Levine (*Internal Medicine*), J. M. Pawelek (*Dermatology*), A. Scriabine

Pharmacology 502a/b, Seminar in Pharmacology. A seminar given by a department faculty member on his or her area of interest to teach students how to critically evaluate papers and to improve the ability of students to give oral presentations.

Pharmacology 504a, Pharmacology I: Maintaining and Restoring Homeostasis. Lectures cover drug-receptor interactions, control of messenger systems and channels, and regulation of physiological systems. P. Dannies and staff.

Pharmacology 504b, Pharmacology II: Interfering Selectively. Lectures cover antibiotics, immunotherapy, and chemotherapy. P. Dannies and staff.

Pharmacology 506a/b, Methods in Pharmacological Research (Rotations). Students work in laboratories of faculty of their choice. The term in each laboratory is one term. Hours to be arranged. W. Sessa.

Pharmacology 508b, Neuropharmacology. An intensive examination of current understanding of the sites and mechanisms involved in drug action on single nerve cells and on the brain. Emphasis on basic functions and illustrative examples of their disturbance by drugs. J. M. Ritchie.

Pharmacology 509b/Psychiatry 175b, Neurobiology of Drug Addiction. Overview of knowledge of the mechanisms underlying drug addiction at the molecular, cellular, and neural systems levels. Staff.

Pharmacology 510b, Life Science Business. Exploration of where the life sciences intersect with finance and the law from a variety of perspectives including those of industry, academia, and the communications media. G. E. Gardiner.

Pharmacology 518b, Current Topics in Cancer and Viral Therapy. Y. C. Cheng, E. Lolis.

PSYCHIATRY

Office: GB 618, 785.2117

Professors

G. K. Aghajanian, S. J. Blatt, M. B. Bowers, Jr. (*Emeritus*), B. S. Bunney (*Chair*), K. M. Carroll, J. P. Comer (*Child Study Center*), R. S. Duman, M. Edelson (*Emeritus*), P. L. Errera (*Emeritus*), S. Fleck (*Emeritus*), J. E. Gelernter, P. S. Goldman-Rakic (*Neurobiology*), E. Griffith, G. Heninger (*Emeritus*), S. C. Jacobs, P. Jatlow (*Laboratory Medicine*), K. K. Kidd (*Genetics*), R. A. King (*Child Study Center*), T. R. Kosten, J. H. Krystal, M. Lewis (*Child Study Center; Emeritus*), G. F. Mahl (*Emeritus*), J. W. Mason (*Emeritus*), C. M. Mazure, T. H. McGlashan, B. Moghaddam, P. B. Molinoff (*Adjunct*), D. Musto (*Child Study Center*), A. C. Nairn, B. Olivier (*Adjunct*), S. S. O'Malley, G. Pearlson, D. M. Quinlan, F. Redlich (*Emeritus*), D. E. Redmond, Jr., M. Reiser (*Emeritus*), R. Rosenheck, R. H. Roth, Jr., B. J. Rounsaville, R. Schottenfeld, J. E. Schowalter (*Child Study Center*), M. Sheard (*Emeritus*), W. H. Sledge, D. L. Snow, S. Southwick, J. S. Strauss (*Emeritus*), F. R. Volkmar (*Child Study Center*), B. Wexler, H. V. Zonana

Associate Professors

M. Alreja, K. Avants, S. A. Ball, R. Belitsky, M. Bell, N. Boutros, C. Bradberry, N. L. Cooney, J. Cubells, Jr., L. Davidson, E. Diaz, D. C. D'Souza, E. Giller (*Adjunct*), C. Grilo, K. Hawkins, R. E. Hoffman, M. A. Hoge, R. D. Kerns, Jr., D. Lipschitz, R. Malison, S. Martino, C. A. Morgan III, H. R. Pearsall, I. L. Petrakis, M. Picciotto, S. Powsner, H. Prigerson, R. Rohrbaugh, M. I. Rosen, M. J. Sernyak, Jr., W. Shi, K. J. Sikkema, R. Sinha, J. L. Steiner, J. Tallman (*Adjunct*), J. Taylor, J. Tebes, C. van Dyck, S. W. Woods, K. A. Yonkers

Assistant Professors

W. Abi-Saab (*Adjunct*), P. B. Allen, L. Anez Nava, C. B. Baker, R. Berman (*Adjunct*), H. Blumberg, D. Brunner (*Adjunct*), D. Budimirovich, I. Cavus, J. Chambers, R. A. Chambers, M. Chawarski, J. Chen, M. Desai, R. A. Desai, P. Desan, C. Easton, C. N. Epperson, T. George, G. Gonzalez-Haddad, L. Jacobsen, M. Jean-Baptiste, W. Kaspro, J. Kaufman, J. Kaufman, S. Krishnan-Sarin, S. D. Kruger, J. A. S. Lappalainen, D. Leslie, S. Madonick, A. Martin (*Child Study Center*), R. Masheb, G. Mason, D. Mathalon, S. McKee, T. McMahan, D. Northrup, M. V. Pantaloni, J. Poling, M. Potenza, A. Preda, A. Rasmusson, C. Ripple, G. Sanacora, C. Sanislow III, G. Shahar, G. Sirugo (*Adjunct*), M. Sofuoglu, J. Staley, T. Styron, N. Suchman, R. Tampi, D. Vojvoda, N. Ward

Instructors

M. Delphin, M. Paris

Senior Research Scientists

D. V. Cicchetti (*Child Study Center*), J. D. Elsworth

Research Scientists

R. Baldwin, K. Behar, A. F. Fontana, T. Kosten, A. Margolin, A. Oliveto-Beaudoin, M. K. Pruett, G. Tamagnan

Associate Research Scientists

D. J. Abi-Saab, R. M. Arnold, S. Axelrod, S. V. Batten, R. Beech, G. J. Bryson, C. Connell, J. Cramer, C. A. Crusto, K. D'Avanzo, C. M. D'Sa, L. Fenton, J. M. Fiszdon, D. Gordon, T. Greig, G. Insabella, M. E. Jackson, A. Jaffe, B. Kloos, W. Lynch, P. Maciejewski, K. S. Marcus, D. Martin, C. Milligan, B. Morrow, S. S. Nicholls, G. A. Omar, D. R. Rau, R. W. Robin, J. Saks, S. N. Sathyanesan, M. R. Stefani, S. Swan, D. Tate, M. Wu

Research Affiliates

J. Auerbach, J. Bombace, L. Frisman, F. M. Inglis, P. Kehoe, S. Luthar, G. Marek, J. D. Otis, C. L. Seibyl, E. Triffleman, S. A. Wyatt

Clinical Professors

R. Arnstein (*Emeritus*), T. W. Downey (*Child Study Center*), G. H. Flamm, C. W. Gardner, Jr., D. G. Greenfeld, S. A. Leavy, E. Prelinger (*Psychology*), L. W. Reiser, C. E. Riordan, H. L. Ruben, H. S. Sacks (*Child Study Center*), L. D. Siggins

Associate Clinical Professors

J. Allison, V. Altshul, R. Balsam, D. Berg, D. Bialos, S. Boltax-Stern (*Child Study Center*), E. Brett, D. Carlson, J. Ciarcia, G. Cohn (*Retired*), R. A. Cooper, J. De Figueiredo, J. B. Ferholt (*Child Study Center*), L. B. Fierman, J. Geller, R. L. Goettsche, K. Grady, L. Harkness, J. E. Henisz, R. J. Hoffnung, D. Johnson, J. A. Kleeman, R. Klein, C. C. Kovel, J. Laffal, D. Laub, I. Levine, K. O. Liebmann, J. Lustman, B. McKee, L. J. Micheels, D. C. Moore, M. Norko, R. Ostroff, D. Perlick, R. Peters, Jr., J. Phillips, S. H. Phillips, Jr., S. G. Possick, M. Rowe, M. A. Rubenstein, E. R. Ryan, R. Sallick, J. Schnitt, S. J. Schreiber, A. H. Schwartz (*Child Study Center*), A. Siegal, E. W. Snyder, R. Stern, T. Stewart, G. J. Watstein, J. Young

Assistant Clinical Professors

A. Adis, R. Ahrens, A. Almai, P. Amble, C. Atkins, S. Atkins, A. Balter, M. Baranoski, L. C. Barr, M. Barrios, B. Becker, R. Behrends, C. Bemis, S. Bender, D. Bendor, E. Berger, T. Bergherr, S. A. Bers, S. J. Bittner, H. C. Blue, D. Boltas, T. Brown, A. Brownlow, L. V. Calabrese, V. D. Calhoun, C. Carlson, R. Casey, L. I. Chaikovsky, J. Check, J. Chilakamarri, C. Chiles, D. Ciancimino, A. Cinquanta, J. C. Cline, J. T. Collins (*Child Study Center*), C. Corcoran, V. Coric, C. Cottrol, W. F. Dailey, G. H. Davis, K. Degen, C. Doebrick, N. Donegan, D. B. Douglas, M. T. Dreyfus, L. K. Driscoll, J. Erdos, A. Evans, P. Falzer, D. Fehon, M. Felts, J. Fickes, S. Finkelstein, G. J. Firman, P. A. Fountain, P. Fox, D. Fried, R. Geller, R. Giebisch, T. Glinberg, C. T. Goldberg, P. B. Goldblatt, L. Goldstein, K. Gonsai, C. Gonzalez, L. Gonzalez, G. H. Gordon (*Internal Medicine*), C. Gottschalk, C. Greene, K. Grimmell, M. Groner, E. Grottole, C. S. Grove, L. Grunebaum, F. A. Hameedi, J. C. Harland, E. Hart, S. Hill, W. L. Hill, Jr., M. Hillbrand, O. Hills, S. Horowitz, S. Houlding, J. Jackson, D.

D. Jacobson, H. G. Jarecki, C. Jean, A. Kaner, K. Kennedy, S. Khan, K. Kiehl, P. Kirwin, B. Klink, B. Knox, F. E. Koerner, R. Kravitz, J. L. Kurt, M. M. Kurtz, A. Lamba, H. Lankenau, D. Lapaglia, J. H. Lederer, N. E. Legow, L. Levenson, J. M. Levine, R. D. Lewis, S. Lewis, E. Littman, H. Lizcano, D. London, K. Long, H. Lubin, M. Mandelkern, B. Marcus, C. A. Markle, L. Martel, C. Martinez, C. Maynard, S. M. McCants, R. McCleary, B. B. McConnell, B. Meandzija, A. Meisler, A. Miano, S. J. Migdole, H. Miller, T. Miller, E. Millman (*Child Study Center*), R. M. Milstein, F. Minichiello, V. Morrow, F. C. Mueller, P. V. Mulinski, J. Murray, E. Nasper, M. Newell, J. Niels, D. Nudel, K. Nuro, A. M. Oberkirch, M. S. Okasha, N. Olson, A. Oren, D. Oren, B. Orrok, R. Ownbey, A. Papsun, C. Pearson, L. Perone, W. Phillips, D. Pilkey, G. Plotke, M. L. Prevey, G. Racusin, J. Rakfeldt, I. Rathbone, A. Resnick, L. Robertson, J. Robinson, C. T. Rotenberg, M. Roy, N. Roy, R. Rubin, C. Russell, D. S. Russell, J. A. Sabbatino, J. K. Sadowitz, K. Salisbury, C. Sanders, R. Sbriglio, R. Schreibman, J. Scott, Jr., S. R. Segall, J. K. Shepard, D. Sholomskas, S. E. Silverman, S. Sreenivasan, D. Stayner, W. A. Stewart, M. Stitelman, G. E. Sturges, A. Tessler, B. Tobin, P. Torop, K. Tracey, L. Trevisan, M. Tupper, S. H. Tworowski, D. Wallington, S. D. Wayne, Jr., J. M. P. Wexler, R. S. White, J. Williams, C. Wiseman, D. Woodruff, B. Zigun, S. Zimmerman, Z. Zimolo

Clinical Instructors

T. Alford, M. Bailey, J. Beauvais, E. Becker-Dunn, C. G. Burns, M. K. Champion, V. Cogshall, J. F. Collins, C. Dike, I. M. Dineen, D. Fisk, S. Fitzpatrick, D. Flanigan, J. Frey, C. Grazia, M. C. Grenough, S. Hegde Rodrigues, W. Levy-Massarani, P. Mohrer, M. Nicholas, C. Nicou, R. G. Prabhulal, J. N. Rascati, S. Rathi, S. Rathi, M. E. Savage, S. J. Sokol, M. F. Sperrazza, J.-A. Vitarelli, M. Vollmar, E. Weiss, S. E. Wolf

Lecturers

J. D. Alvaro, L. Ameen, B. Backus, S. Berman, D. Berv, K. Berv, E. Bialek, A. Blank, Jr., W. Boutelle, L. Brauer, J. Bristol, E. Coley, C. Conrad, H. Crabbe, D. Davis, A. Demac, P. J. DiLeo, A. Dworetz, W. G. Faraclas, C. Feldman, M. L. Glucksman, S. Goodson, J. Gordon, G. Greenberg, E. G. Halstead, M. Kalacznik, D. Klein, A. Koleszar, A. Labruzzo, L. Lager, C. Lenoci, R. Lenoci, N. Lifton, R. Makover, K. Marcus, A. Mares, J. H. Meyer, M. Mitchell, I. Moses, R. L. Munich, S. L. Nichols, J. I. Novick, K. Owen, R. Phillips, S. A. Quinlan, M. Rego, W. Reich, B. G. Rifkin, D. Rightmer, A. Rodriguez, J. A. Roth, E. B. Rubin, S. L. Satel, D. Schwartz, A. Sholomskas, G. H. Sirkin, R. Z. Solomon, W. Spear, C. Tesluk, P. Thomas, M. Vythingam

The Department of Psychiatry teaches in both preclinical and clinical years. The pre-clinical course is a study of medical behavioral science, rather than an introduction to clinical psychiatry. Specific clinical skills, such as interviewing and the recognition and management of psychiatric syndromes, are taught later in the curriculum and especially during the required clinical clerkship in Psychiatry. Electives are available for students with special interest in selected areas. All *advanced* clinical electives are numbered in the 200s. The required core clinical clerkship (Psychiatry 106) is a prerequisite for enrollment in any of these advanced clinical electives; an advanced clinical elective may not be

taken instead of the required core clinical clerkship. *Please note: All students signing up for a seminar elective must also register with the Medical Student Education Office, Department of Psychiatry, 785.2089 (pending approval of the instructor).*

Psychiatry 101a, Patient-Centered Interviewing: The Patient's Story. This segment of the Doctor-Patient Encounter course focuses on the experience of illness — how people react to and cope with illness. The various psychosocial factors and psychological defenses which impact on the experience of illness, such as age, gender, social supports, socioeconomic status, and coping style, are examined. There is an emphasis on the patient interview and techniques for eliciting the patient's story in an empathic and effective manner. The format includes lectures, demonstration interviews, and practice with standardized patients. R. Belitsky and departments of Psychiatry and Medicine faculty.

Psychiatry 101b, Biological Basis of Behavior. Lectures are integrated with the Neurology course, and include principles and neural mechanisms of learning and memory; neural systems involved in fear and anxiety; neural systems involved in reward and drug addiction; neural systems involved in stress; and neural systems involved in attention. Following each lecture, a psychiatrist interviews patients diagnosed to have either obsessive-compulsive disorder, panic disorder, cocaine abuse, post-traumatic stress disorder, or schizophrenia. These 1.5-hour clinical presentations, which include time for questions, link psychiatric symptoms to the neural mechanisms discussed in the lecture on that day. 2.5 hours per week. Department of Psychiatry faculty.

Psychiatry 106, Core Clinical Clerkship. Skills and knowledge needed for the general practice of medicine are acquired in a clinical psychiatric setting. These include the ability to conduct a competent screening interview in order to identify symptoms of a psychiatric or substance abuse disorder; to perform a complete mental status examination of a patient who is emotionally disturbed or mentally ill; to make a differential diagnosis, and to plan for further evaluation and tests that would be useful in deciding among various diagnostic possibilities; to make recommendations for initial treatment or referral; to assess whether or not dangers to or from a patient exist; and to understand indications and procedures for lawful involuntary commitment of a patient to a mental hospital for treatment. R. Rohrbaugh and Department of Psychiatry faculty.

Psychiatry 107/Obstetrics and Gynecology 104, Shared Clerkship in Medical Psychiatry. This clerkship, administered jointly with the Department of Obstetrics and Gynecology, is designed to provide students with an understanding of the presentation of psychiatric illness in patients with co-morbid medical disorders. Emphasis is placed on screening interviews, including mental status examination; identification of symptoms; and differential diagnosis and initial treatment recommendations in patients with co-morbid and psychiatric illness. Special emphasis is placed on evaluation of psychiatric emergencies and competency to make informed medical decisions. R. Rohrbaugh and Department of Psychiatry faculty.

Psychiatry 203, Subinternship in Hospital Psychiatry, Inpatient Division, Connecticut Mental Health Center. Intensive work with inpatients who suffer from major psychiatric disorders with or without substance abuse. Emphasis is on assessment, acute treatment, and arrangement of continuing care in the community. The clerk functions as an integral member of a multidisciplinary treatment team. Clinical research participation is encouraged. Opportunities available to explore special areas of interest (e.g., forensics, psychopharmacology, administrative) with Connecticut Mental Health Center faculty. The elective is given on the inpatient service, CMHC. Scheduled

throughout the year during regular clerkship rotations for a *minimum* of four weeks. Prerequisite: Psychiatry 106. Maximum registration: two students. R. Pearsall, S. Jacobs, J. Chambers, S. Nichols, M. Jean-Baptiste, and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 205, Subinternship in Medical Psychiatry, Yale-New Haven Hospital, 2039 Clinic Building. This is an advanced clinical elective for third- and fourth-year students who have a particular interest in the psychiatric disorders that can occur in medical-surgical patients. The staff has special interests in differential diagnosis of medical vs. psychiatric illness, in psychopharmacology, and in computer applications in psychiatry. Each student works up patients in parallel with advanced residents in inpatient and emergency department settings. Teaching occurs on daily walk rounds. Scheduled throughout the year during regular clerkship rotations (*except* July and August) for a *minimum* of four to six weeks. (NOTE: Fourth-year students will be given preference.) Prerequisite: Psychiatry 106. Maximum registration: one student per rotation. P. Desan, T. Stewart, S. Powsner, W. H. Sledge, and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 206, Advanced Clinical Elective in Law and Psychiatry. This clerkship program affords opportunities for third- and fourth-year medical students to observe and participate in “competency to stand trial” evaluations with a clinical team that makes these assessments at the New Haven Correctional Center. In addition, they may attend Law School classes with students who represent psychiatric patients, observe civil commitment procedures, attend probate court hearings, as well as the criminal proceedings in local New Haven Superior Courts. Students attend work seminars where case evaluations and write-ups are discussed and prepared, and read appropriate legal cases and psychiatric literature. Students may be able to participate in parts of evaluations of insanity defense, custody determination, and other forensic issues. They attend the Law and Psychiatry Seminar during their rotation. Scheduled throughout the year (*except* August) during regular clerkship rotations for a *minimum* of four weeks. Prerequisite: Psychiatry 106. Maximum registration: two students. H. Zonana. To enroll in this advanced clinical elective, please contact R. Rohrbaugh.

Psychiatry 208, Subinternship in Consultation-Liaison Psychiatry at the Veterans Administration Connecticut Health Care System (VACHS), West Haven, Connecticut. The Consultation-Liaison Service at the VACHS West Haven provides consultation to acute medical and surgical units, specialized rehabilitation units, and outpatient primary care clinics. Students participate in the management of patients with close supervision from attending staff. The goals of the rotation are (1) to increase skill in conducting a psychiatric interview which maximizes the collection of pertinent clinical data; (2) to use the data collected in formulating and implementing treatment plans emphasizing the interplay of biological and psychological factors in the patients’ presentation; (3) to experience the satisfaction of caring for patients with complex medical and psychiatric illness. Scheduled throughout the year for a minimum of four weeks. Open to third- and fourth-year medical students. Prerequisite: Psychiatry 106. Maximum registration: one student per rotation. C. Chiles and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 210, Subinternship in Hospital Psychiatry, Inpatient Division, Yale-New Haven Psychiatric Hospital. Intensive work with patients who suffer from major psychiatric disorders and range in age from college students to middle age. Emphasis is on assessment, acute treatment, and arrangement of post-discharge follow-up care in the

community. The subintern is an advanced clerk functioning as a member of the multi-disciplinary treatment team, taking on primary clinician and psychiatric/medical responsibilities for patients under the supervision of senior clinicians. The elective is given on the inpatient service at Y-NHPH; clinical research and outpatient involvement may be options. This subinternship is available throughout the year, during regular clerkship rotations for a *minimum* of four weeks. Prerequisite: Psychiatry 106. Maximum registration: one student per rotation. R. M. Milstein, M. Bowers, C. Mazure, and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 211, Subinternship in Clinical Neuroscience, Clinical Neuroscience Research Unit Inpatient Division. This clerkship offers senior medical students the opportunity to work closely with a variety of patients who are hospitalized during their participation and treatment in research protocols. The Clinical Neuroscience Research Unit (CNRU) is a thirteen-bed inpatient ward with associated outpatient clinics and basic science laboratories on the third floor of the Connecticut Mental Health Center (CMHC). Supervised implementation of novel psychopharmacology, exposure to multiple aspects of clinical and basic science research, and in-depth experience with individual and group psychotherapies are educational aspects of this elective. Patients' diagnostic categories include depression, obsessive-compulsive disorder, schizophrenia, cocaine abuse, and substance abuse. Scheduled throughout the year for a minimum of four weeks. Prerequisites: Psychiatry 101 and 106. Maximum registration: one student per rotation. R. Malison, V. Coric, and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 212, Subinternship in Post-Traumatic Stress Disorder, National Center for PTSD at the Veterans Administration Connecticut Health Care System (VACHS), West Haven, Connecticut. This clerkship offers senior medical students the opportunity to participate in the research and clinical activities of the National Center for PTSD. This experience includes exposure to a research program that has taken a national leadership role in identifying the effects of severe psychological trauma on brain structure and function using a variety of neuropharmacological, neuropsychological, and brain imaging modalities. The patients under study include men and women who have been exposed to physical and sexual abuse and the trauma associated with combat. Scheduled throughout the year for a minimum of four weeks. Prerequisite: Psychiatry 106. Maximum registration: two students per rotation. S. Southwick and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 214, Subinternship in Psychotic Disorders at G8W and the Schizophrenia Research Clinic at the Veterans Affairs Connecticut Health Care System (VACHS) in West Haven, the Clinical Neuroscience Research Unit and the Psychopharmacology Intervention Program at the Connecticut Mental Health Center, the Community Care Center in West Haven. This subinternship is designed to provide an integrative exposure to the interface of psychopharmacology and psychosocial treatments for chronic psychotic disorders. Each individual requesting a subinternship is asked to outline his or her interest in psychotic disorders. Based on this information, a faculty mentor is assigned and a clinical program prepared that provides greater depth in the relevant areas. An effort is made to provide exposure to both hospital- and community-based treatments as well as clinical neuroscience advances. Within all treatment settings, subinterns have closely supervised direct clinical contact with patients. Subinterns are invited to attend academic conferences within the Department of Psychiatry focused on clinical and neuroscience issues relevant to psychosis. The goals of the rotation are (1) to expose the subintern to established and experimental medication treatments for psychotic disorders, particularly schizophrenia; (2) to expose the subin-

tern to rehabilitative approaches to schizophrenia; (3) to expose the subintern to community-based treatments for chronic mental illness. Scheduled throughout the year for a period of six to eight weeks. Prerequisite: Psychiatry 106. Maximum registration: two students per rotation. C. D'Souza, M. Bell, J. Cubells, L. Davidson, L. Harkness, S. Kruger, J. Krystal, and staff. To enroll in this subinternship, please contact R. Rohrbaugh.

Psychiatry 325/Child Study 325, Child Psychiatry Elective, Yale Child Study Center. The aim of this elective is to provide the student with an intensive experience in infant, child, and adolescent psychiatry. The curriculum includes assessments of normal development and psychopathology in childhood, treatment methods, and research in major disorders of childhood. The elective takes advantage of the wide range of ongoing seminars, conferences, and clinical services in place at the Child Study Center. Teaching methods include seminars, conferences, field observations, ward rounds, and practica selected by the student following consultation with the director of medical studies, Child Study Center. Open to fourth-year students. A. Martin, D. Stubbe, J. Woolston, and staff. To enroll in this advanced clinical elective, please contact A. Martin directly at 688.6016 or 785.3370.

SURGERY

Office: FMB 102, 785.2697

Professors

J. J. Abrahams (*Otolaryngology; Diagnostic Radiology*), L. M. Bartoshuk (*Otolaryngology*), M. Centrella (*Plastic*), D. L. Cooper (*Otolaryngology; Internal Medicine*), E. Crelin (*Emeritus*), S. J. Dudrick (*Co-terminus with St. Mary Hospital; Gastroenterology*), J. A. Elefteriades (*Cardiothoracic*), C. Fowler (*Adjunct*), J. P. Geibel (*Gastroenterology*), W. W. Glenn (*Emeritus*), B. G. Green (*Co-terminus with Pearce Laboratory; Otolaryngology*), R. J. Gusberg (*Director of Medical Studies; General*), G. L. Hammond (*Cardiothoracic*), B. K. Kinder (*Oncology*), J. A. Kirchner (*Emeritus*), G. S. Kopf (*Cardiothoracic*), D. R. Lannin (*Oncology*), S. B. Leder (*Otolaryngology*), D. J. Leffell (*Otolaryngology; Dermatology*), A. Lofqvist (*Otolaryngology; Adjunct*), M. I. Lorber (*Transplant*), B. Lytton (*Emeritus*), L. M. Manuelidis (*Neuropathology*), C. F. McKhann (*Emeritus*), I. M. Modlin (*Gastroenterology*), J. A. Persing (*Plastic*), L. K. Pickett (*Emeritus*), R. Rabinovici (*Trauma & Surgical Critical Care*), S. H. Rosenbaum (*Trauma & Surgical Critical Care; Anesthesiology*), A. T. Rosenfield (*Urology; Diagnostic Radiology*), P. E. Rubin (*Otolaryngology; Adjunct*), J. Santos-Sacchi (*Otolaryngology*), C. T. Sasaki (*Otolaryngology*), I. R. Schwartz (*Otolaryngology*), J. H. Seashore (*Pediatric*), Y. H. Son (*Otolaryngology; Therapeutic Radiology*), B. E. Sumpio (*Vascular*), R. J. Touloukian (*Pediatric*), R. Udelsman (*Chair; Oncology and Endocrinology*), R. M. Weiss (*Urology*), H. K. Wright (*Emeritus*)

Associate Professors

K. R. Anderson (*Urology*), M. S. Bogucki (*Emergency Medicine*), J. W. Colberg (*Urology*), D. C. Cone (*Emergency Medicine*), L. C. Degutis (*Emergency Medicine*), G. D'Onofrio (*Emergency Medicine*), H. Foster, Jr. (*Urology*), H. L. Frankel (*Trauma & Surgical Critical Care*), V. Gahtan (*Vascular*), T. L. McCarthy (*Plastic*), R. L. Moss, L. J. (*Gross Anatomy*), W. Rosenblatt (*Otolaryngology; Anesthesiology*), R. A. Rosenthal (*Oncology; Chief, VA*), D. Ross (*Otolaryngology*), R. R. Salem (*Oncology*), J. A. Schriver (*Emergency Medicine*), N. E. Seymour (*Gastroenterology*), W. B. Stewart (*Gross Anatomy*), G. Tellides (*Cardiothoracic*), J. G. Thomson (*Plastic*)

Assistant Professors

J. C. Alex (*Otolaryngology*), P. Barrett (*Cardiothoracic*), R. L. Bell (*Gastroenterology*), S. M. Bowers (*Emergency Medicine*), A. Dardik (*Vascular*), A. L. Friedman (*Transplant*), L. Geiselhart (*Transplant*), H. M. Hojman (*Trauma & Surgical Critical Care*), S. W. Jolin (*Emergency Medicine*), K. J. Jubanyik-Barber (*Emergency Medicine*), L. J. Kaplan (*Trauma & Surgical Critical Care*), M. A. McKee (*Pediatric*), E. P. Monico (*Emergency Medicine*), C. Moore (*Emergency Medicine*), H. C. Moscovitz (*Emergency Medicine*), D. Narayan (*Plastic*), A. Poma (*Emergency Medicine*), S. Roman (*Oncology*), J. H. Shin (*Plastic*), J. A. Sosa (*Oncology*), M. Tandon (*Trauma & Surgical Critical Care*), A. Weihl (*Emergency Medicine*), J. Yang (*Trauma & Surgical Critical Care*)

Instructors

U. M. Darr (*Cardiothoracic*), G. J. Koullias (*Cardiothoracic*), C. J. Lovoulos (*Cardiothoracic*)

Senior Research Scientist

J. Latifpour (*Urology*)

Associate Research Scientists

Y. Bai (*Cardiothoracic*), W. Li (*Vascular*), C. Rahner (*Gross Anatomy*), Y. Wang (*Cardiothoracic*)

Research Affiliates

P. Biancani (*Urology*), X.-J. Wang (*Vascular*)

Clinical Professors

S. Ariyan (*Plastic and Otolaryngology*), M. S. Arons (*Plastic*), P. W. Brown (*Plastic; Orthopaedics and Rehabilitation*), J. E. Fenn (*Gastroenterology*), W. D. Johnston (*Dental*), D. W. Kohn (*Dental; Pediatrics*), S. B. Nuland (*Gastroenterology*), R. B. Reinhold (*Gastroenterology*), R. S. Stahl (*Plastic*), E. Yanagisawa (*Otolaryngology*)

Associate Clinical Professors

N. A. Atweh (*Trauma*), M. S. Beinfeld (*Gastroenterology*), Z. N. Chicarilli (*Plastic*), J. M. Dowaliby (*Otolaryngology*), R. C. Fazio (*Dental*), A. J. Graham (*Gastroenterology*), H. L. Horton (*Dental*), R. K. Houlihan (*Gastroenterology*), J. P. Kelly (*Dental*), K. Koral (*Dental*), K. J. Lee (*Otolaryngology*), R. Lena (*Urology*), W. B. McCullough (*Gastroenterology*), N. M. Passarelli (*Gastroenterology*), J. M. Serling (*Dental*), L. W. Skope (*Dental*), S. A. Stein (*Gastroenterology*), H. Stern (*Cardiothoracic*), A. L. Toole (*Cardiothoracic*), B. S. Weisbart (*Dental*)

Assistant Clinical Professors

H. Abrams (*Gastroenterology*), P. A. Barcewicz (*Gastroenterology*), M. Baron (*Dental*), A. Baskin (*Urology*), G. Bosker (*Emergency Medicine*), K. Bradley (*Emergency Medicine*), J. M. Brogden (*Gastroenterology*), P. H. Cain (*Dental*), D. Card (*Urology*), H. Cedarbaum (*Dental*), B. Y. Cha (*Dental*), K. A. Ciardiello (*Gastroenterology*), D. G. Cloutier (*Dental*), M. L. D'Aiuto (*Trauma & Surgical Critical Care*), R. J. Dean (*Urology*), R. H. Delfini (*Dental*), R. W. DeNatale (*Vascular*), M. L. Dewar (*Cardiothoracic*), A. T. Dioguardi (*Dental*), T. G. Duplinsky (*Dental*), J. Federico (*Cardiothoracic*), S. V. Flagg (*Plastic*), J. M. Flynn (*Emergency Medicine*), A. R. French (*Emergency Medicine*), S. I. Friedman (*Otolaryngology*), S. Fusi (*Plastic*), R. Garvey (*Gastroenterology*), A. R. Goldstein (*Dental*), R. T. Golia (*Dental*), L. G. Graff (*Emergency Medicine*), R. D. Grossman (*Dental*), J. Henley (*Otolaryngology*), J. R. Hernandez (*Otolaryngology*), R. H. Hirokawa (*Otolaryngology*), N. R. Horowitz (*Oncology*), J. A. Huttner (*Dental*), M. E. Ivy (*Trauma & Surgical Critical Care*), B. Jordan (*Emergency Medicine*), R. B. Kaplan (*Dental*), D. E. Karas (*Otolaryngology*), G. J. Katigbak (*Emergency Medicine*), D. B. Keck (*Dental*), J. C. Kirchner (*Otolaryngology*), P. A. Kraus (*Urology*), P. E. Krochmal (*Emergency Medicine*), J. W. Kunkel (*Emergency Medicine*), D. Kusovitsky (*Dental*), J. Kveton (*Otolaryngology*), E. M.

Kwasnik (*Gastroenterology*), H. A. Laffaye (*Gastroenterology*), T. E. Lamonte (*Emergency Medicine*), S. B. Levine (*Otolaryngology*), D. Lin (*Emergency Medicine*), J. R. Loeffler (*Otolaryngology*), G. Longstreth (*Gastroenterology*), R. A. Lowlicht (*Otolaryngology*), J. Maisel (*Emergency Medicine*), M. Margolies (*Dental*), S. Mitra (*Otolaryngology*), G. E. Mombello (*Plastic*), D. J. Muller (*Dental*), S. H. Natkin (*Dental*), H. Newman (*Urology*), G. R. Nicastrì (*Gastroenterology*), R. Nierenberg (*Emergency Medicine*), M. K. O'Brien (*Anatomy and Experimental*), R. J. Parker (*Dental*), J. A. Passarelli (*Gastroenterology*), M. F. Perkal (*Gastroenterology*), E. G. Polokoff (*Gastroenterology*), R. P. Ponn (*Cardiothoracic*), T. Ponn (*Gastroenterology*), M. R. Prete (*Emergency Medicine*), G. J. Price (*Plastic*), C. Rambus (*Emergency Medicine*), J. Razzak (*Emergency Medicine*), K. Restifo (*Emergency Medicine*), D. D. Roberts (*Otolaryngology*), S. S. Rozen (*Dental*), E. C. Salk (*Emergency Medicine*), J. C. Salomon (*Plastic*), J. E. Sather (*Emergency Medicine*), R. F. Schlessel (*Gastroenterology*), M. J. Schpero (*Dental*), S. Shah (*Gastroenterology*), R. K. Shaw (*Cardiothoracic*), B. K. Singletary (*Dental*), M. K. Sonick (*Dental*), R. E. Steller (*Dental*), G. Strothers (*Otolaryngology*), R. F. Stroup (*Urology*), T. F. Sweeney (*Vascular*), J. M. Tan (*Emergency Medicine*), J. L. Tanenbaum (*Dental*), A. Tarabar (*Emergency Medicine*), G. Terranova (*Emergency Medicine*), S. C. Thornton (*Gastroenterology*), D. Tran (*Trauma*), R. Tross (*Plastic*), M. B. Wallack (*Dental*), J. F. Walsh (*Urology*), D. Wasson (*Gastroenterology*), H. K. Watson (*Plastic*), M. A. Wayne (*Emergency Medicine*), M. H. Weinstein (*Plastic*), M. J. Werdmann (*Emergency Medicine*), A. E. Wilk (*Dental*), J. A. Wilkinson (*Emergency Medicine*), J. M. Willett (*Otolaryngology*), K. Yanagisawa (*Otolaryngology*), E. Young (*Otolaryngology*)

Clinical Instructors

P. W. Alberti (*Otolaryngology*), J. P. Antoci (*Urology*), J. A. Arons (*Plastic*), D. Ashmead IV (*Plastic*), D. Astrachan (*Otolaryngology*), C. B. Beckman (*Cardiothoracic*), J. S. Berkley (*Dental*), M. S. Bianchi (*Otolaryngology*), M. W. Bradway (*Oncology*), J. A. Camilleri (*Urology*), E. Chen (*Otolaryngology*), B. Chervin (*Otolaryngology*), T. Coffey (*Otolaryngology*), P. Demir (*Urology*), R. J. Devito (*Urology*), S. M. Einbinder (*Dental*), L. V. Evans (*Emergency Medicine*), R. A. Feldman (*Urology*), P. E. Fidler (*Trauma & Surgical Critical Care*), P. D. Fischer (*Plastic*), M. J. Flanagan (*Urology*), P. L. Fortgang (*Otolaryngology*), R. A. Gaito, Jr. (*Otolaryngology*), N. A. Gordon (*Otolaryngology*), M. Grushka (*Otolaryngology*), I. Guttenberg (*Otolaryngology*), D. G. Hesse (*Urology*), R. P. Hung (*Urology*), R. J. Ippolito (*Gastroenterology*), V. B. Khachane (*Cardiothoracic*), T. H. Lesnik (*Otolaryngology*), R. A. Levin (*Otolaryngology*), M. Lin (*Dental*), J. R. Lyons (*Plastic*), V. Mansourian (*Gastroenterology*), T. V. Martin (*Urology*), R. J. Miles (*Otolaryngology*), A. J. Namon (*Otolaryngology*), M. M. Perez (*Emergency Medicine*), W. J. Pite (*Dental*), V. Prabhat (*Otolaryngology*), J. P. Roach (*Urology*), S. J. Salzer (*Otolaryngology*), J. F. Schmidt (*Otolaryngology*), E. M. Vining (*Otolaryngology*), T. W. Vris (*Otolaryngology*)

Postdoctoral Fellows

K. Amankwah (*Vascular*), C. Ariyan (*Transplant*), H. Asada (*Cardiothoracic*), F. Aziz (*Vascular*), Q. Chen (*Vascular*), D. Coffman (*Trauma*), Z. Ding (*Cardiothoracic*), D. Eisenberg (*Urology*), M. Fukuhara (*Gross Anatomy*), M. Haga (*Vascular*), J. Kakisis

(*Vascular*), M. Kidd (*Gastroenterology*), T.-S. Lee (*Vascular*), Y. Nie (*Trauma*), S. Pak (*Plastic*), J. Portereiko (*Trauma*), K. Radebold (*Gastroenterology*), H. Ranjbaran Jahromi (*Cardiothoracic*), L. Simarro Gonzalez (*Neuropathology*), Y.-J. Su (*Trauma*), F. Tamarkin (*Urology*), P. Tang (*Cardiothoracic*), H. Ueno (*Vascular*), E. Vucic (*Gastroenterology*), C. Walker (*Neurology*), X. Wang (*Neuropathology*), L. Zhang (*Transplant*)

Postdoctoral Associates

L. Chen (*Vascular*), A. Iakimov (*Cardiothoracic*), J. Kim (*Cardiothoracic*), V. Rybalchenko (*Otolaryngology*), H. Su (*Trauma*), T. Yi (*Transplant*), M. Yono (*Urology*), F. Zhang (*Trauma*)

Lecturers

L. Acton (*Otolaryngology*), H. C. Briggs (*Gross Anatomy*), E. Browne (*Emergency Medicine*), N. S. Bruno (*Otolaryngology*), S. R. Carden (*Emergency Medicine*), D. S. Cervonka (*Emergency Medicine*), N. Collins (*Plastic*), M. M. Conroy (*Gross Anatomy*), E. Eisenberg (*Dental*), H. L. Ferrillo (*Otolaryngology*), B. C. Fichandler (*Plastic*), S. Ghofrany (*Gross Anatomy*), S. Jolie (*Otolaryngology*), S. E. Kapadia (*Gross Anatomy*), H. M. Keiser-Pederson (*Vascular*), L. G. Kelly (*Emergency Medicine*), M. Kiessling (*Emergency Medicine*), W. L. Mackey (*Pediatric*), D. S. MacMillan (*Emergency Medicine*), A. Meiman (*Emergency Medicine*), G. Opin (*Plastic*), P. M. Opin (*Plastic*), P. Possenti (*Trauma & Surgical Critical Care*), C. Powell (*Otolaryngology*), J. J. Roney (*Emergency Medicine*), S. A. Wright (*Emergency Medicine*), K. Yanagisawa (*Otolaryngology*)

Surgery 103, Surgical Clerkship. The twelve-week Surgery Clerkship is divided into an eight-week block and a four-week block. The eight-week general surgery core is consecutive and includes two four-week rotations. The clerkship has been organized to expose students to the principles and practice of surgery, engaging students in an ongoing dialogue focused on surgical problem solving.

General Surgery Core A: (Four weeks total) Students in the first clinical year spend four weeks on the general surgery service of one of the following hospitals: Yale-New Haven Hospital, Veterans Affairs Connecticut Health Care System, West Haven, or Bridgeport Hospital. Staff.

General Surgery Core B: (Four weeks total) Students in the first clinical year spend four weeks on the general surgery service of one of the following: SICU/Anesthesia, CT/Vascular Surgery, Trauma/Emergency Medicine, or Hospital of St. Raphael. Staff.

For the General Surgery Core A and Core B rotations, students can expect to be integrated into the clinical team and assigned to specific patients. Responsibilities include taking histories and performing physical examinations on their patients, participating in the evaluation and management of these patients, following patients' progress, and participating as assistants in the surgical operations performed upon their assigned cases. In addition, the students are expected to participate in the evaluation and care of outpatients seen in the clinics, the critically ill patient in the intensive care unit, and the injured patient in the emergency room. Emphasis is placed on involving students in the process of clinical problem solving with the guidance of the residents and the attending preceptors. A problem-oriented seminar series defines the core curriculum. A weekly case study seminar, directed by students, emphasizes the development of teaching skills.

General Surgery Core C: The four-week block may be taken independently from the eight-week block and is devoted to the surgical specialties. Specialties offered:

orthopaedics, otolaryngology, pediatric surgery, plastic surgery, transplant surgery, and urology. While on the specialty, the student is assigned patients in rotation and carries out complete histories, physical examinations, and certain procedures on these patients. The student is expected to participate, wherever possible, in the operative procedures performed on these patients, and in postoperative care. Students are also expected to attend the outpatient clinics in their assigned specialty. Seminars covering all the specialties define the core curriculum.

Surgery 122, Subinternship, Plastic Surgery. Clinical experience as an intern on a large clinical ward. The student has experience in the management of craniofacial anomalies, burns, trauma, hand surgery, head and neck surgery, reconstructive surgery of the head and neck and extremities, microsurgery, as well as surgery of the congenital anomalies and cosmetic surgery. Limited to one fourth-year student per month with a minimum of one-month rotations. Arrangements must be made with J. A. Persing.

Surgery 123b, Biochemical and Metabolic Foundations of Plastic and Reconstructive Surgery. A course designed to provide in-depth understanding of the molecular events underlying the diverse clinical phenomena encountered in plastic surgery. Topics include fluid electrolyte metabolism in the burn patient, biochemistry and metabolism of collagen and its relation to scarring and connective tissue disorders, normal wound healing, and disorders of the same. Offered for four weeks during the spring term, two hours per week by arrangement. Limited to two fourth-year students. J. A. Persing.

Surgery 129, Cardiopulmonary Transplantation. Intensive exposure to laboratory and clinical aspects of cardiac, cardiopulmonary, and pulmonary transplantation. Special emphasis on the relation between ongoing laboratory studies and clinical practice in this field. Clinical involvement in preoperative assessment of prospective transplant candidates, donor procurement, intraoperative management, and postoperative immunosuppression. Limited to one student by arrangement with J. Elefteriades.

Surgery 130, Subinternship, Cardiothoracic. Intensive exposure to preoperative and postoperative management of adult and pediatric cardiothoracic surgical patients and to intraoperative conduct of surgical procedures, with active participation in the operating room and in regular conferences. Students attend regular seminars covering major areas of cardiothoracic surgery with members of the faculty, and may be required to present a seminar on a subject in cardiothoracic surgery to faculty and resident staff. Limited to two students in the second clinical year. Three or six weeks by arrangement with J. Elefteriades.

Surgery 131, Subinternship, General Thoracic. Intensive exposure to preoperative and postoperative management of general thoracic surgical patients and to the intraoperative conduct of surgical procedures involving the lung, the chest wall, the thymus, and the esophagus. Included is an organized lecture series covering the entire field of general thoracic surgery. Students are expected to present a seminar at the conclusion of the subinternship, focusing on a specialized topic in general thoracic surgery. Six weeks by arrangement with J. Elefteriades.

Surgery 141, Outpatient Otolaryngology. This is an opportunity for those students who have not had exposure in otolaryngology to spend time with a full-time attending otolaryngologist seeing outpatients in an office setting. Timing is quite flexible and a student may spend one to three mornings or afternoons each week for one to four weeks. By arrangement with C. T. Sasaki and the full-time otolaryngology staff.

Surgery 142, Emergency Medicine. The student participates in the evaluation and treatment of adult emergency patients, learning appropriate work-up and therapy. Stu-

dents are expected to attend morning conferences four mornings per week and to work four twelve-hour shifts that may include nights and weekends. Prerequisite: Surgery 103.

Surgery 143, Care of the Intensive Care Unit Patient. Didactic and clinical sessions in the Yale-New Haven Hospital SICU prepare the student to provide basic treatment for the critically ill patient. Topics include cardiopulmonary resuscitation, airway and ventilator management, assessment of the multiple trauma patient, and management of sepsis. Prerequisite: Surgery 103. Three to four weeks, by arrangement. R. Rabinovici, S. Rosenbaum.

Surgery 144, Trauma Surgery. The student functions as an extern and participates actively in trauma service rounds, teaching conferences, trauma resuscitation, and operative management of trauma cases. Students are expected to attend conferences and take inhouse call with the chief resident of the trauma service. Prerequisite: Surgery 103. R. Rabinovici.

Surgery 150, Plastic and Reconstructive Surgery. Evaluation and reconstructive surgery of deformities of congenital, traumatic, and neoplastic origin. Includes inpatient, outpatient, and operating room experience, supplemented by regular conferences. Limited to two students; available throughout the year. J. A. Persing.

Surgery 151, Subinternship, General Surgery. (Four weeks) Offered throughout the academic year at both Yale-New Haven Hospital and Veterans Affairs Connecticut Health Care System, West Haven. Limited to second clinical year, one or two students per month. Arrangements must be made with D. C. Andersen.

Surgery 152, Advanced Senior Seminar, General Surgery. This is a weekly evening seminar series covering advanced and controversial topics in general surgery. Three one-hour sessions include dinner at faculty homes and run from October through February. Reprints of pertinent articles provided prior to each seminar. Staff.

Surgery 153, Subinternship, Otolaryngology. This clinical experience is independent of the third-year Surgery/Otolaryngology rotation, and takes place on an individual basis. It includes operating room experience, ward responsibilities, and involvement in outpatient ENT. Yale-New Haven Hospital, the Hospital of St. Raphael, and the Veterans Affairs Connecticut Health Care System, West Haven, are available for the rotation. Minimum rotation of four weeks; limited to one student. J. F. Kveton, C. T. Sasaki.

Surgery 158, Surgery at Waterbury Hospital. A well-supervised fourth-year clerkship including teaching rounds, operating room experience, outpatient clinical experience, and conferences in radiology, pathology, oncology, vascular surgery, and general surgery. Daily ICU rounds are conducted with an attending physician. Six weeks, for one or two students, with room and meals provided. E. Kwasnik and staff.

Surgery 159, Subinternship, Urology. Varied clinical studies, in-depth experience in all forms of urology. Limited to clinical years. One student per month, for three to four weeks. R. Weiss and staff.

Surgery 160, Surgery at St. Mary's Hospital, Waterbury. Six-week subinternship in an affiliated community hospital of 400 beds, consisting of ward and operative experience, teaching rounds, and conferences. An independent general surgical residency exists at St. Mary's. S. Dudrick and staff.

Surgery 165, Surgery at Bridgeport Hospital. For a student contemplating a career in clinical surgery, an opportunity to function as a team member with residents and attending staff in a large community hospital. General surgery with fundamental pre- and

postoperative care, appropriate operating room activity, basic bedside diagnostic and therapeutic hands-on experience, emphasis on intensive care unit, trauma, and burns. Each student is expected to present a twenty-minute research or clinical topic of choice at completion of the course. Room and board available on duty. Limited to one or two students for six- to eight-week rotations in the fourth year. Staff.

Surgery 171, Subinternship, Peripheral Vascular Surgery. A practical experience in the diagnosis and management of vascular disease, including pre- and postoperative care. The scope of the experience includes orientation to the noninvasive vascular diagnostic laboratory, outpatient care in the Yale Vascular Center, and inpatient management (including patients in the OR, ICU, and the vascular surgery unit). Four weeks, by arrangement with B. Sumpio and staff.

Surgery 172, Subinternship, Transplantation Surgery. This intensive clinical experience emphasizes the preoperative assessment, intraoperative care, and postoperative management of patients suffering end-stage organ system failure who are cared for by transplantation. Emphasis also includes the management of immunosuppressive medication regimens and the care of post-transplant problems. Available throughout the year, one or two students, for one month. Arrangements with M. Lorber and staff.

Surgery 173, Experimental Transplantation Surgery and Immunobiology. Clinical and laboratory studies into problems relevant to the field of organ transplantation. Students work under the tutelage of a member of the faculty in the Division of Organ Transplantation. Original projects must be mutually agreed upon, and may include studies into the immunology of allograft rejection, the mechanism of immunosuppressive drug action, immunological monitoring of patients following transplantation, or biochemical markers to potentially identify early rejection of renal, hepatic, pancreatic, or small bowel allografts. Available throughout the year, one or two students, time commitment by arrangement. M. Lorber and staff.

Surgery 174, Subinternship in Surgical Oncology. Intensive exposure to surgical aspects of the treatment of cancer in clinic, hospital, and operating room. The interaction between surgery, medical oncology, and radiation therapy is experienced by following patients receiving multiple forms of therapy. Available throughout the year, one or two students, preferably for one-month rotations. Arrangements with R. R. Salem.

Surgery 175, Pediatric Cardiac Surgery. Intensive exposure to pediatric cardiac surgery with emphasis on preoperative evaluation and postoperative management. The student observes the changes in pre- and postoperative physiology and spends much of the time following postoperative patients. The student is exposed to the use of ventilators in the pediatric patient, inotropic and vaso-dilating agents, evaluation and treatment of low cardiac output state, and the use of pacemakers. Weekly conferences include surgical conferences, preoperative conferences, catheterization conference, pre- and postoperative clinics, as well as weekly sessions with the attending staff. Some technical experience and instruction are provided in the operating room according to the student's interest. Limited to one student per month except August, September, and December. G. S. Kopf and staff. Arrangements to be made with G. Kopf.

Surgery 176, Subinternship in Pediatric Surgery. In-depth exposure to the broad spectrum of pediatric surgical problems of the abdomen, chest, head and neck, and pelvis. The student obtains experience with correction of congenital anomalies, management of trauma, care of the critically ill child, and management of solid tumors. The subintern is an integral part of the pediatric surgical team and is expected to take in-house night call every third night. Contact R. Touloukian.

THERAPEUTIC RADIOLOGY

Office: HRT 140, 785.2956

Professors

D. Brash, J. J. Fischer, P. M. Glazer (*Chair*), B. G. Haffty, B. M. Kacinski, R. Nath (*Physics*), R. E. Peschel, S. C. Rockwell, W. D. Rupp, R. J. Schulz (*Emeritus*), Y. H. Son, W. C. Summers

Professor of Research

K. B. Low, Jr. (*Adjunct*)

Associate Professors

S. J. Baserga (*Molecular Biophysics and Biochemistry*), F. d'Errico, J. Knisely, K. B. Roberts, J. Sweasy, L. D. Wilson

Assistant Professors

J. Deng, S. Higgins, D. Kim, M. Moran, H. Song

Research Scientist

D. B. Fischer

Associate Research Scientists

P. Havre, B. King, V. Mihaylova

Research Affiliate

W. P. Summers

Associate Clinical Professors

Z. Chen, A. H. Knowlton, P. Pathare, N. Yue

Postdoctoral Fellows

A. Alvero, D. Roa, F. Rogers, A. Shah, S. Takeuchi

Postdoctoral Associates

S. Dalal, P. Fotiadou, K.-H. Kim, T. Lang, J. Lloyd, M. Maitra, I. Mihaylova, W. Zhang

Lecturers

J. Bond, R. Vera

Therapeutic Radiology 101, Clinical Clerkship in Radiation Therapy. A flexible program designed to introduce the medical student to radiation therapy. The biological and physical bases of radiation therapy, together with clinical practice and ongoing research. Clinical exposure to patients with malignant disease, with between seventy and one hundred treated daily in the department. The student takes part in departmental conferences, clinics, lectures, and individual teaching sessions. Limited to two students at any time. B. G. Haffty and staff.

Therapeutic Radiology 102, Clinical Radiobiology. This course is designed to provide residents in radiation oncology with a comprehensive review of clinical radiobiology as it applies to the practice of radiation therapy. The course is open to residents and fellows in other disciplines interested in radiobiology as it applies to clinical oncology. The course participant attends approximately twenty lectures in clinical radiobiology, which are delivered throughout the academic year between September and June. Scheduling by arrangement with B. G. Haffty.

Therapeutic Radiology 201b, A Survey of Radiobiology. A review of the interaction of radiation on living organisms, progressing from DNA damage to complex mammalian systems. Modern concepts in molecular biology and cell kinetics are emphasized in understanding the sequelae of this interaction and the mechanism by which the organism responds to the injury produced. Fourteen sessions. By arrangement with Radiobiology staff.

Therapeutic Radiology 305, Principles and Methods of Radiation Dosimetry. A graduate-level course for physics students or medical students with a strong physics background who want to learn about radiation dosimetry as it applies to medical practice. Topics include X-ray spectra, ionization chambers, X-ray exposure and the roentgen, mass energy-absorption coefficients, the Bragg-Gray principle, stopping power and linear energy transfer, chemical dosimeters, instrumentation, and physical aspects of radiology. Approximately twenty hours of tutorial sessions. Scheduling by arrangement with instructor. R. Nath.

Therapeutic Radiology 306, Laboratory Projects in Radiation Dosimetry. Students are given problems that relate to and supplement long-term, ongoing radiation dosimetry projects within the department. Prerequisite: Therapeutic Radiology 305, or its equivalent. Scheduling by arrangement with instructor. R. Nath.

Yale Cancer Center

Office: WWW 205, 785.4095

Director

V. T. DeVita, Jr. (*Internal Medicine*)

Professors

K. S. Anderson (*Pharmacology*), P. W. Askenase (*Internal Medicine*), R. E. Baron (*Orthopaedics and Rehabilitation*), L. M. Bartoshuk (*Surgery*), G. P. Beardsley (*Pediatrics*), J. R. Bender (*Internal Medicine*), N. Berliner (*Internal Medicine*), J. L. Bologna (*Dermatology*), W. F. Boron (*Cellular and Molecular Physiology*), A. L. M. Bothwell (*Immunobiology*), K. Bottomly (*Immunobiology*), J. L. Boyer (*Internal Medicine*), D. E. Brash (*Therapeutic Radiology*), I. M. Braverman (*Dermatology*), A. E. Broadus (*Internal Medicine*), M. J. Caplan (*Cellular and Molecular Physiology*), D. Carter (*Pathology*), S. K. Chambers (*Obstetrics and Gynecology*), Y.-C. Cheng (*Pharmacology*), E. Chu (*Internal Medicine; VA Cancer Center*), L. Cooley (*Genetics*), J. Costa (*Pathology*), J. Craft (*Internal Medicine*), P. Cresswell (*Immunobiology*), M. R. Cullen (*Internal Medicine*), A. McBride Curtis (*Diagnostic Radiology*), P. De Camilli (*Cell Biology*), V. T. DeVita, Jr. (*Internal Medicine*), D. C. DiMaio (*Genetics*), T. P. Duffy (*Internal Medicine*), C. C. Duncan (*Neurosurgery*), J. S. Duncan (*Diagnostic Radiology*), R. L. Edelson (*Dermatology*), J. A. Elias (*Internal Medicine*), S. S. Ferro-Novick (*Cell Biology*), J. J. Fischer (*Therapeutic Radiology*), R. A. Flavell (*Immunobiology*), S. D. Flynn (*Pathology*), B. G. Forget (*Internal Medicine*), G. E. Friedlaender (*Orthopaedics and Rehabilitation*), J. E. Galán (*Microbial Pathogenesis*), A. Garen (*Molecular Biophysics and Biochemistry*), S. Ghosh (*Immunobiology*), P. M. Glazer (*Therapeutic Radiology*), B. G. Haffty (*Therapeutic Radiology*), A. D. Hamilton (*Chemistry*), G. L. Hammond (*Surgery*), P. W. Heald (*Dermatology*), R. B. Hochberg (*Obstetrics and Gynecology*), S. Hockfield (*Neurobiology*), N. J. Holbrook (*Internal Medicine*), T. R. Holford (*Epidemiology and Public Health*), K. L. Insogna (*Internal Medicine*), S. Jacobs (*Psychiatry*), J. D. Jamieson (*Cell Biology*), C. A. Janeway, Jr. (*Immunobiology*), B. M. Kacinski (*Therapeutic Radiology*), M. Kashgarian (*Pathology*), S. V. Kasl (*Epidemiology and Public Health*), P. B. Kavathas (*Laboratory Medicine*), B. K. Kinder (*Surgery*), E. I. Kohorn (*Obstetrics and Gynecology; Emeritus*), W. H. Konigsberg (*Molecular Biophysics and Biochemistry*), D. R. Lannin (*Surgery*), C. H. Lee-French (*Diagnostic Radiology*), D. J. Leffell (*Dermatology*), P. Lengyel (*Molecular Biophysics and Biochemistry; Emeritus*), A. B. Lerner (*Dermatology; Emeritus*), P. M. Lizardi (*Pathology*), K. B. Low (*Therapeutic Radiology; Adjunct*), B. Lytton (*Surgery; Emeritus*), J. A. Madri (*Pathology*), V. T. Marchesi (*Pathology*), S. M. McCarthy (*Diagnostic Radiology*), R. McCorkle (*Nursing*), P. McPhedran (*Laboratory Medicine*), I. S. Mellman (*Cell Biology*), I. G. Miller (*Pediatrics*), L. M. Milstone (*Dermatology*), I. M. Modlin (*Surgery*), J. S. Morrow (*Pathology*), F. Naftolin (*Obstetrics and Gynecology*), R. Nath (*Therapeutic Radiology*), P. J. Novick (*Cell Biology*), R. J. Papac (*Internal Medicine*), H. A. Pearson (*Pediatrics; Emeritus*), J. A.

Persing (*Surgery*), R. E. Peschel (*Therapeutic Radiology*), J. M. Piepmeier (*Neurosurgery*), J. S. Pober (*Pathology*), W. H. Prusoff (*Pharmacology; Emeritus*), C. M. Radding (*Genetics*), J. M. Rapoport (*Internal Medicine*), H. A. Risch (*Epidemiology and Public Health*), S. Rockwell (*Therapeutic Radiology*), J. K. Rose (*Pathology*), A. T. Rosenfield (*Diagnostic Radiology*), F. H. Ruddle (*Molecular, Cellular, and Developmental Biology*), N. H. Ruddle (*Epidemiology and Public Health*), W. D. Rupp (*Therapeutic Radiology*), P. Salovey (*Psychology*), A. C. Sartorelli (*Pharmacology*), C. T. Sasaki (*Surgery*), D. G. Schatz (*Immunobiology*), J. Schlessinger (*Pharmacology*), P. E. Schwartz (*Obstetrics and Gynecology*), J. H. Seashore (*Surgery*), W. C. Sessa (*Pharmacology*), C. L. Slayman (*Cellular and Molecular Physiology*), B. R. Smith (*Laboratory Medicine*), E. L. Snyder (*Vice Chair; Laboratory Medicine*), M. Snyder (*Molecular, Cellular, and Developmental Biology*), Y. H. Son (*Therapeutic Radiology*), J. A. Steitz (*Molecular Biophysics and Biochemistry*), D. F. Stern (*Pathology*), J. A. J. Stolwijk (*Epidemiology and Public Health; Emeritus*), G. Sze (*Diagnostic Radiology*), P. J. Tattersall (*Laboratory Medicine*), K. J. Taylor (*Diagnostic Radiology*), R. E. Tigelaar (*Dermatology*), I. Tocino (*Diagnostic Radiology*), R. J. Touloukian (*Surgery*), R. Udelsman (*Surgery*), D. C. Ward (*Genetics*), R. M. Weiss (*Surgery*), S. M. Weissman (*Genetics*), K. R. Williams (*Molecular Biophysics and Biochemistry; Adjunct*), J. L. Wood (*Chemistry*), D. Zelterman (*Epidemiology and Public Health*)

Associate Professors

D. J. Austin (*Chemistry*), A. E. Bale (*Genetics*), S. J. Baserga (*Molecular Biophysics and Biochemistry*), E. H. Bradley (*Epidemiology and Public Health*), R. R. Breaker (*Molecular, Cellular, and Developmental Biology*), B. A. Burtneess (*Internal Medicine*), M. Cappello (*Pediatrics*), E. B. Claus (*Epidemiology and Public Health*), J. Concato (*Internal Medicine*), D. L. Cooper (*Internal Medicine*), E. A. Cornelius (*Diagnostic Radiology; Emeritus*), C. M. Crews (*Molecular, Cellular, and Developmental Biology*), A. de Lotbinière (*Neurosurgery*), F. d'Errico (*Therapeutic Radiology*), M. P. DiGiovanna (*Internal Medicine*), H. E. Foster (*Surgery*), J. R. Gruen (*Pediatrics*), C. Hashimoto (*Cell Biology*), J. P. Knisely (*Therapeutic Radiology*), M. T. Knobf (*Nursing*), D. S. Krause (*Laboratory Medicine*), J. Lacy (*Internal Medicine*), E. Lolis (*Pharmacology*), S. T. Mayne (*Epidemiology and Public Health*), J. M. McNiff (*Dermatology*), J. R. Murren (*Internal Medicine*), V. Parkash (*Pathology*), J. V. Pasacreta (*Nursing*), A. S. Perkins (*Pathology*), W. M. Philbrick (*Internal Medicine*), G. Pizzorno (*Internal Medicine*), J. S. Pollak (*Diagnostic Radiology*), H. G. Prigerson (*Psychiatry*), M. B. Qumsiyeh (*Genetics*), C. A. Redlich (*Internal Medicine*), D. L. Rimm (*Pathology*), H. M. Rinder (*Laboratory Medicine*), K. B. Roberts (*Therapeutic Radiology*), D. A. Ross (*Surgery*), D. M. Rothstein (*Internal Medicine*), T. J. Rutherford (*Obstetrics and Gynecology*), R. R. Salem (*Surgery*), D. J. Schonfeld (*Pediatrics*), M. J. Shlomchik (*Laboratory Medicine*), S. Somlo (*Internal Medicine*), M. J. Stern (*Genetics*), H. Sun (*Genetics*), J. B. Sweasy (*Therapeutic Radiology*), G. Tallini (*Pathology*), J. G. Thomson (*Surgery*), J. Van Hoff (*Pediatrics*), A. M. Vignery (*Orthopaedics and Rehabilitation*), L. D. Wilson (*Therapeutic Radiology*), S. L. Wolin (*Cell Biology*), J. J. Wysolmerski (*Internal Medicine*), T. Xu (*Genetics*), H. Zhang (*Genetics*), H. Zhao (*Epidemiology and Public Health*), T. Zheng (*Epidemiology and Public Health*)

Assistant Professors

L. Alexander (*Epidemiology and Public Health*), E. Bahceci (*Internal Medicine*), A. M. Bennett (*Pharmacology*), F. J. Giordano (*Internal Medicine*), M. Girardi (*Dermatology*), M. J. Harding (*Comparative Medicine*), S. A. Higgins (*Therapeutic Radiology*), L. J. Horvath (*Diagnostic Radiology*), P. Hui (*Pathology*), M. L. Irwin (*Epidemiology and Public Health*), A. Iwasaki (*Epidemiology and Public Health*), B. A. Jones (*Epidemiology and Public Health*), H. Kluger (*Internal Medicine*), A. J. Koleske (*Molecular Biophysics and Biochemistry*), H. Lin (*Epidemiology and Public Health*), G. Mor (*Obstetrics and Gynecology*), W. W. Mothes (*Microbial Pathogenesis*), L. E. Philpotts (*Diagnostic Radiology*), S. J. Santacrose (*Nursing*), S. Seropian (*Internal Medicine*), W. D. Shlomchik (*Internal Medicine*), F. J. Slack (*Molecular, Cellular, and Developmental Biology*), B. S. Sleight (*Pediatrics*), J. Yang (*Surgery*), Z. Yin (*Internal Medicine*), H. Yu (*Epidemiology and Public Health*)

Senior Research Scientists

P. J. Flory (*Genetics*), R. Halaban (*Dermatology*), J. M. Pawelek (*Dermatology*)

Research Scientists

T. Ashley (*Genetics*), J. L. Brandsma (*Comparative Medicine*), B. Cartmel (*Epidemiology and Public Health*), D. B. Fischer (*Therapeutic Radiology*), C. Howe (*Pathology*), A. Khanna-Gupta (*Internal Medicine*), J. M. McGrath (*Comparative Medicine*), W. J. McMurray (*Laboratory Medicine*), P. M. Schwartz (*Dermatology*), N. Wei (*Molecular, Cellular, and Developmental Biology*)

Associate Research Scientists

D. Cao (*Internal Medicine*), B. A. Davis (*Cellular and Molecular Physiology*), H. G. Foellmer (*Immunobiology*), X.-Y. Fu (*Pathology*), R. L. Fuleihan (*Pediatrics*), P. A. Havre (*Therapeutic Radiology*), J. G. Howe (*Laboratory Medicine*), F. J. Hsu (*Internal Medicine*), Z. Hu (*Molecular Biophysics and Biochemistry*), B. L. King (*Therapeutic Radiology*), E. T. Matloff (*Genetics*), D. Pradhan (*Pathology*)

Clinical Professors

S. Ariyan (*Surgery*), M. Arons (*Surgery*), T. N. Byrne (*Neurology*), M. G. Curnen (*Epidemiology and Public Health*), L. R. Farber (*Internal Medicine*), D. S. Fischer (*Internal Medicine*), R. S. Stahl (*Surgery*)

Associate Clinical Professors

D. J. S. Beardsley (*Pediatrics*), S. N. Bobrow (*Internal Medicine*), J. J. Ciarcia (*Psychiatry*), C. T. Donovan (*Nursing*), A. J. Graham (*Surgery*), S. Imaeda (*Dermatology*), A. L. Levy (*Internal Medicine*), W. B. Lundberg, Jr. (*Internal Medicine*), S. A. Stein (*Surgery*)

Assistant Clinical Professors

P. A. Barcewicz (*Surgery*), T. M. Fynan (*Internal Medicine*), K. A. Haedicke (*Internal Medicine*), N. R. Horowitz (*Surgery*), M. E. Katz (*Internal Medicine*), J. F. Kveton (*Surgery*), R. A. Lowlicht (*Surgery*), J. P. O'Connell (*Internal Medicine*), M. F. Perkal (*Surgery*), J. C. Salomon (*Surgery*)

Lecturers

I. Black (*Chemistry*), I. A. Dawson (*Molecular, Cellular, and Developmental Biology*)

Affiliate Members of the Yale Cancer Center

J. Booss (*Professor*), J. A. Kirchner (*Professor Emeritus*), P. L. Weinstein (*Professor*), C. R. Roy (*Associate Professor*), H. M. Spinelli (*Associate Professor*), W. J. Baker (*Assistant Professor*), D. E. Fass (*Assistant Professor*), S. N. Rabinowe (*Assistant Professor*), N. Dainiak (*Clinical Professor*), K. A. Johnson (*Clinical Professor*), P. E. Perillie (*Clinical Professor*), H. Abrams (*Associate Clinical Professor*), R. B. Cooper (*Associate Clinical Professor*), A. H. Knowlton (*Associate Clinical Professor*), J. F. Pezzimenti (*Associate Clinical Professor*), P. S. Berger (*Assistant Clinical Professor*), M. E. Dailey (*Assistant Clinical Professor*), S. A. DelPrete (*Assistant Clinical Professor*), R. J. Garvey (*Assistant Clinical Professor*), D. Hollister, Jr. (*Assistant Clinical Professor*), A. H. Rosenberg (*Assistant Clinical Professor*), M. Rosman (*Assistant Clinical Professor*), S. O. Shah (*Assistant Clinical Professor*), A. L. Silber (*Assistant Clinical Professor*), M. Sznol (*Assistant Clinical Professor*), D. B. Boyd (*Clinical Instructor*), M. S. Dhami (*Clinical Instructor*), K. A. Dressler (*Clinical Instructor*), G. A. Reznikoff (*Clinical Instructor*), M. B. Abrams, M. H. Bar, D. S. Berger, R. J. Bernasek, J. J. Borruso, D. S. Brandt, N. S. Cohen, E. A. Duda, S. Duerr, S. F. Dunbar, R. B. Erichson, R. S. Folman, K. Jagathambal, R. A. Kloss, G. Kopelson, G. Kruger, J. F. Levine, K. M. S. Lo, I. S. Lowenthal, M. C. Magnifico, J. P. Malefatto, R. Nadkarni, W. E. Pleban, L. R. Saberski, K. L. Sacks, R. B. Schlessel, J. S. Silver, D. Slater, J. A. Spera, N. Strombakis, I. Tepler, V. M. Tjan-Wettstein, D. P. Tuck, B. A. Ward, D. Wasson, D. H. Witt

The Yale Cancer Center is one of thirty-nine NCI-designated comprehensive cancer centers in the nation and the only one in Southern New England. The center supports a \$100 million research base to promote translational research through collaborations between and within eleven basic, epidemiological, and clinical research programs. Basic research programs in molecular oncology, molecular virology, cancer prevention and control, immunology, cell biology, and developmental therapeutics are integrated with clinical research and teaching programs in breast cancer, cancer genetics, hematologic malignancies and stem cell transplantation, therapeutic radiology, and ovarian cancer. The center also supports thirteen shared facilities that are available for oncological research: flow cytometry, cesium-137 irradiator, critical technologies, rapid case ascertainment, tissue culture, animal genomics service, clinical trials office, biostatistics, mass spectrometry, cancer genetic counseling, DNA microarray, tissue array, and a molecular epidemiology shared resource. Information regarding patient care, research, and cancer prevention and control may be obtained by telephoning 203.785.4095.

School of Nursing

The following courses in the School of Nursing are offered to interested medical students. For more information, please contact Dean Paula Milone-Nuzzo at the School of Nursing, 203.785.2399.

Nursing 625b, Children with Chronic Conditions/Disabilities and Their Families.

This course provides students with a forum to discuss theoretical concepts of illness in relation to a family-centered model of care for children and adolescents with a chronic condition/disability and their families. Relevant issues and such topics as service delivery, financing of care, and legislative and health policy issues are explored. Emphasis is placed on the role of advanced practice nursing in the provision of health care for children and adolescents with a chronic condition. Open with permission of the instructor. One and one-half hours per week. S. Santacroce.

Nursing 633a, Health Promotion in Children. This lecture/seminar course is designed to introduce the student to the primary care of children from infancy through preadolescence. Concepts and theories related to well-child care are explored. Clinical applications of the theories and principles of preventive and optimal health care are emphasized. Open with permission of the instructor. One and one-half hours per week. L. Sadler.

Nursing 723a/Health Policy and Administration 592a, Concepts and Principles of Aging. This elective course is designed as a multidisciplinary course that introduces students to the major concepts and principles of gerontology and to a variety of biopsychosocial theories on aging. Delivery systems of care for the elderly are explored along with the current social policy initiatives as they relate to the elderly. Research initiatives are discussed, and students are urged to explore issues of eldercare in their own specialty/discipline as well as in related disciplines. One and one-half hours per week. C. Lyder.

Nursing 729b, Alternative and Complementary Therapies. Alternative and complementary therapies are medical interventions not usually taught in medical or nursing schools and are not generally available in U.S. hospitals. Despite the fact that such therapies as herbs, vitamins, meditation, massage, acupuncture, and therapeutic touch are usually paid for by consumers, approximately one in three adults in the United States used such treatments in 1990. Neither advocates nor opponents can afford to remain ignorant of the growing body of literature on the clinical and cost effectiveness of these therapies. This elective course offers the opportunity to examine the literature and to discuss the clinical implications of published studies. One hour per week. A. Ameling.

[Nursing 731a (RLST 976a), Spirituality in Health Care. A growing number of Americans report that they pray daily and that they want their health care providers to pray with them and for them. This elective course addresses this trend by providing an introduction to the spiritual dimension of caring. Issues of health and illness, curing and caring, the power of belief, and the spiritual healing practices of major religious traditions are examined. The course has a multicultural and interdisciplinary focus and provides an introduction to spiritual assessment in health care settings. One and one-half hours per week. A. Ameling, M. Lewis. Not offered fall term 2002.]

Nursing 733b, Living with Dying. Advances in treatment and technology have transformed the clinical course of many terminal illnesses. A growing number of people with terminal illness are living longer than ever before. Home care, shorter length of stay, and restrictions on admissions because of managed care have become a health care delivery reality for individuals with even the most serious illnesses. Health care providers need a comprehensive understanding of the individual and family experiences across an illness trajectory as clients adapt to living with disease and the possibility of death. This course develops practitioners' cultural and gender awareness, understanding, and competencies in creating environments to relieve suffering for individuals and their families across settings. Emphasis is on nonpharmacologic interventions to relieve suffering, including spiritual, interpersonal, and sociocultural. The course is structured with the premise that relief from suffering, meaning, and transcendence at the end of life are best achieved and understood through the interpersonal use of narrative techniques, like storytelling, to facilitate communication. One and one-half hours per week. A. Ameling.

Nursing 765a,b/Health Policy and Administration 575a,b/Internal Medicine 196, Advanced Concepts in Home Care. This course focuses on topics that address the current issues in the field of home health care practice. Home care is examined from the perspective of its place within a changing health care delivery system. Issues that confront both the clinician and the manager in home care practice are discussed from a multispecialty perspective. Open with permission of the instructor. Two hours per week. P. Milone-Nuzzo.

Nursing 769a, Advanced Concepts and Principles of Diabetes Care. This seminar focuses on the concepts and principles of diabetes managed care based on the American Diabetes Association Standards of Care (2002). It includes principles of primary care (screening, early detection, intervention, patient education), secondary care principles related to diabetes management, tertiary care related to complications, various treatment modalities, patient education, and self-care. These concepts and principles of care are presented relative to type of diabetes (insulin dependent, noninsulin dependent, gestational and pregnancy, and secondary), age, developmental stage, duration of disease, and ethnicity. A multidisciplinary approach to care issues is emphasized, incorporating the contributions of other disciplines in the collaborative management of diabetes. Important aspects of living with a chronic illness such as the psychological, social, occupational, and economic are also emphasized. Open with permission of the instructor. Two hours per week. G. Melkus, coordinator.

Nursing 775a, Health Care of Women and Infants: Public Policy and Programs. This course is designed to provide students with a working knowledge of Title V and other federal programs that affect the health care of women and infants. The concept of public responsibility for maternal and child health and its expression in public programs implemented earlier in this century are discussed. The current legislative base for the health care of women and infants is identified and examples of the delivery of services on the local and state levels (planning, financing, implementation, coordination, and evaluation) are discussed to illustrate the actual implementation of public policy. The role of the health care practitioner as a leader and/or as a member of an interdisciplinary team is emphasized throughout. Current trends in health care economics and programs on the local, state, and national levels are described, and their impact on the health status of women and infants explored. Open with permission of the instructor. Two hours per week. L. Ament.

Nursing 849a (Nursing 631b in spring term), Family Systems and Perspectives Relevant to Health Care. This course provides theoretical perspectives on family structures, family development, and family systems that influence the health of the individual in the context of the community. Techniques in assessment of family functioning, vulnerabilities, and strengths provide the basis for developing strategies of intervention, crisis management, referral, and integration of multiple systems of care. Selected family problems are analyzed within the theoretical perspectives with examples for clinical and policy interventions. Open with permission of the instructor. Three hours per week for seven weeks. K. Knafl.

Nursing 961a, Health Policy for Public and Private Sectors. This course is an overview of health policy issues in the public and private sectors, and is intended to provide students with skills needed to understand and influence current health care policy formation. Its emphasis is on politics, policy analysis, and structures and processes of health care policy making. Linkages to nursing practice and research are addressed throughout the course. Students learn how to use government documents and data for decision making and select a current area of health policy for in-depth study. Open with permission of the instructor. Two hours per week. S. Cohen.

Postgraduate Study

Graduate medical education in clinical departments is based upon the residency training programs of the Yale-New Haven Medical Center. Initial appointments are offered in Anesthesiology, Dermatology, Diagnostic Imaging, Emergency Medicine, Internal Medicine Primary Care, Internal Medicine, Neurology, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Orthopaedics and Rehabilitation, Otolaryngology, Pathology, Pediatrics, Plastic Surgery, Psychiatry, Surgery, Therapeutic Radiology, and Urology; appointments are made through the National Resident Matching Program or the appropriate specialty matching program (Neurology, Neurosurgery, Ophthalmology, Otolaryngology, Urology). Residencies are also offered in Dentistry. Subspecialty residency programs are offered in the following specialties:

Anesthesiology	Nuclear Medicine
Cardiothoracic Surgery	Obstetrics and Gynecology
Child Psychiatry	Pathology and Laboratory Medicine (AP/CP)
Dermatology	Pediatric Surgery
Diagnostic Radiology	Pediatrics
Emergency Medicine	Psychiatry
Internal Medicine	Transplant Surgery
Neurology	Vascular Surgery
Neurosurgery	

The School and the hospital are joined in the establishment and management of an Office of Graduate Medical Education of Yale-New Haven Medical Center. Residents at the Yale-New Haven Hospital and the Veterans Affairs Connecticut Health Care System, West Haven, are enrolled as postgraduate students in the School of Medicine in addition to their hospital appointments. In most of the clinical departments, a limited number of fellowships for research or clinical training are also available.

Detailed information concerning residency programs may be obtained from the chair of the appropriate department. Applicants must be graduates of an approved medical school in the United States or Canada or have successfully completed the requirements of the ECFMG and have a valid ECFMG certificate. General information may be obtained by visiting the Yale-New Haven Medical Center Graduate Medical Education Web site (http://www.ynhh.org/med_prof/grad_med.html/) or the Yale University School of Medicine site (<http://info.med.yale.edu/ysm/departments/>) and visiting the appropriate department.

Continuing Education

Yale School of Medicine is accredited by the Accreditation Council for Continuing Medical Education as a provider of continuing medical education. The school offers a variety of continuing education programs directed both at practicing physicians and at physicians whose interest is in the basic sciences.

Courses offered include: (a) review courses and symposia designed to present advances in the diagnosis and management of selected disorders of general interest; (b) courses of interest to physicians in a particular specialty; and (c) courses dealing with matters of public health and its administration, developed by the faculty of the Department of Epidemiology and Public Health.

Yale faculty also present a large number of teaching conferences at community hospitals throughout Connecticut, most of which qualify for continuing education credits. In addition, the regularly scheduled educational conferences of the Yale-New Haven Medical Center are open to all physicians. The School of Medicine also facilitates the presentation of continuing education programs for allied health personnel.

The Yale-New Haven Medical Center *Weekly Schedule of Events*, published by the Office of Continuing Medical Education, contains the most timely and detailed listing of all of these events. It is available upon request and can be accessed at <http://info.med.yale.edu/CME/schedules/weekly/>.

Also available for physicians and certain other health-care workers is a correspondence course, *The Medical Letter/Yale School of Medicine CME Program*. This is based upon the contents of *The Medical Letter*, a well-known and widely circulated biweekly medical publication. The examination program is developed twice a year, edited and supervised within the Office of Postgraduate and Continuing Medical Education.

Inquiries should be addressed to the Office of Continuing Medical Education, PO Box 208052, New Haven CT 06520-8052, telephone 203.785.4578.

Doctors of Medicine

CLASS OF 2002

- Felix Adler, B.S., University of San Francisco. *Positional Cloning of a 9;13 Chromosomal Translocation Breakpoint Implicated in Hypophosphatemic Rickets*. Internal Medicine. Brigham-Faulkner Hospital, Boston, Mass. Diagnostic Radiology. University of California, San Francisco, San Francisco, Calif.
- Arash S. Afari, B.S., University of California, Los Angeles. *Survival Outcome of Patients with Cervical Carcinoma Treated by Therapeutic Radiology at the Yale Cancer Center from 1980–2000*. Internal Medicine. Norwalk Hospital, Norwalk, Conn. Diagnostic Radiology. SUNY Health Science Center–Brooklyn, Brooklyn, N.Y.
- Vishal Agrawal, B.S., M.S., Yale University. *Impact of Federal Biomedical Research Funding on the Growth of U.S. Biotechnology Clusters*. Management Consulting. McKinsey & Company, Boston, Mass.
- Fred Aslan, B.S., Duke University. *Transplantation Ameliorates the Hypercoagulability of Endstage Renal Disease*. Genomics Corporate Strategy. CuraGen Corporation, New Haven, Conn.
- Rupal V. Badani, B.A., University of California, Berkeley. *Elementary Students' Understanding of the Common Cold*. Pediatrics. Cedars–Sinai Medical Center, Los Angeles, Calif.
- Brooke C. Bailey, B.A., Harvard University. *The Forces That Shape a Medical Student into an Intern*. Pediatrics. Massachusetts General Hospital, Boston, Mass.
- Naomi J. Balamuth, B.A., Columbia University. *The Effect of an ER-Selective Calcium ATPase Inhibitor on Nasal Potential Differences in Cystic Fibrosis Affected Mice*. Pediatrics. Children's Hospital of Philadelphia, Philadelphia, Pa.
- Sandeep Bansal, B.A., Yale University. *A Yoga Intervention for Adult Patients with Mild to Moderate Asthma*. Internal Medicine. Brigham and Women's Hospital, Boston, Mass.
- Hany S. Bedair, B.S., University of North Carolina. *Cardiac Mechanics and Flow in Transmyocardial Laser Revascularization in a Model of Chronic Ischemia*. Orthopaedic Surgery. University Health Center of Pittsburgh, Pittsburgh, Pa.
- Premila Bhat, B.A., Columbia University. *Agreement Between Physicians and Patients' Families on Prognostic Estimates in the Critically Ill*. Internal Medicine. New York Presbyterian Hospital–Columbia, New York, N.Y.
- Elizabeth M. Bird, B.A., Bowdoin College. *School-based Interventions for the Treatment and Prevention of Childhood Obesity*. Pediatrics. University of Michigan Hospitals, Ann Arbor, Mich.
- Diana I. Bojorquez, B.A., California State University. *Clinical and Biological Studies on Neurocutaneous Melanosis*. Pediatrics/Primary. University of California, San Francisco, San Francisco, Calif.
- Jon L. Boone, B.A., Vanderbilt University; M.Div., Yale University. *Demographic Characteristics of Adoptees Presenting to the Yale International Adoption Clinic and the Utility of Pre-Adoption Video Review*. Psychiatry. University of California, San Francisco, San Francisco, Calif.

- Hyacinth N. Browne, B.S., Dartmouth College. *The Role of Thyroid Dysfunction in Uterine Fibroid Growth*. Obstetrics and Gynecology. Yale-New Haven Hospital, New Haven, Conn.
- Jeffrey A. Bush, B.A., Yale University. *The Effect and Utility of Abdominal Computed Tomographic Examinations on the Diagnosis of Acute Appendicitis*. Transitional. Scripps Mercy Hospital, San Diego, Calif. Emergency Medicine. University of California, San Diego, San Diego, Calif.
- James S. Castle, B.A., Harvard University. *Effect of High Carbohydrate and High Fat Meals on 24-Hour Circulating Insulin, Leptin, and Free Fatty Acids*. Internal Medicine. Georgetown University Hospital, Washington, D.C. Neurology. Johns Hopkins University, Baltimore, Md.
- Anita R. Chandrasena, B.S., University of California, Davis. *The Use of Opioid Analgesics for Chronic Noncancer Pain and the Management of Opioid Analgesic Misuses: A Survey of Primary Care Physicians*. Internal Medicine. Yale-New Haven Hospital, New Haven, Conn.
- Jen Y. Chow, B.A., B.S., University of Arizona. *Astrocyte-Derived VEGF Mediates Survival and Tube Stabilization of Hypoxic Brain Microvascular Endothelial Cells In Vitro*. Surgery. Yale-New Haven Hospital, New Haven, Conn. Otolaryngology. Yale-New Haven Hospital, New Haven, Conn.
- Antony F. Chu, B.S., University of Wisconsin. *Does History of Trauma Predict Hypothalamic-Pituitary-Adrenal Differences as Measured by Cortisol and DHEA Among Healthy Individuals Following Exposure to Stress?* Internal Medicine. Hospital of the University of Pennsylvania, Philadelphia, Pa.
- Emmanuelle M. Clerisme, B.A., Johns Hopkins University. *Mechanism of Estrogen's Transcriptional Repression on the Expression of Cell Adhesion Molecules in Human Endothelial Cells*. Internal Medicine/Primary. Yale-New Haven Hospital, New Haven, Conn.
- Aaron S. Covey, B.S., University of Michigan. *Kosovar Children's Wartime Drawings: Gender, Age, and Proximity to Violence as Correlates to Content in Drawings*. Orthopaedic Surgery. Yale-New Haven Hospital, New Haven, Conn.
- John A. Davis, B.A., Harvard University; PH.D., Boston College. *Low-Valent Vanadium Chalcogenide Chemistry*. Internal Medicine. Massachusetts General Hospital, Boston, Mass.
- Marc A. Davis, B.S., California Polytechnic State University. *Survey of International Health Training Opportunities in Internal Medicine Residency Programs*. Emergency Medicine. Harbor-UCLA Medical Center, Los Angeles, Calif.
- Michelle W. Diu, B.A., Columbia University. *Liver-Spleen Scintigraphy in the Non-Invasive Diagnosis of Compensated Cirrhosis*. Internal Medicine. Yale-New Haven Hospital, New Haven, Conn.
- Nataki C. Douglas, B.A., Cornell University; PH.D., Yale University. *Requirements for the C-Myc Proto-oncogene in Physiologic T Cell Development*. Obstetrics and Gynecology. New York Presbyterian Hospital-Columbia, New York, N.Y.
- Trac M. Duong, B.S., Yale University. *Upregulation of BDNF mRNA in the Rat Hippocampus after Hypertermia-induced Seizures*. Internal Medicine. UCLA Medical Center, Los Angeles, Calif.

- Michael V. Dutka, B.S., University of Illinois, Urbana-Champaign. *Changes in CBF-BOLD Coupling Detected by MRI during and after Repeated Transient Hypercapnia in Rat*. Transitional. Hospital of Saint Raphael, New Haven, Conn. Diagnostic Radiology. Thomas Jefferson University, Philadelphia, Pa.
- Kier J. Ecklund, B.A., Stanford University. *Radiographic Measurements of the Wrist: A Database of Normal Carpal Measurements*. Orthopaedic Surgery. University of California, Irvine, Irvine, Calif.
- Amy M. Fahrenkopf, B.A., Yale University. *Children with Special Health Care Needs and Well Child Care: Assessing Quality of Medicaid Managed Care*. Pediatrics. Children's Hospital of Boston, Boston, Mass.
- Michael N. Fehm, B.A., Dartmouth College. *Foot Deformity in Spastic Hemiplegia: A Retrospective Review of 29 Patients Using Gait Analysis*. Orthopaedic Surgery. Harvard Combined Program, Boston, Mass.
- Scott R. Floyd, B.S., Vanderbilt University; PH.D., Yale University. *Expression of Amphiphysin 1 in Breast Carcinoma and Regulation by Phosphorylation and Intracellular Calcium*. Internal Medicine. Hospital of Saint Raphael, New Haven, Conn. Radiation Oncology. Joint Center for Radiation Therapy, Boston, Mass.
- Devesh S. Gandhi, B.A., Princeton University. *The Impact of Picture Archiving and Communication Systems (PACS) on Radiology Services*. Business Development. Millennium Pharmaceuticals, Cambridge, Mass.
- Wendy S. Garrett, B.S., M.S., PH.D., Yale University. *The Regulation of Endocytosis in Developing Dendritic Cells*. Internal Medicine. Brigham and Women's Hospital, Boston, Mass.
- Seth H. Goldbarg, B.A., Harvard University. *In Utero Indomethacin Alters O₂ Delivery to the Fetal Ductus Arteriosus: Implications for Persistent Postnatal Patency*. Internal Medicine. Brigham and Women's Hospital, Boston, Mass.
- Monique A. Grey, B.A., Yale University. *Apolipoprotein E Genotype and Severity of Cognitive and Psychotic Symptoms in Alzheimer's Disease*. Orthopaedic Surgery. Yale-New Haven Hospital, New Haven, Conn.
- Rebekah G. Gross, B.A., Stanford University. *Quality of Life of Pediatric and Young Adult Patients with Tourette Syndrome*. Internal Medicine/Primary. Massachusetts General Hospital, Boston, Mass.
- Anna Gibb Hallemeier, B.A., Harvard University. *Discussion Prognosis: Documented Communication with Elderly Patients with Cancer at the End of Life*. Internal Medicine/Pediatrics. Yale-New Haven Hospital, New Haven, Conn.
- Jennifer Hammerstein, B.A., Schiller International University; M.S., California State University. *Community-based Nutrition Interventions for the Treatment of Obesity in Adults*. Family Practice. South Nassau Community Hospital, Oceanside, N.Y.
- Dawn Harris, B.A., University of Florida. *Factors Predicting the Use of the Emergency Department: Who, Why, and What For?* Internal Medicine/Primary. Brigham and Women's Hospital, Boston, Mass.
- Eric P. Hazen, B.S., Brown University. *The Impact of Prenatal Cocaine Exposure on Language Development in Preschool-Age Children*. Pediatrics/Psychiatry. Massachusetts General Hospital, Boston, Mass.

- Heather L. Heimerdinger, B.A., Pomona College. *Effectiveness of Child Development Seminars for Police Officers, Mental Health Clinicians, and School Professionals*. Psychiatry. Yale-New Haven Hospital, New Haven, Conn.
- Amy Herman, B.A., M.A., Harvard University. *Maternal Behavior Revisited: Circuits, Genes, and the Crucial Role of Early Life Experience*. Internal Medicine. Beth Israel Deaconess Medical Center, Boston, Mass.
- Daniel A. Hoit, B.A., Johns Hopkins University. *The BCL-XL Protein Modifies Synaptic Transmission*. Neurosurgery. Tufts–New England Medical Center, Boston, Mass.
- Joshua A. Horenstein, B.A., Washington University. *18F-fluorodeoxyglucose Uptake as a Marker of Reversible Myocardial Ischemia*. Internal Medicine. Yale-New Haven Hospital, New Haven, Conn.
- Rocco A. Iannucci, B.A., Harvard University. *Patterns of Psychiatric Pathology and Mental Health Service Utilization in a Community Sample of Urban Adolescents with School Attendance Problems*. Psychiatry. Massachusetts General Hospital/Mclean, Boston, Mass.
- Julie M. Jaffe, B.A., Haverford College. *Association of SRD5A2 Genotype and Pathological Characteristics of Prostate Tumors*. Internal Medicine. Brigham and Women's Hospital, Boston, Mass.
- Amit K. Jha, B.A., University of California, Berkeley. *Parental Perspectives on Neonatal Circumcision*. Internal Medicine. UCLA Medical Center, Los Angeles, Calif.
- Kebba M. Jobarteh, B.A., Princeton University. *The Role of Human Rights in the Battle to Combat HIV/AIDS in Africa: A Youth Perspective*. Pediatrics. New York Presbyterian Hospital–Columbia, New York, N.Y.
- Darnita L. Johnson-LaBorde, B.A., Spelman College. *Hypertension among Pregnant Women in the Urban Area of Yaounde, Cameroon*. Psychiatry. Yale-New Haven Hospital, New Haven, Conn.
- Anita Karne, B.S., University of Tennessee. *Effects of Thromboprophylaxis on Pregnancy Outcomes in High Risk Obstetric Patients*. Internal Medicine/Primary. New York University School of Medicine, New York, N.Y.
- Robert Griffin Kelley, Jr., B.S., U.S. Naval Academy. *Dosimetry Parameters Using Ultrasound—Guided Transperineal Implants for Early Prostate Cancer*. Family Practice. Washington Hospital, Washington, Pa.
- Hardave S. Kharbanda, B.A., Washington University; M.M.P., University of Pennsylvania. *Diffusion Tensor Magnetic Resonance Imaging in the Human Spinal Cord with a Single-Shot Fast Spin-Echo Sequence*. Cancer Research. Massachusetts Institute of Technology, Cambridge, Mass.
- Karen J. Kim, B.A., Stanford University. *Carvum Septi Pellucidi in Tourette Syndrome*. Internal Medicine/Primary. University of California, San Francisco, San Francisco, Calif.
- Jennifer L. Kreshak, B.S., Stanford University. *Posterior Stabilization of the Cervicothoracic Spine: A Biomechanical Evaluation*. Orthopaedic Surgery. Westchester Medical Center, Valhalla, N.Y.
- Stephen C. Krieger, B.A., Columbia University. *The Impact of the Internet on the Doctor/Patient Relationship*. Internal Medicine. Saint Vincent's Hospital, New York, N.Y. Neurology. Mount Sinai Hospital, New York, N.Y.

- Tara C. Lagu, B.S., Purdue University. *Development and Validation of a New Definition of Biochemical Failure in Prostate Cancer*. Internal Medicine/Primary. Rhode Island Hospital/Brown University, Providence, R.I.
- Kate M. Lally, B.A., Wellesley College. *Unmasking Cryptic Epitopes after Loss of Immunodominant Tumor Antigens through Epitope Spreading*. Internal Medicine. Hospital of the University of Pennsylvania, Philadelphia, Pa.
- David B. Larson, B.S., Brigham Young University. *MD/MBA Programs in the United States: Evidence of a Change in Healthcare Leadership*. Pediatrics. University of Colorado School of Medicine, Denver, Colo.
- Brian Lee, B.A., Dartmouth College; PH.D., Yale University. *The Role of TAXREB107 in ICAM-1-mediated Intracellular Signaling*. Internal Medicine. Greenwich Hospital, Greenwich, Conn. Radiation Oncology. University of California, San Francisco, San Francisco, Calif.
- Ingi Lee, B.S., Yale University. *Effects on Lipid Metabolism of Metformin and Troglitazone in Patients with Type 2 Diabetes Mellitus*. Internal Medicine. Hospital of the University of Pennsylvania, Philadelphia, Pa.
- Susan J. Lee, B.S., Yale University. *Management of Severe Neonatal Necrotizing Enterocolitis in Extremely Low Birth Weight Infants (Weighing < 1000g): Role of Peritoneal Drainage*. Transitional. Saint Vincent's Hospital, New York, N.Y. Ophthalmology. Yale-New Haven Hospital, New Haven, Conn.
- Frederick C. Lewis, Jr., B.A., Yale University. *Microvascular Oscillations Elicited Locally by Combined Iontophoresis of Phenylephrine and Acupressure*. Anesthesiology. University of Wisconsin Hospital and Clinics, Madison, Wis.
- Vivian A. Lombillo, B.A., New College; PH.D., University of Colorado. *Development of In Vitro Assays to Study Mitotic Chromosome Movement*. Internal Medicine/Primary. Yale-New Haven Hospital, New Haven, Conn. Dermatology. University of Washington Affiliated Hospitals, Seattle, Wash.
- Mónica E. López, B.S., University of California, Los Angeles. *Role of Sialic Acid in the Formation of Tight Lysosome-derived Vacuoles during Trypanosoma Cruzi Invasion*. General Surgery. Einstein/Montefiore Medical Center, Bronx, N.Y.
- Karl A. Lozanne, B.A., Brown University. *Reactive Gliosis following Hippocampal Implantation*. Surgery. University Health Center of Pittsburgh, Pittsburgh, Pa. Neurosurgery. University Health Center of Pittsburgh, Pittsburgh, Pa.
- George King-Tso Lui, B.S., Duke University. *Psychological Sequelae and Perception of Traumatic Experiences among Survivors of Torture*. Internal Medicine/Pediatrics. Harvard Combined Program, Boston, Mass.
- Yee-Bun Benjamin Lui, B.A., Harvard University; M.A., Yale University. *An Appraisal of Hong Kong's Public Hospital System in 2001*. Internal Medicine/Primary. University of California, San Francisco, San Francisco, Calif.
- Kamyar Madani, B.A., B.S., Stanford University. *Chronic Renal Failure in Iranian Children*. Internal Medicine. University of California, San Francisco, San Francisco, Calif.
- Louis A. Marotti, Jr., B.S., Yale University. *Regulation of G Protein Signaling by Post-Translational Protein Modifications*. Surgery. Yale-New Haven Hospital, New Haven, Conn. Neurosurgery. Yale-New Haven Hospital, New Haven, Conn.

- Corey L. Martin, B.S., North Dakota State University. *Influences of Back-up Prescriptions on Satisfaction and Antibiotic Use*. Family Practice. University of North Dakota School of Medicine, Bismarck, N.Dak.
- Melissa A. McKirdy, B.A., Harvard University. *Characterization of the Immune Responses to the Tumor-Associated Hy-Antigen*. Pediatrics. Children's Hospital of Boston, Boston, Mass.
- Jeffrey M. Miller, B.A., Harvard University. *Conditional Expression of *WnT-1*, a Regulator of Gap Junctions, in the Murine Heart*. Psychiatry. New York Presbyterian Hospital–Columbia, New York, N.Y.
- José J. Miranda, B.A., University of Kansas. *The Use of Platelet Concentrate in Posterolateral Lumbar Spine Fusion: A Biomechanical, Histologic, and Radiographic Analysis*. Orthopaedic Surgery. Eisenhower Army Medical Center, Augusta, Ga.
- Biren P. Modi, B.S., M.S., Stanford University. *A Comparison of the Rate of Arteriosclerosis in Patients with the Marfan Syndrome and the General Population*. General Surgery. Brigham and Women's Hospital, Boston, Mass.
- Rashida B. N'Gouamba, B.A., New York University. *Radial Scars of the Breast: Correlation of Mammographic Features with Associated Histopathology*. Obstetrics and Gynecology. Mount Sinai Hospital, New York, N.Y.
- Vasanthi Lakshmi Narayan, B.A., Dartmouth College. *Utility of Intraoperative PTH Monitoring in Predicting Metabolic Control of PTH Levels in Secondary Hyperparathyroidism*. Internal Medicine. Yale–New Haven Hospital, New Haven, Conn.
- Hung Nguyen, B.A., University of Southern California. *Fetal Renal Doppler Peak Systolic Velocity and Perinatal Outcome in Intrauterine Growth Restriction*. Obstetrics and Gynecology. University of California, Irvine, Irvine, Calif.
- Andrew D. Norden, B.S., Brown University. *Use of SPECT Difference Imaging to Assess Subcortical Blood Flow Changes during Epileptic Seizures*. Internal Medicine. Brigham-Faulkner Hospital, Boston, Mass. Neurology. Harvard Medical School, Boston, Mass.
- Joyce M. Oen-Hsiao, B.S., Brown University. *Risk Factors for Delayed Diagnosis of Subarachnoid and Intracerebral Hemorrhage*. Internal Medicine. Hospital of Saint Raphael, New Haven, Conn.
- Leo R. Otake, B.A., University of Pennsylvania; PH.D., Yale University. *The Requirement of the U12-type Spliceosome in the Development of *Drosophila melanogaster*: Insights from P-element Mediated snRNA Gene Disruptions and the prospero Pre-mRNA*. Plastic Surgery. Yale–New Haven Hospital, New Haven, Conn.
- Patricia J. Pahk, B.A., Yale University. *Ability of Periorbitally Applied Anti-Glare Products to Improve Contrast Sensitivity in Conditions of Sunlight Exposure*. Internal Medicine. Greenwich Hospital, Greenwich, Conn. Ophthalmology. Yale–New Haven Hospital, New Haven, Conn.
- Jacqueline J. Park, B.S., Yale University. *Pregnancy and Childbirth Practices and Popular Literature in Twentieth-Century America: Historical and Social Perspectives*. Internal Medicine. New York Presbyterian Hospital–Columbia, New York, N.Y.

- Analene Joanne Pentopoulos, B.S., University of California, San Diego. *Post-Mastectomy Chest Wall Recurrence: Prognostic Significance of Clinical and Immuno-Histochemical Variables*. Obstetrics and Gynecology. Oregon Health Sciences University, Portland, Ore.
- Faith Nikki Pinkerton, B.A., California State University. *Cervical Cancer Information on the Internet: Health Information Seekers at Risk*. Family Practice. Middlesex Hospital Program, Middletown, Conn.
- Marlyanne M. Pol Rodriguez, B.S., Emory University. *Effect of Brain Region and Gender on Proton Magnetic Resonance Spectroscopy in Normal Subjects*. Internal Medicine. Hospital of Saint Raphael, New Haven, Conn. Dermatology. New York Presbyterian Hospital–Columbia, New York, N.Y.
- Jordan M. Prutkin, B.S., Yale University. *A History of Quality of Life Measurements*. Internal Medicine. Johns Hopkins Hospital, Baltimore, Md.
- Andy J. Redmond, B.A., Yale University. *A Novel Model for Studying Mechanisms of Fear/Stress in Rats: Investigation of a Predator Odor*. Surgery. Yale-New Haven Hospital, New Haven, Conn. Neurosurgery. Yale-New Haven Hospital, New Haven, Conn.
- Sarah R. Rettinger, B.A., Harvard University. *Calcitropic Hormones and Bone Resorption Markers in Healthy Older Men*. Internal Medicine. University of California, San Francisco, San Francisco, Calif.
- Neesha A. Rodrigues, B.A., Harvard University. *Differences in Pathological and Molecular Features of Intraductal Breast Cancer between Younger and Older Women*. Internal Medicine. Hospital of Saint Raphael, New Haven, Conn. Radiation Oncology. Massachusetts General Hospital, Boston, Mass.
- Sandra Scott, B.S., Wake Forest University. *Health Needs of Women Presenting to the Emergency Department: High-risk Behaviors and Preventable Conditions*. Emergency Medicine. Medical College of Virginia, Richmond, Va.
- Jennifer D. Sharp, B.S., College of William and Mary. *Urine and Serum Detection of Survivin, an Anti-Apoptosis Protein, in Genitourinary Malignancy*. Internal Medicine. Yale-New Haven Hospital, New Haven, Conn.
- Michael A. Sherling, B.S., Brown University. *Anti-Inflammatory and Wound-Healing Properties of Thymosin B₄ peptides in the Skin*. Internal Medicine. Brigham-Faulkner Hospital, Boston, Mass. Dermatology. Massachusetts General Hospital, Boston, Mass.
- Shannon M. Sheu, B.S., University of Southern California. *Thymidine Phosphorylase / PD-ECGF and Cytoskeletal Co-Localization in Human Keratinocytes In Vitro*. Internal Medicine. Stanford University Programs, Stanford, Calif. Dermatology. Stanford University Programs, Stanford, Calif.
- Nara Chi Sun Shin, B.A., Harvard University. *Genetic Risk Factors in Tamoxifen-Associated Thromboembolic Events during Breast Cancer Adjuvant Therapy*. Internal Medicine. VA Greater Los Angeles Health System, Los Angeles, Calif. Emergency Medicine. UCLA Medical Center, Los Angeles, Calif.
- Nathan A. Siegel, B.A., M.A., State University of New York, Buffalo. *Attitudes towards Cross-Cultural Medicine among Medical Students in the State of Connecticut*. Emergency Medicine. University of Michigan Hospitals, Ann Arbor, Mich.

- Michael S. Singer, B.S., PH.D., Yale University. *Analysis of the Differential Interactions between Olfactory Receptor Proteins and Scent Molecules. The Risk of Injury to Pakistani Children.* Internal Medicine. Brigham-Faulkner Hospital, Boston, Mass. Ophthalmology. Massachusetts Eye and Ear Infirmary, Boston, Mass.
- Deborah S. Smith, B.A., University of Missouri; M.P.E., PH.D., Washington University. *Effects of Self-Esteem Certainty, Contingency of Success, and Publicity on the Avoidance of Diagnostic Information.* Internal Medicine. University of Michigan Hospitals, Ann Arbor, Mich.
- Steven J. Song, B.S., Yale University. *The Temporal Relationship between Pediatric Asthma Admissions and Pollen Count.* Pediatrics. Rhode Island Hospital/Brown University, Providence, R.I.
- Charles P. Stowell, B.A., Princeton University. *Sequence and Expression Analysis of *AI3-1*, an *IL-3* and *Retinoic Acid Response Gene* Expressed in Myeloid Differentiation.* Psychiatry. New York Presbyterian Hospital – Cornell, New York, N.Y.
- Kiriaki Claire Stylianopoulos, B.A., Wellesley College. *Medical Costs of Child Maltreatment: Yale-New Haven Hospital and Connecticut.* Pediatrics. Yale-New Haven Hospital, New Haven, Conn.
- Scott M. Sutherland, B.A., Duke University. *A Study of Hepatitis C Seroprevalence in HIV-Infected Children at Yale-New Haven Children's Hospital.* Pediatrics. Stanford University Programs, Stanford, Calif.
- Bayan T. Takizawa, B.S., Cornell University. *Axon Regeneration after Spinal Cord Injury in Adult Rats.* Surgery. Yale-New Haven Hospital, New Haven, Conn. Urology. Yale-New Haven Hospital, New Haven, Conn.
- Karen E. Thomas, B.A., Harvard University. *The Diagnostic Accuracy of Kernig's Sign, Brudzinski's Sign, and Nuchal Rigidity in Adults with Suspected Meningitis.* Internal Medicine. Massachusetts General Hospital, Boston, Mass.
- Karen M. Tie, B.A., York College. *Anesthesia of the Chorda Tympani Nerve and Effect on Oral Pain.* Internal Medicine. Yale-New Haven Hospital, New Haven, Conn.
- Virginia A. Triant, B.A., Harvard University. *The Recognition and Determinants of Depression at a South African Primary Care Clinic.* Internal Medicine. Brigham and Women's Hospital, Boston, Mass.
- Jeanne K. Tyan, B.S., Massachusetts Institute of Technology. *Around-the-Clock Emergency Radiology Attending Coverage in the Interpretation of Abdominal CT Scans.* Emergency Medicine. Stanford University Programs, Stanford, Calif.
- M. Reza Vagefi, B.A., Johns Hopkins University. *Face Perception: Developing a Paradigm using Functional MRI to Assess Autistic Disorder.* Internal Medicine. Stanford University Programs, Stanford, Calif. Ophthalmology. University of California, San Francisco, San Francisco, Calif.
- Prashanth Vallabhajosyula, B.S., M.S., Yale University. *Transcription Factor, *XBP-1*, Is Essential for the Terminal Differentiation of B Cells into Immunoglobulin Secreting Plasma Cells.* General Surgery. Johns Hopkins Hospital, Baltimore, Md.
- Jennifer Y. Wang, B.S., Yale University. *The Role of CT Angiography in Survival Prognosis after Pancreaticoduodenectomy for Pancreatic Cancer.* General Surgery. University of California, San Francisco, San Francisco, Calif.

Kinari E. Webb, B.A., Reed College. *Long-term Effects of Malnutrition in IQ and Adaptive Behavior in Bornean Children*. Family Practice. Contra Costa Regional Medical Center, Martinez, Calif.

Luke S. Yoon, B.S., Yale University. *Evaluation of an Emergency Radiology Quality Assurance Program at a Level One Trauma Center and Clinical Consequences of Radiologic "Errors."* Internal Medicine. Brigham-Faulkner Hospital, Boston, Mass. Diagnostic Radiology. Massachusetts General Hospital, Boston, Mass.

STUDENTS RECEIVING THE M.D. AND PH.D. DEGREES

Nataki C. Douglas
Scott R. Floyd
Wendy S. Garrett
Brian Lee
Louis A. Marotti, Jr.
Leo R. Otake
Michael S. Singer

STUDENT RECEIVING THE M.D. AND M.DIV. DEGREES

Jon L. Boone

STUDENTS RECEIVING THE M.D. AND M.B.A. DEGREES

Aaron S. Covey
Devesh S. Gandhi
David B. Larson
Michael A. Sherling

STUDENTS RECEIVING THE M.D. AND M.P.H. DEGREES

Amy M. Fahrenkopf
Daniel A. Hoit
Kebba M. Jobarteh
Tara C. Lagu
José J. Miranda
Virginia A. Triant

STUDENT RECEIVING THE M.D. AND M.M.P. DEGREES

Hardave S. Kharbanda

Enrollment for 2002 – 2003

POSTGRADUATE STUDENTS

Members of the resident staff at Yale-New Haven Hospital and the West Haven Veterans Affairs Medical Center are enrolled as postgraduate students in the School of Medicine. Information on postgraduate students is available from the Office of Postgraduate Medical Education.

REGISTERED FOR THE DEGREE OF DOCTOR OF MEDICINE

Fourth-Year Class

Essmaeel Hussein Abdel-Dayem (B.S. Yale Univ. 1998), Cresskill, N.J.
Saeed Ahmed (B.A. Univ. California [Berkeley] 1997), Irvine, Calif.
Leah Eboso Ahoya (B.A. Wellesley Coll. 1999), Cambridge, Mass.
Wael Farouk Asaad (B.A. Amherst Coll. 1993), Burr Ridge, Ill.
Mathew Martin Augustine (B.A. Johns Hopkins Univ. 1998), Dix Hills, N.Y.
Jennie Woodlin Bailey (B.A. Dartmouth Coll. 1995), New Haven, Conn.
Ryan Keith Barton (B.S. Arizona State Univ. 1998), Mesa, Ariz.
Jason Robert Baynes (B.A. Princeton Univ. 1998), Teaneck, N.J.
Justin Eli Bekelman (B.A. Princeton Univ. 1995), Bethesda, Md.
Scott Adam Berkowitz (B.S. Yale Univ. 1998), DeWitt, N.Y.
Margaret Ellis Bourdeaux (B.A. Harvard Univ. 1997), Farmville, Va.
Jennifer Ray-ming Chao (B.S. Stanford Univ. 1996), Santa Monica, Calif.
Melissa Phyllis Chiang (B.A. Univ. Southern California 1997), Villa Park, Calif.
Tracey Alexander Cho (B.A. Harvard Univ. 1997), Cookeville, Tenn.
Younghoon Ronald Cho (B.S. McGill Univ. 1994), Toronto, Canada.
Justin Jones Cohen (B.S. Univ. Illinois 1999), Wheeling, Ill.
Andrew Jeremy Cooper (B.A. Univ. Pennsylvania 1999), Dallas, Tex.
John David Cowden (B.A. Bowdoin Coll. 1995), Prairie Village, Kans.
Adam Charles Cuker (B.S. Cornell Univ. 1998), Fayetteville, N.Y.
Christopher John Cutie (B.A. Univ. Pennsylvania 1999), Bridgewater, N.J.
Gregory James DeBlasi (B.A. Univ. Virginia 1998), Fredericksburg, Va.
Charles Sun Dela Cruz (B.S. Univ. Toronto 1994), Ontario, Canada.
Patricia Ann Diaz (B.A. Princeton Univ. 1986; J.D. Univ. Michigan 1991), Garden City, N.Y.
Michael Louis DiLuna (B.S. Yale Univ. 1998), Madison, Conn.
Abigail Louise Donovan (B.S. Yale Univ. 1998), Chestnut Hill, Mass.
Clare Nichols Drebtko (B.A. Univ. Delaware 1996), Stamford, Conn.
Louis Anthony Enriquez (B.S. Boston Coll. 1988; J.D. Suffolk Univ. Law School 1992), New Haven, Conn.
Mary-Ann Adiaha-Obor Etiebet (B.A. Yale Univ. 1996), Ontario, Canada.
Todd A. Fairchild (B.A. Harvard Univ. 1988), Cheshire, Conn.

Steven Alan Farmer (B.A. Stanford Univ. 1994; PH.D. Univ. London 1999), Orinda, Calif.

Caron Elizabeth Farrell (B.S. Univ. Texas 1990; PH.D. Univ. Illinois 1995), New Haven, Conn.

Khashayar Farsad (B.S. Brown Univ. 1995), McLean, Va.

Karin Elisabeth Finberg (B.S. Yale Univ. 1993), West Chester, Pa.

David Erik Geist (B.A. Harvard Univ. 1994), New Haven, Conn.

Matthew Nelson Goldenberg (B.A. Yale Univ. 1999), Birmingham, Ala.

Dita Anita Gratzinger (B.A. Univ. California [Berkeley] 1996), San Rafael, Calif.

Colin Fred Greineder (B.S. Yale Univ. 1997), Wellesley, Mass.

Roselia Guillen-Santana (B.A. Harvard Univ. 1998), San Fernando, Calif.

Garth Stephen Herbert (B.S. U.S. Military Acad. 1995), Branford, Conn.

Christopher Norris Herndon (B.S. Univ. California [San Diego] 1999), San Diego, Calif.

Adrian Douglas Hinman (B.A. Princeton Univ. 1996), Old Lyme, Conn.

Richard C. Hsu (B.A. Johns Hopkins Univ. 1994), Davis, Calif.

Micah Aaron Jacobs (B.A. Yale Univ. 1999), Houston, Tex.

Kevin Maurice Johnson (B.A. Harvard Univ. 1998), Brooklyn, N.Y.

Daniel J. Kanada (B.S. Yale Univ. 1999), Monte Sereno, Calif.

Charlton Chul Kim (B.S. Univ. California [Los Angeles] 1997), Fullerton, Calif.

Pamina Sueyon Kim (B.S. Stanford Univ. 1997), Burlingame, Calif.

Warren Tackhoon Kim (B.S. Yale Univ. 1992), Los Altos Hills, Calif.

Daniel Charles Kline (B.A. Harvard Univ. 1998), East Lyme, Conn.

John Jah-Hyun Koo (B.A. Univ. California [Berkeley] 1997), Fair Oaks, Calif.

Amar Krishnaswamy (B.A. Colgate Univ. 1998), Williamsville, N.Y.

Matthew Patterson Kronman (B.A. Yale Univ. 1998), Washington, D.C.

Namita Kumar (B.A. Yale Univ. 1997), Parsippany, N.Y.

David Shao-Min Lao (B.S. Stanford Univ. 1998), Irvine, Calif.

Maxwell Scott Hauser Laurans (B.A. Yale Univ. 1998), Providence, R.I.

Ryan Marc Lieberman (B.A. Univ. Pennsylvania 1995), Stoughton, Mass.

Maya Beth Lodish (B.A. Dartmouth Coll. 1998), Bethesda, Md.

J. Ryan Martin (B.A. Arizona State Univ. 1997), Bethesda, Md.

Daniel Martin Mayman (B.S. Univ. Michigan 1994), Ann Arbor, Mich.

Vivek Hallegere Murthy (B.A. Harvard Univ. 1997), Miami, Fla.

Saeher Arman Fatima Muzaffar (B.S. Yale Univ. 1998), St. Louis, Mo.

Satish Nagula (B.S. Univ. Virginia 1999), Alexandria, Va.

Jennifer Hyunjoo Nam (B.A. Harvard Univ. 1998), Warren, N.J.

Rahel Nardos (B.A. Franklin and Marshall Coll. 1997), Tallahassee, Fla.

Abhijit A. Patel (B.S., M.S. Yale Univ. 1995), Etobicoke, Ontario, Canada.

Daniel Duong Trung Pham (B.S. Stanford Univ. 1999), Yonkers, N.Y.

Melissa Kay Pradhan (B.S. Univ. Kansas Medical Center 1995), Mission, Kans.

Mari Rebane (B.A. Baylor Coll. 1998), Tallinn, Estonia.

Marta Elizabeth Rivera (B.S. California State Polytechnic Univ. [Pomona] 1999), Sylmar, Calif.

Lisa Patricia Roy (B.A. Georgetown Univ. 1995), Bristol, Conn.
 Daniel David Saketkhou (B.S. Stanford Univ. 1997), Rancho Palos, Calif.
 Jennifer Lee Schutzman (B.A. Harvard Univ. 1995), West Bloomfield, Mich.
 Rebecca Laura Seekamp (B.S. Yale Univ. 1999), Palm Bay, Fla.
 Jeffrey Andrew Seiden (B.A. Princeton Univ. 1999), East Brunswick, N.J.
 Christopher Andrew Severson (B.A. Wesleyan Univ. 1992), Belvedere, Calif.
 Tamara Zeudi Shaw (B.A. Reed Coll. 1996), Tobago, Trinidad and Tobago, West Indies.
 Elaine Lee Shay (B.S. Univ. Texas 1999), Bartlesville, Okla.
 Anil Mysore Shivaram (B.A. Columbia Univ. 1995), Hinsdale, Ill.
 Gabriel Pearce Simon (B.A. Earlham Coll. 1998), Concord, Mass.
 Abhishek Sinha (B.S. Stanford Univ. 1998), San Diego, Calif.
 Arien Javon Smith (B.A. Univ. Rochester 1998), Freeport, N.Y.
 Matthew Stiebel (B.A. Yale Univ. 1998), Avon, Conn.
 Grace Kyung-Eun Suh (B.S. Yale Univ. 1999), Niles, Ill.
 Anya Mari Szeplin (B.S. Rutgers Univ. 1989), Arlington, Mass.
 Michael Donald Tang (B.S. Massachusetts Inst. of Technology 1991), McLean, Va.
 Kathryn Marie Teel (B.A. Williams Coll. 1998), Lafayette, Calif.
 Jennifer Sara Teitelbaum (B.A. Wesleyan Coll. 1990), Baltimore, Md.
 Michael Gregory Thompson (B.S. Iowa State Univ. 1996), State Center, Iowa.
 Joahd Malik Toure (B.A. Harvard Univ. 1999), Stoughton, Mass.
 Nimi Lola Tuamokumo (B.A. Princeton Univ. 1999), Cottondale, Ala.
 Juan Gabriel Vasquez (B.S. California State Univ. 1998), Hawthorne, Calif.
 Boris David Veysman (B.A. Cornell Univ. 1999), Budd Lake, N.J.
 Bertrand Lee Wicholas (B.A. Cornell Univ. 1994), Bellingham, Wash.
 Emily Katherine Wilk (B.A. Yale Univ. 1996), Princeton, N.J.
 Jianling Yuan (B.S., M.S. Yale Univ. 1994), Shanghai, People's Republic of China.

Total, 95

Third-Year Class

Hardean Eric Achneck (B.A. Yale Univ. 2000), New Haven, Conn.
 Kathryn Nelson Adamiak (B.S. Brown Univ. 1999), Medford, N.J.
 Teeb Najib Al-Samarrai (B.S. Univ. California [Los Angeles] 2000), Torrance, Calif.
 Elizabeth Kagan Arleo (B.A. Yale Univ. 1999), New York, N.Y.
 Eliza Ann Auerbach (B.A. Amherst Coll. 1999), Ridgefield, Conn.
 David Mathew Aversa (B.A. Brown Univ. 1995, M.P.H. Boston Univ. 2000), Woodbridge,
 Conn.
 Richard Mahir Awdeh (B.S. Emory Univ. 1999), Memphis, Tenn.
 Vernee Nicole Belcher (B.S. Univ. Pittsburgh 2000), Mentor, Ohio.
 Aaron Jacob Berger (B.A., M.S. Univ. Pennsylvania 2000), Fayette, Ky.
 Ranjit Singh Bindra (B.S. Yale Univ. 1998), Arlington, Va.
 Jennifer Melissa Blair (B.S. Yale Univ. 1999), Saginaw, Mich.
 Michael Howard Bloch (B.A. Univ. Pennsylvania 2000), New York, N.Y.
 Allyson Kelly Bloom (B.S. Stanford Univ. 1999), Houston, Tex.

- Victoria Lee Bruegel Sanchez (B.S. Boston Univ. 1993), Woodbury, Conn.
William Reece Burns (B.S. Wake Forest Univ. 1999), New Providence, N.J.
Julie Danielle Cantor (B.A. Stanford Univ. 1995), New Haven, Conn.
Cordelia Wheeler Carter (B.A. Yale Univ. 1998), Hockessin, Del.
Jillian Suzanne Catalanotti (B.S. Yale Univ. 2000), Elmont, N.Y.
Anamika Margaret Chaudhuri (B.A. Tufts Univ. 2000), Medford, Mass.
Andrew Anchung Chen (B.S. Yale Univ. 1999), Ontario, Canada.
Keith Adam Choate (B.S. Stanford Univ. 1995), Walnut Creek, Calif.
Richard Joonoh Chung (B.A. Harvard Univ. 2000), Woodbridge, Conn.
Gina Marie Constantine (B.A. Yale Univ. 2000), Fair Oaks, Calif.
Dagan Edrick Coppock (B.S. Univ. Tennessee 1999), Powell, Tenn.
Nicholas Brittain Countryman (B.S. Univ. Notre Dame 2000), Indianapolis, Ind.
Douglas Jackson Davis (B.A., B.S. St. Mary's Univ. 1999), Selma, Tex.
Neelendu Dey (B.S. Harvard Univ. 2000), Bridgeton, Mo.
Vicente Antonio Diaz (B.A. Brown Univ. 2000), Corona, N.Y.
Bao Duy Duong (B.S. Univ. California [Los Angeles] 2000), Manhattan Beach, Calif.
Ugonna Ada Duru (B.A. Princeton Univ. 2000), Maplewood, N.J.
Craig H. Dushey (B.A. Yale Univ. 1998), Harrison, N.Y.
Michael Louis Eisenberg (B.A. Rice Univ. 1999), Houston, Tex.
Paul S. El-Fishawy (B.A. Princeton Univ. 1992), Arlington, Va.
Spencer James-Garrard Epps (B.S. Georgetown Univ. 1999), New York, N.Y.
Katharine Fast (B.A. Harvard Univ. 1994, M.A. Columbia Univ. 1996), New Haven, Conn.
Amir Tahmasb Fathi (B.S. Yale Univ. 2000), Orlando, Fla.
Myriam Almeida Fernandes (B.A. Wesleyan Univ. 2000), Praia, Santiago, Cape Verde.
Thomas Victor Fernandez (B.A. Princeton Univ. 1997), Bridgewater, N.Y.
Jennifer Lynn Fines (B.A. Harvard Univ. 1999), Tewksbury, Mass.
John Kiene Forrest (B.A. Bowdoin Coll. 1998), New Haven, Conn.
Adam Scott Frost (B.S. Brigham Young Univ. 2000), Provo, Utah.
Darlene Gabeau (B.A. Wellesley Coll. 1994), Hollis, N.Y.
Rupali Gandhi (B.S. Stanford Univ. 1997), Cedar Grove, N.J.
Sharmin Ghaznavi (B.S. Massachusetts Inst. of Technology 2000), Ann Arbor, Mich.
Saif Ashfaq Ghole (B.S. Univ. California [Irvine] 2000), Garden Grove, Calif.
Sharon Kathleen Gill (B.S. California Polytechnic State Univ. 1991), Portola Valley, Calif.
Sophia Elena Gimenez (B.A. Univ. Michigan [Ann Arbor] 2000), Ann Arbor, Mich.
Zachary David Goldberger (B.A. Brown Univ. 1998), Newton Center, Mass.
Eric Michael Golding (B.S. Univ. Pennsylvania 2000), Wyckoff, N.J.
Jason Wells Griffith (B.A. Vanderbilt Univ. 1999), Dallas, Tex.
Eric Albert Gustafson (B.S. Yale Univ. 1999), Rochester Hills, Mich.
Cinthia Vanesa Guzman (B.A. Harvard Univ. 2000), Miami, Fla.
Karl Erick Haglund (B.S. Univ. Illinois 1991), Rockford, Ill.
Joseph Michael Harburger (B.S. Yale Univ. 1999), New York, N.Y.
Matthew Spiller Hayden (B.A. Oberlin Coll. 1998), Pittsford, Vt.

Timothy Jensen Henrich (B.A. Oberlin Coll. 1996), Hamden, Conn.
Michael Emmanuel Herce (B.A. Univ. Virginia 1999), Woodbridge, Va.
Milton Wei Chan Hwang (B.A. Univ. Pennsylvania 2000), Elmhurst, N.Y.
Edidiong Nsidibe Ikpe (B.A. Harvard Univ. 1999), Miami, Fla.
Jesse Cimarron James (B.S. Florida A&M Univ. 2000), Atlanta, Ga.
Virginia Grace James (B.A. Harvard Univ. 2000), Birmingham, Ala.
Ryan Sykes Jean-Baptiste (B.S. Yale Univ. 1999), Brooklyn, N.Y.
Kimberly Lauren Johung (B.A. Yale Univ. 1999), Burlingame, Calif.
Kohar Jones (B.A. Yale Univ. 1999), Tenafly, N.J.
Niya Armentha Jones (B.A. Brown Univ. 2000), Washington, D.C.
Grace Mariko Kalish (B.S. Stanford Univ. 1998), Santa Clara, Calif.
Paul Joseph Kim (B.S. Stanford Univ. 1997), Monterey, Calif.
Melissa Louise Kirkwood (B.S. Univ. Florida 2000), Gainesville, Fla.
John Robert Koethe (B.A. Oberlin Coll. 1998), Shorewood, Wis.
Sarah Kohnstamm (B.A. Bowdoin Coll. 1996), New Haven, Conn.
Mona Krishna Kotecha (B.A. Dartmouth Coll. 1999), Hutchinson, Kans.
Mandy Beth Krauthamer (B.S. Cornell Univ. 2000), Baldwin, N.Y.
Liana Elizabeth Kretschmar (B.A. Brown Univ. 1998), Chestnut Hill, Mass.
Inna Landres (B.S. Yale Univ. 1999), Stamford, Conn.
Naudia Natalee Lauder (B.A. Johns Hopkins Univ. 1999), Maple Heights, Ohio.
Aimee Elizabeth Lee (B.S. Brown Univ. 2000), Weston, Mass.
Alfred Ian Lee (B.S. Stanford Univ. 1994), Bryan, Tex.
Rachel Chaya Levy (B.A. Yale Univ. 1998), Brooklyn, N.Y.
Brent Patrick Little (B.A. Transylvania Univ. 1994, M.A. Vanderbilt Univ. 1999,
B.A. Univ. Kentucky 2000), Louisville, Ky.
Coeurlida Louis (B.A. Wellesley Coll. 1999), Randolph, Mass.
Edison Alejandro Machado (B.A. Cornell Univ. 1999), Corona, N.Y.
Kavita Mariwalla (B.A. Yale Univ. 1998), Melville, N.Y.
Andre Romell Matthews (B.S. Morehouse Coll. 2000), Chicago, Ill.
Clifton Craig Mo (B.S. U.S. Military Academy 2000), Pueblo West, Colo.
Louis Peter Moreno (B.A. Duke Univ. 1996), New Haven, Conn.
Darrell L. Morris (B.A. Howard Univ. 1998, B.S. Univ. District of Columbia 1998),
Richmond, Va.
Brian Vala Nahed (B.S. Univ. California [Los Angeles] 2000), Los Angeles, Calif.
Benjamin Paul Negin (B.S. Yale Univ. 2000), Succasunna, N.J.
James Park (B.A. Harvard Univ. 2000), Jackson Heights, N.Y.
Trevor Grant Phillips (B.S. Linfield Coll. 2000), Sunny Valley, Ore.
Eric Michael Poolman (B.S. Stanford Univ. 1995), Redwood City, Calif.
Rahul Rajkumar (B.A. Yale Univ. 2000), Somers, N.Y.
Reena Neela Rupani (B.A. Harvard Univ. 1999), Leawood, Kans.
Mariah Cushman Ruth (B.A. Stanford Univ. 1999), Glencoe, Ill.
Hilary Furste Ryder (B.A. Univ. Chicago 1999), Goleta, Calif.
Ragui Wassef Sedeek (B.S. Univ. California [Irvine] 2000), Midlothian, Va.
Michael David Shapiro (B.S. Univ. California [Los Angeles] 2000), Calabasas, Calif.

Margo Deborah Simon (B.A. Wesleyan Univ. 1999), Elkins Park, Pa.
Robyn Dale Siperstein (B.A. Yale Univ. 2000), Watchung, N.J.
John Milton Soderberg (B.S. Univ. Michigan [Ann Arbor] 1995, M.P.H. Boston Univ. 1999), Marquette, Mich.
Dena Judith Springer (B.A. Harvard Univ. 1999), West Hartford, Conn.
Matthew Daniel Streckert (B.S. Washington Univ. 2000), Naperville, Ill.
Ashraf Thabet (B.A. Cornell Univ. 2000), Brooklyn, N.Y.
Parsia A. Vagefi (B.A. Johns Hopkins Univ. 1998), Tyler, Tex.
Erica Tse-Fawn Wang (B.S. Yale Univ. 2000), San Francisco, Calif.
Jared Marc Weiss (B.S. Brown Univ. 2000), New City, N.Y.
Carlos Knute Wesley (B.A. Princeton Univ. 1997), Ames, Iowa.
Rachel Paula Willner (B.A. Harvard Univ. 1997), Tenafly, N.J.
Ilene Yizhen Wong (B.A. Univ. Pennsylvania 1998), Gaithersburg, Md.
Jenny Huiju Yiee (B.A. Univ. Southern California 2000), Las Vegas, Nev.

Total, 110

Second-Year Class

Marwah Abdalla (B.A. Harvard Univ. 2000), New Rochelle, N.Y.
Yuri Agrawal (B.S. Harvard Univ. 2000), South Windsor, Conn.
Suzanne Jane Baron (B.A. Harvard Univ. 2001), Melrose, Mass.
Cristina Mary Baseggio (B.A. Dartmouth Coll. 1997), Mattapoisett, Mass.
Kwabena Lartey Blankson (B.A. Harvard Univ. 2001), Birmingham, Ala.
Michele Sophia Buragas (B.S. Providence Coll. 2000), Mount Vernon, N.Y.
Rohit Chandwani (B.A. Harvard Univ. 2001), Emerson, N.J.
Nora Cheung (B.S. Yale Univ. 2001), Oakland, Calif.
Connie Chung (B.S. Univ. Southern California 2001), Rancho Palos Verdes, Calif.
Richard James Crockett (B.S. Yale Univ. 1999), Yorktown Heights, N.Y.
Tina Dasgupta (B.S. Univ. Alberta 2001), Alberta, Canada.
Jennifer Suzanne Davids (B.A. Harvard Univ. 2001), Boston, Mass.
Matthew Steven Davids (B.A. Harvard Univ. 2000), Swampscott, Mass.
Scott David Degregorio (B.S. Brown Univ. 2001), Charlestown, R.I.
Sarah Beth Doernberg (B.A. Harvard Univ. 2001), Atlanta, Ga.
Annika Sara Dronge (B.A. Barnard Coll. 1997), Tenafly, N.J.
Sadiqa Aderoishan Edmonds (B.S. Spelman Coll. 2001), Albany, Ga.
Amichai Joshua Erdfarb (B.A. Yeshiva Univ. 1999), Monsey, N.Y.
Jennifer Fain (B.A. Williams Coll. 1996), Cambridge, Mass.
Jing Feng (B.S. Marquette Univ. 2001), Brookfield, Wis.
Odicie Okeda Fielder (B.S. Univ. California [Los Angeles] 2000), Pomona, Calif.
Michele Catherine Flagge (B.S. Stanford Univ. 1999), Carmel, N.Y.
Simmie Lorene Foster (B.A. Univ. California [Berkeley] 2000), Berkeley, Calif.
Ariel S. Frey (B.A. Harvard Univ. 1999), Acton, Mass.
Adam Gafni-Kane (B.A. Univ. Michigan 1997), Norwalk, Conn.
Jorge Augusto Galvez (B.S. Univ. Miami 2001), Miami, Fla.

Daniel Peter Gibson (B.A. Univ. Virginia 2000), Charlottesville, Va.
Jennifer Margaret Giltneane (B.S. Univ. Tennessee [Knoxville] 1999), Athens, Tenn.
Brendon Lewis Graeber (B.A. Yale Univ. 2001), Morgantown, W.Va.
Jane Awuramma Gwira (B.A. Wellesley Coll. 2001), Bowie, Md.
Justin Boyd Heller (B.S. Univ. California [Los Angeles] 2001), Huntington Beach, Calif.
Lianne Aya Hirano (B.A. Bowdoin Coll. 1999), Honolulu, Hawaii.
Douglas Michael Housman (B.A. Johns Hopkins Univ. 2000), Chestnut Hill, Mass.
Douglas William Jacobson (B.A. Colorado Coll. 1998), Menlo Park, Calif.
Rasika Priya Jayasekera (B.A. Yale Univ. 1999), Lexington, Ky.
Powell Oliapuram Jose (B.S. Yale Univ. 2001), Prospect, Ky.
Deborah Elizabeth Kaplan (B.A. Bowdoin Coll. 1999), Lebanon, Conn.
Jessica Anne Kattan (B.S. Univ. California [Davis] 1999), Carmel, Calif.
Barton Charles Kenney (B.A. Brown Univ. 1999), Baltimore, Md.
Lauren Elaine Kernochan (B.A. Smith Coll. 2000), Santa Monica, Calif.
Davender Singh Khera (B.A. Yale Univ. 2001), Toronto, Ohio.
Janet Heejung Kim (B.A. Univ. California [Berkeley] 2000), Fremont, Calif.
Eyal Yaacov Kimchi (B.A. Harvard Univ. 2000), Beverly Hills, Calif.
Brett Andrew King (B.A. Univ. California [Santa Cruz] 1992), New Haven, Conn.
Jason Anthony Knight (B.S. Yale Univ. 2000), Staten Island, N.Y.
Ameya Ravindrakum Kulkarni (B.S. Boston Univ. 2001), Middletown, N.J.
Christopher Michael Kwong (B.S. Univ. California [San Diego] 1999), Concord, Calif.
Igor Latic (B.A. Northwestern Univ. 2001), Hamtramck, Mich.
Christoph Ilsuk Lee (B.A. Princeton Univ. 1998), Oxnard, Calif.
Lorky Nercessian Libaridian (B.A. Yale Univ. 1999), Cambridge, Mass.
Catherine Jane Loerke (B.A. Stanford Univ. 1998), New Haven, Conn.
Javier Lopez (B.S. Univ. Miami 2001), Miami, Fla.
Janelle Luk (B.A. Cornell Univ. 2001), Flushing, N.Y.
Karina Ann Lund-Egan (B.A. Oberlin Coll. 1996), New Haven, Conn.
Christina Beth Lynch (B.A. Amherst Coll. 2000), Hatboro, Pa.
Travis Gardner Maak (B.S. Stanford Univ. 2001), Heber, Utah.
Gregory Aran Magee (B.A. Yale Univ. 1999), Wildwood, Mo.
Ayonija Maheshwari (B.S. Ohio State Univ. 2001), Safat, Kuwait.
Erin Margaret Mahony (B.A. Colgate Univ. 2000), Belmont, Mass.
Ernest Israel Mandel (B.A. Harvard Univ. 2001), New Haven, Conn.
Benjamin Reuben Marks (B.A. Univ. Illinois 2001), Skokie, Ill.
Arjun Vijay Masurkar (B.S. Massachusetts Inst. of Technology 2001), Chelmsford, Mass.
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Lisa Margaret Millman (B.S. Fairfield Univ. 2000), Mount Vernon, N.Y.
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Sara Michelle Nayeem (B.A. Harvard Univ. 1999), New York, N.Y.
Chukwuemeka Chinedu Nwanze (B.A. Harvard Univ. 2000), Silver Spring, Md.
David Anders Ornan (B.S. Brown Univ. 2000), Lynchburg, Va.

Ali Kemal Ozturk (B.A. Johns Hopkins Univ. 2001), Kenner, La.
Meg Pearson (B.A. Stanford Univ. 1999), New Haven, Conn.
Rajesh Chalamalase Rao (B.S. Univ. Wisconsin 2000), Brookfield, Wis.
Bradley Scott Raphael (B.A. Univ. Rochester 2000), Fayetteville, N.Y.
Amar Naresh Rewari (B.A. Temple Univ. 2000), Somerset, N.J.
Brenda Marie Ritson (B.S. Boston Univ. 1999), New Haven, Conn.
Shari Stern Rogal (B.S. Yale Univ. 2001), Pittsburgh, Pa.
Robert Brian Schonberger (B.A. Yale Univ. 1996), New York, N.Y.
Hyman Maurice Scott (B.S. Stanford Univ. 2000), Olympia Fields, Ill.
Roshan Pradip Shah (B.A. Dartmouth Coll. 2001), Camden, N.Y.
Grace Li Smith (B.A. Rice Univ. 1998), West Haven, Conn.
Jennifer Hale Smith (B.A. Columbia Univ. 1994), Zanesville, Ohio.
Sandra Sharann Smith (B.S. U.S. Naval Academy 2001), Apollo, Pa.
Jocelyn Soffer (B.A. Yale Univ. 1998), Katonah, N.Y.
Caroline Lauren Sokol (B.A., M.S. Univ. Pennsylvania 2001), Marlton, N.J.
Martine Marie Solages (B.A. Harvard Univ. 2001), Piscataway, N.J.
June Thalia Spector (B.A. Harvard Univ. 2001), Colts Neck, N.J.
Khoonyen Elisa Tay (B.A. Princeton Univ. 2000), West Windsor, N.J.
Connor James Telles (B.A. Dartmouth Coll. 2001), Fresno, Calif.
Dimitrios Tsirigotis (B.S. McGill Univ. 2001), Montreal, Quebec, Canada.
Arnold Joseph Valenson (B.S. Univ. Houston 2000), Houston, Tex.
Tamara Lyn Vanderwal (B.S. Trinity Western Univ. 1999), Vernon, Canada.
Anil Someswar Vedula (B.S. Duke Univ. 2001), North Potomac, Md.
Douglas George Walled (B.A. Case Western Reserve Univ. 2001), Lorain, Ohio.
Marlynn Hwa Wei (B.S. Yale Univ. 2001), Denton, Tex.
Curtis Howard Weiss (B.S. Yale Univ. 2001), Chicago, Ill.
Mary Catherine Whitman (B.A. Harvard Univ. 2001), Rockville, Md.
Samantha Louise Wood (B.S. Duke Univ. 1999), Bethel, Vt.
Jessica Eve Yager (B.A. Harvard Univ. 1997), Cambridge, Mass.
Yvonne Sue Yang (B.A. Yale Univ. 2000), Fresno, Calif.
Mihae Eunice Yun (B.S. Yale Univ. 1998), Lebanon, Pa.
Anna Yusim (B.S. Stanford Univ. 1999), Wheeling, Ill.
Michelle Nabulum Zikusoka (B.A. Yale Univ. 2001), Princeton Junction, N.J.

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First-Year Class

Shoab Syed Ahmed (B.S. Johns Hopkins Univ. 2001), Prospect, Ky.
Brittany Albright (B.S. Weber State Univ. 2001), Plain City, Utah.
Jason Randolph Andrews (B.A. Yale Univ. 2002), Algonquin, Ill.
Natasha Marie Berna Archer (B.S. Yale Univ. 1999), Forest Hills, N.Y.
Dara Beth Arons (B.A. Yale Univ. 1996), West Newton, Mass.
Nana Akua Agyeiwaa Asafu-Agyei (B.S. Yale Univ. 2002), Accra, Ghana.

Calvin Langston Barnes (B.A., B.A. Oberlin Coll. 2002), Blacksburg, Va.
Simon Roderick Albert Best (B.A. Yale Univ. 2002), Brockville, Ontario, Canada.
Wenya Linda Bi (B.A., M.A. Harvard Univ. 2002), Gaithersburg, Md.
Kira O'Neil Bona (B.A. Cornell Univ. 2002), Montague, Mass.
Arianne Jeanve Boylan (B.A. Wellesley Coll. 2002), Bethesda, Md.
Juliana Capatosto (B.A. Yale Univ. 2000), Bellrose, N.Y.
Allison Fitzgerald Carey (B.S. Pennsylvania State Univ. 2002), Pittsburgh, Pa.
Joanna Yee King Chin (B.A. Harvard Univ. 1999), Brooklyn, N.Y.
Renu Chundru (B.A. Univ. Pennsylvania 2001), Yardley, Pa.
Marcus Philip Coe (B.A. Dartmouth Coll. 2000), Barrington, Ill.
Jana Alexandra Colton (B.A. Harvard Univ. 2000), Boca Raton, Fla.
Joseph Adam Cousin (B.S., M.S. Harvard Univ. 2002), Lutz, Fla.
Bidhan Bihari Das (B.A. Rice Univ. 2002), Houston, Tex.
Thomas Andrew Dewland (B.A. Dartmouth Coll. 2002), Woodbridge, Va.
Todd Lawson Ebbert (B.S. Brigham Young Univ. 2001), New Haven, Conn.
Mariel Aida Focseneanu (B.A. Univ. Pennsylvania 2002), Rye, N.Y.
Ahmed Mohamed Ghazi (B.S. Massachusetts Inst. of Technology 2002), Dokki Cairo,
Egypt.
Veronique Anne Sabine Griffith (B.A. Harvard Univ. 2002), North Haven, Conn.
Natalie Guerrier (B.A. Harvard Univ. 2001), New Haven, Conn.
Ryan Isaac Huffman (B.S. Washington Univ. 2002), Parkerburg, W.Va.
Rebecca Stephanie Hunter (B.A. Princeton Univ. 2001), Guaynabo, Puerto Rico.
Emlyn Starr Jones (B.A. Vassar Coll. 1994, M.P.H. Emory Univ. 1999), Needham, Mass.
Peter Joshua Juran (B.A. Amherst Coll. 2002), Metairie, La.
Pavlos Z. Kaimakliotis (B.A. Wesleyan Univ. 2002), Little Neck, N.Y.
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Erin Nicole Kiehna (B.A., B.S. Vanderbilt Univ. 2002), Collierville, Tenn.
Jessica Lynn Kirk (B.S. Stanford Univ. 2001), Seabeck, Wash.
Kendra Marie Klang (B.A. Johns Hopkins Univ. 2001), Everett, Wash.
Phoebe Este Koch (B.A. Brown Univ. 1998), Concord, Mass.
Shlomo Asher Koymfan (B.A. Yeshiva Univ. 2002), Teaneck, N.J.
Lauren Kendall Krause (B.A. Northwestern Univ. 2001), Castle Rock, Colo.
Victoria Kuohung (B.A. Univ. Michigan [Ann Arbor] 1992, J.D. Harvard Univ. 1996),
Chicago, Ill.
Meghan Brooks Lane (B.A. Univ. California [Berkeley] 2001), Novato, Calif.
Ilse Anne Larson (B.A. Stanford Univ. 2000), Bainbridge Island, Wash.
Aram Jonathan Lee (B.A. Yale Univ. 2000), Potomac, Md.
Alyssa Rose Letourneau (B.S. Brown Univ. 2001), Rochester, N.H.
Rachel Rose Light (B.A. Swarthmore Coll. 1999), New York, N.Y.
David Liska (B.A., M.A. Johns Hopkins Univ. 2002), Vienna, Austria.
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Alison Michelle Maresh (B.S. Stanford Univ. 2002), Farmington, Conn.
Maria Mazzeo (B.S. Cornell Univ. 2000), Slingerlands, N.Y.

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Lisa Elaine McDonald (B.S. Univ. Texas [Austin] 2002), Pinehurst, Tex.
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Ahou Meydani (B.A. Brown Univ. 2001), Newton, Mass.
Matthew Mark Miller (B.S. Univ. Utah 2002), Farmington, Utah.
Karen Sarena Morris (B.A. York Coll. [Pennsylvania] 2002), Harrisburg, Pa.
Arnab Mukherjee (B.A. George Washington Univ. 2002), Alpharetta, Ga.
David Eric Myles (B.S. Morehouse Coll. 2002), Peachtree City, Ga.
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Sunanda M. Pejavar (B.A. Univ. California [Berkeley] 2000), Cupertino, Calif.
Huy Quoc Phun (B.S. Univ. California [Los Angeles] 2002), Simi Valley, Calif.
Craig Daniel Platt (B.A. Univ. Pennsylvania 2002), Wyckoff, N.J.
Victoria Kathryn Potterton (B.A. Dartmouth Coll. 2002), Fairfax, Va.
Alain Ramirez (B.S. Univ. Miami 2002), Hialeah, Fla.
Masha Rand (B.A., M.A. Univ. Chicago 1997), Brooklyn, N.Y.
Deepak Angara Rao (B.A. Harvard Univ. 2001), Lafayette Hill, Pa.
Michael Stephen Reel (B.A. Columbia Univ. 1989, M.B.A. Univ. Chicago 1993), New York, N.Y.
Jason David Roh (B.A. Amherst Coll. 2001), Freeport, Ill.
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Russell James Hubba Ryan (B.A. Amherst Coll. 2002), Marblehead, Mass.
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Akash Deelip Shah (B.A. Univ. Pennsylvania 2002), Fort Worth, Tex.
Priya Bhausahab Shete (B.A. Johns Hopkins Univ. 2001), Naperville, Ill.
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 Timothy Brian Sullivan (B.A. Univ. Notre Dame 1993), Sterling, Ill.
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 Jenli D. Waters (B.A. Johns Hopkins Univ. 2002), Sugar Land, Tex.
 Dana Alexandra Weiss (B.A. Yale Univ. 2001), North Haven, Conn.
 William Lamont Worden (B.A. Brigham Young Univ. 2002), Greenacres, Wash.
 Charlotte Audris Wu (B.A. Stanford Univ. 2001), San Diego, Calif.
 Tong Yang (B.S. Peking Univ. 1991, PH.D. Brandeis Univ. 1997), Irving, Tex.

Total, 100

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Eric Ackah (B.S. Delaware State Univ. 1998), Dover, Del.
 Anne Lenore Ackerman (B.S. Yale Univ. 1998), New Haven, Conn.
 Sarah Aline Adams (B.A. Swarthmore Coll. 1994, M.S. Johns Hopkins Univ. 1996), New Haven, Conn.
 Nduka Mgbechinyer Amankulor (B.S., B.S. New York Univ. 1998), Elmont, N.Y.
 Chloé Evelyn Atreya (B.A. Princeton Univ. 1998), Ann Arbor, Mich.
 Nabil Wagih Awadallah (B.S. City Coll. New York 1999), Flushing, N.Y.
 Paola Carolina Ayora (B.A. Univ. Pennsylvania 1997), Quito, Ecuador.
 Rajesekhara Rao Ayyagari (B.A. Swarthmore Coll. 1996), Baldwin, Md.
 Charles Alexander Baillie (B.A. Univ. Edinburgh 1995), Edinburgh, Scotland.
 Frances Beth Balamuth (B.S. Brown Univ. 1995), Wynnewood, Pa.
 Mark Alan Berman (B.S. McGill Univ. 1998), Toronto, Canada.
 Michael Adams Bolton (B.A. Univ. California [Santa Barbara] 1990, M.S. Harvard Univ. 1995), Mission Viejo, Calif.
 Renee Danielle Boynton-Jarrett (B.A. Princeton Univ. 1997), Englewood, N.J.
 Shannelle Ae Campbell (B.S. Clemson Univ. 1998), Columbia, S.C.
 Severine Marie Chavel (B.S. Brown Univ. 1998), Larchmont, N.Y.
 Jeffrey Jen Chi (B.S. Yale Univ. 2000), Westport, Conn.
 Edward Inntae Cho (B.S. Cornell Univ. 1999), Portage, Mich.
 Jaehyuk Choi (B.A. Harvard Univ. 1998), Cherry Hill, N.J.
 Sean Ryan Christensen (B.S. Univ. California [Santa Barbara] 1998), Rossmoor, Calif.
 Oscar Rene Colegio (B.S. Univ. Texas [Austin] 1995), McAllen, Tex.
 Stephanie Caroline Colegio-Eisenbarth (B.A. Bryn Mawr Coll. 1996), Golden, Colo.
 Amy Susan Duffield (B.A. Wesleyan Univ. 1995), Wilmington, Del.
 David Richard Enis (B.S. Southern Methodist Univ. 1997), Oklahoma City, Okla.

Bahar Fatemeh Firoz (B.A. Columbia Univ. 1999), Short Hills, N.J.
Tamiesha Afrakoma Frempong (B.S. Yale Univ. 1997), Rosedale, N.Y.
Katherine Anne Gergen (B.A. Yale Univ. 1996), McLean, Va.
Keith Eric Gipson (B.S. Univ. Alabama [Birmingham] 1998), Birmingham, Ala.
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Grahame Charles Daniel Gould (B.S. Tulane Univ. 1998), Alpharetta, Ga.
Heidi Cook Green (B.A. Southern Methodist Univ. 1991), Dallas, Tex.
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Hans Talbot Hammond (B.S. Univ. Wisconsin 1999), Tomah, Wis.
Helena Bjerring Hansen (B.A. Harvard Univ. 1992), Brooklyn, N.Y.
Cambria Marie Hembree (B.S. Univ. California [Irvine] 1999), Northridge, Calif.
Stephanie Anne Holler (B.S. Duke Univ. 1999), Oakland, Md.
Rebecca Simmons Holmes (B.A. Reed Coll. 1990, M.O. Harvard Univ. 1992), New Haven, Conn.
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Kristopher Thomas Kahle (Univ. Chicago), Franklin, Wis.
Jennifer Melissa Kalish (B.A. Harvard Univ. 1998), Baltimore, Md.
Byron Sandor Kennedy (B.S. California State Univ. [Sacramento]), Sacramento, Calif.
Daniel Khaimov (B.S. St. John's Univ. 1999), Flushing, N.Y.
Ben Jai-Hoon Kim (B.S. Vanderbilt Univ. 1999), Columbia, S.C.
Leo Am Kim (B.S. Johns Hopkins Univ. 1997), Irvine, Calif.
Joshua Peter Klein (B.A. Univ. Pennsylvania 1997), Roslyn, N.Y.
Melissa Pauline Knauert (B.S. Brown Univ. 1996), Potomac, Md.
Eleanor Ann Knopp (B.A. Brown Univ. 1999), Seattle, Wash.
Brian Dongwook Koh (B.A. Harvard Univ. 1996), Honolulu, Hawaii.
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David Valentine LaBorde (B.S. Georgia Inst. of Technology 1997), San Leandro, Calif.
Sean Michael Lee (B.A. Cornell Univ. 2000), Redmond, Wash.
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Elin Elizabeth Lisska (B.A. Swarthmore Coll. 1997), Granville, Ohio.
Sean Christian Lucan (B.A. Univ. Pennsylvania 1996), Hamden, Conn.
Roberto Lugo (B.S. Yale Univ. 1999), Trujillo Alto, Puerto Rico.
Raymond John Lynch (B.S. Boston Coll. 1999), Hopkinton, Mass.
Eduardo M. Marchan (B.S. Emory Univ. 1999), San Juan, Puerto Rico.
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Laura Nneka Mobisson (B.S. Massachusetts Inst. of Technology 1996), Norwood, Mass.
Nir Modiano (B.S. Yale Univ. 1996), Woodbridge, Conn.
Alejandro Jose Necochea (B.A. Harvard Univ. 1998), Brighton, Mass.
Jessica Clark Newman (B.A. Hamilton Coll. 1992), New York, N.Y.
Sarah Nikiforow (B.S. Princeton Univ. 1993), New Canaan, Conn.

Alison Holt Norris (B.A. Yale Univ. 1994), Norwell, Mass.
 Ada-Nkem Angela Nwaneri (B.S. Univ. Maryland 1998), Silver Spring, Md.
 Brandon O. Ogbunugafor (B.S. Howard Univ. 2002), Yonkers, N.Y.
 David Ryan Peaper (B.A. DePauw Univ. 1999), Carmel, Ind.
 Adam MacKay Pearson (B.A. Dartmouth Coll. 1999), Bow, N.H.
 Celeste Nora Peterson (B.S. Yale Univ. 1998), Middle Haddam, Conn.
 Damani Arnold Piggott (B.S. Morehouse Coll. 1997), Maraval, Trinidad and Tobago.
 Daniel Eduardo Prince (B.S. Univ. Notre Dame 1999), Floral Park, N.Y.
 Seth Rakoff-Nahoum (B.A. Brown Univ. 1998), New York, N.Y.
 Suneil R. Ramchandani (B.S. U.S. Naval Acad. 1998), Rowland Heights, Calif.
 Alejandro Reti (B.A. Amherst Coll. 1998), Wellesley, Mass.
 Rina Lyset Reyes (B.A. Amherst Coll. 1999), Hartford, Conn.
 Lysiane Antonia Ribeiro (B.S. City Coll. New York 1994), New York, N.Y.
 Sally Dunne Romano (B.A. Harvard Univ. 1999), Middlebury, Conn.
 Oren Simon Rosenberg (B.A. Vassar Coll. 1996), Albuquerque, N.Mex.
 David Adam Ross (B.S. Yale Univ. 1999), Canton, Mass.
 Susan Elizabeth Rushing (B.S. Massachusetts Inst. of Technology 1999), Jefferson, Md.
 Marco Antonio Salazar (B.S. California State Univ. 1995), Chula Vista, Calif.
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 Jane Alison Schneider (B.A. Harvard Univ. 1990), La Jolla, Calif.
 Eileen Patricia Scully (B.S. Univ. Notre Dame 1998), Verona, N.J.
 Chirag Dilip Shah (B.S. Stanford Univ. 1997), Oak Brook, Ill.
 Heather Nicole Shelsta (B.S. Univ. Virginia 1999), Alexandria, Va.
 Stephen Lawrence Shiao (B.S. Yale Univ. 1999), Englewood, Colo.
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 Danielle Leigh Smith (Univ. Maryland [Baltimore County]), Silver Spring, Md.
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 Paola Uranga (B.S. Univ. California [San Diego] 1998), Chula Vista, Calif.
 Roya Vakili (B.S. Univ. Utah 1997), Salt Lake City, Utah.
 Erik Daniel Weiss (B.A. Yale Univ. 1999), North Haven, Conn.
 Matthew Kyle Whitley (B.S. Univ. Georgia 2000), Alpharetta, Ga.
 Jacqueline May-Louise William (B.S. Stanford Univ. 1995), Nassau, Bahamas.

Total, 100

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Eric Ackah (B.S. Delaware State Univ. 1998), Dover, Del.
 Anne Lenore Ackerman (B.S. Yale Univ. 1998), New Haven, Conn.
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Chloé Evelyn Atreya (B.A. Princeton Univ. 1998), Ann Arbor, Mich.
Frances Beth Balamuth (B.S. Brown Univ. 1995), Wynnewood, Pa.
Aaron Jacob Berger (B.A., M.S. Univ. Pennsylvania 2000), Fayette, Ky.
Ranjit Singh Bindra (B.S. Yale Univ. 1998), Arlington, Va.
Allison Fitzgerald Carey (B.S. Pennsylvania State Univ. 2002), Pittsburgh, Pa.
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Joanna Yee King Chin (B.A. Harvard Univ. 1999), Brooklyn, N.Y.
Keith Adam Choate (B.S. Stanford Univ. 1995), Walnut Creek, Calif.
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Sean Ryan Christensen (B.S. Univ. California [Santa Barbara] 1998), Rossmoor, Calif.
Oscar Rene Colegio (B.S. Univ. Texas [Austin] 1995), McAllen, Tex.
Stephanie Caroline Colegio-Eisenbarth (B.A. Bryn Mawr Coll. 1996), Golden, Colo.
Tina Dasgupta (B.S. Univ. Alberta 2001), Alberta, Canada.
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Amy Susan Duffield (B.A. Wesleyan Univ. 1995), Wilmington, Del.
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Sharmin Ghaznavi (B.S. Massachusetts Inst. of Technology 2000), Ann Arbor, Mich.
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Abhijit A. Patel (B.S., M.S. Yale Univ. 1995), Etobicoke, Ontario, Canada.
David Ryan Peaper (B.A. DePauw Univ. 1999), Carmel, Ind.
Damani Arnold Piggott (B.S. Morehouse Coll. 1997), Maraval, Trinidad and Tobago.
Craig Daniel Platt (B.A. Univ. Pennsylvania 2002), Wyckoff, N.J.
Seth Rakoff-Nahoum (B.A. Brown Univ. 1998), Brooklyn, N.Y.
Sally Dunne Romano (B.A. Harvard Univ. 1999), Middlebury, Conn.
Oren Simon Rosenberg (B.A. Vassar Coll. 1996), Albuquerque, N.Mex.
David Adam Ross (B.S. Yale Univ. 1999), Canton, Mass.
Marco Antonio Salazar (B.S. California State Univ. 1995), Chula Vista, Calif.
Isaac Sasson (B.A. Yeshiva Univ. 1997), Oakhurst, N.J.
David Alaistair Scales (B.A. Univ. Pennsylvania 2001), Atlanta, Ga.
James Robert Alan Schafer (B.S. Brown Univ. 1997), Columbus, Ohio.
Jennifer Lee Schutzman (B.A. Harvard Univ. 1995), Grosse Pointe Park, Mich.
Eileen Patricia Scully (B.S. Univ. Notre Dame 1998), Verona, N.J.
Tamara Zeudi Shaw (B.A. Reed Coll. 1996), Trinidad and Tobago, West Indies.
Stephen Lawrence Shiao (B.S. Yale Univ. 1999), Englewood, Colo.
Danielle Leigh Smith (B.S. Univ. Maryland [Baltimore County] 1999), Silver Spring, Md.
Grace Li Smith (B.A. Rice Univ. 1998), West Haven, Conn.
Duncan M. Smith-Rohrberg (B.A. Harvard Univ. 2002), West Falmouth, Mass.
Caroline Lauren Sokol (B.A., M.S. Univ. Pennsylvania 2001), Marlton, N.J.
David Adam Spiegel (B.A. Harvard Univ. 1995), Teaneck, N.J.
Michael Donald Tang (B.S. Massachusetts Inst. of Technology 1991), McLean, Va.
Dimitrios Tsirigotis (B.S. McGill Univ. 2001), Montreal, Quebec, Canada.
Nataliya Volodymyrivna Uboha (B.S. Washington Univ. 1999), Lviv, Ukraine.
Mary Catherine Whitman (B.A. Harvard Univ. 2001), Rockville, Md.
Jacqueline May-Louise William (B.S. Stanford Univ. 1995), Nassau, Bahamas.
Yvonne Sue Yang (B.A. Yale Univ. 2000), Fresno, Calif.
Jianling Yuan (B.S., M.S. Yale Univ. 1994), Shanghai, People's Republic of China.
Mihae Eunice Yun (B.S. Yale Univ. 1998), Lebanon, Pa.

Total, 86

REGISTERED FOR THE COMBINED M.B.A.—M.D. DEGREE

Laura Nneka Mobisson (B.S. Massachusetts Inst. of Technology 1996), Norwood, Mass.

Alejandro Reti (B.A. Amherst Coll. 1998), Wellesley, Mass.

Paola Uranga (B.S. Univ. California [San Diego] 1998), Chula Vista, Calif.

Total, 3

REGISTERED FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

Vikram Acharya (B.S. Creighton Univ. 2002), River Forest, Ill.

Ayodele Adebayo (M.B.B.S. Univ. Illorin 1995), New York, N.Y.

Naurin Ahmad (B.A. Univ. Chicago 2001), Moline, Ill.

Eric Aldrich (B.A. Univ. Chicago 1992), Bronx, N.Y.

Norrina Allen (B.S. SUNY [Stony Brook] 2002), Centereach, N.Y.

Adanna Anyikam (B.S. Tulane Univ. 2002), Houston, Tex.

Olivia Arvizu-Martinez (B.A.E.Q. Universidad Iberoamericana 2001), Mexico.

Maribel Avila (B.A. Univ. California [Berkeley] 2002), Albany, Calif.

Allison Balling (B.A. Miami Univ. [Ohio] 2001), Arlington Heights, Ill.

Laurence Belin (B.A. Wesleyan Univ. 2000), New York, N.Y.

Richard Benoit (M.D. Brown Univ. 1996), New Bedford, Mass.

Shaheen Bhanji (B.S. Calif State Univ. [Northridge] 2001), Chester, Pa.

Anne Bliss (B.S. Taylor Univ. 1999), Goshen, Ind.

Allison Brown (B.A. Univ. Virginia 1997), Aspen, Colo.

Amy Brown (B.A. Smith Coll. 2002), New Haven, Conn.

Ayanna Buckner (M.D. Meharry Medical Coll. 2001), Westwego, La.

Richard Callan (A.B. Harvard Univ. 1984), Williamstown, Mass.

Brian Chan (B.A. Stanford Univ. 2002), Del Mar, Calif.

Henry Chang (B.A. Univ. California [Berkeley] 2002), Oakland, Calif.

Mary Chang (B.A. Univ. California [Berkeley] 2001), Cupertino, Calif.

Carolyn Chelimo (B.S. Moi Univ. 2002), Nandi Hills, Kenya.

Shirley Choi (B.A. Univ. Chicago 1999), LaHabra, Calif.

Margaret Chorazy (B.S. Illinois Wesleyan Univ. 2002), Schaumburg, Ill.

Anne Conway (B.S. Western Washington Univ. 1996), East Wenatchee, Wash.

Jonathan Cox (B.A. Univ. Arizona 2002), Tucson, Ariz.

Phoebe Cummings (A.B. Harvard-Radcliffe Coll. 1997), Concord, Mass.

Sibyl Day (B.A. Occidental Coll. 1996), San Francisco, Calif.

Tiffany D'Mello (B.S. St. Mary's Univ. 2002), San Antonio, Tex.

Richard Dunville (B.S. Purdue Univ. 2002), Evansville, Ind.

Julie Earle (B.A. St. Olaf Coll. 1998), New Haven, Conn.

Carol Ferro (B.A. Univ. Calif. [Santa Barbara] 1999), Santa Barbara, Calif.

Sara Fitzgerald (B.S. Cornell Univ. 1998), Alexandria, Va.

Courtney Fleming (B.S. Fairfield Univ. 2000), Oxford, Conn.

Jennifer Garritt (B.S. Trinity Coll. 1999), Niantic, Conn.

Maximo Gomez (B.S. Univ. Puget Sound 2002), Salinas, Calif.
Lene Gomez Palma (M.S. Univ. Oslo 2001), Drammen, Norway.
Leigh Guarinello (B.A. Univ. Virginia 2002), Totowa, N.J.
Michelle Haghpanah (B.S. Fairfield Univ. 2001), Newtown, Conn.
Sarah Hanck (B.A. Haverford Coll. 2000), Chicago, Ill.
Sarah Harma (B.S. Lafayette Coll. 2002), Cheshire, Conn.
Lara Hauslaib (B.A. Tufts Univ. 1999), Storrs, Conn.
Ishan Hirji (B.S. Saskatchewan Univ. 1996), Saskatoon, SK, Canada.
JwuYun Hsieh (B.A. Univ. California [Berkeley] 2001), Arcadia, Calif.
Elizabeth Hudson (B.S. Rensselaer Polytechnic Inst. 1995), Bridgeport, Conn.
Christopher Hughes (B.A. Boston Coll. 2002), Louisville, Ky.
Jeffrey Hung (B.S. Massachusetts Inst. of Technology 2002), Columbia, Md.
Allyson Johnson (B.S. Dickinson Coll. 2000), Meriden, Conn.
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Nadia Khan (B.A. Northwestern Univ. 2002), Colleyville, Tex.
Shazia Khawaja (B.S. Lehigh Univ. 1998), Warminster, Pa.
Brian Kim (B.A. Univ. California [Berkeley] 2001), Irvine, Calif.
Ariane Kirtley (B.A. Yale Univ. 2001), New Haven, Conn.
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Anita Konka (A.B. Princeton Univ. 2001), Staten Island, N.Y.
Stella Koutros (B.A. Tufts Univ. 2002), Staten Island, N.Y.
Priya Krishnamurthy (M.B.B.S. Maulana Azad Medical Coll. 1990), Ansonia, Conn.
Johanna Lee (B.A. Univ. Chicago 2002), Staten Island, N.Y.
Jessica Leung (A.B. Dartmouth Coll. 2002), Sherborn, Mass.
Neal Lin (B.S. Univ. California [San Diego] 2000), South Pasadena, Calif.
Megan Lindley (B.A. Smith Coll. 2000), Brooklyn, N.Y.
Sharmi Mahajan (B.A. McMaster Univ. 2002), Mississauga, Ontario, Canada.
Khadija Mani (B.A. Wellesley Coll. 2002), Brooklyn, N.Y.
Stephanie Marticello (B.S. Northeastern Univ. 2002), Watertown, Conn.
Kevin McGill (B.S. Yale Univ. 2002), Bronx, N.Y.
Jessica Mireider (B.A. Colgate Univ. 1998), Brookhaven, Pa.
Steven Moore (B.A. Williams Coll. 2000), Middletown, Conn.
Lindsey Myers (B.A. Univ. Colorado [Boulder] 1999), Colorado Springs, Colo.
Desiree Notyce (B.A. Univ. Northern Colorado 2002), Lakewood, Colo.
Mary O'Neil (B.A. Tufts Univ. 2001), Preston, Conn.
Dede Orraco-Tetteh (B.A. Williams Coll. 1999), Moreland Hills, Ohio.
Rachael Overcash (B.S. North Carolina State Univ. 2002), Raleigh, N.C.
Samuel Owolabi (M.B.B.S. Ibadan Univ. 1999), Edison, N.J.
Chai Park (B.A. Smith Coll. 2000), Los Angeles, Calif.
Bonnie Pau (B.S. Univ. California [Irvine] 2001), Irvine, Calif.
Prapti Paul (B.S. Univ. Pune 1997), Pune Maharashtra, India.
Ingrid Paulson (B.A. Carleton Coll. 1998), Denver, Colo.
Karen Pennar (A.B. Barnard Coll. 1976), Rye, N.Y.

Wendy Phillips (B.A. Princeton Univ. 2000), Elmont, N.Y.
John Pitman (M.S. Columbia Univ. 1993), New Haven, Conn.
Veena Prabhakar (B.A. Univ. California [Los Angeles] 1999), Avondale, Ariz.
Ellen Pritchett (B.A. Univ. Pennsylvania 2001), New Castle, Del.
Michael Reilly (B.S. Northeastern Univ. 2002), Salem, N.H.
Laurie Roberts (B.A. Colby Coll. 1999), Allston, Mass.
Alexander Rodriguez (M.D. Emory Univ. 1973), Wilton, Conn.
Glenn Schulman (B.S. Philadelphia Coll. of Pharmacy and Science 1998), New Haven, Conn.
Gulshan Sharma (M.B.B.S. Panjab Univ. 1994), New Haven, Conn.
Saurabh Sharma (B.S. Emory Univ. 1999), Ruston, La.
Deepa Sinha (M.PHIL. Jawaharial Nehru Univ. 1991), Orange, Conn.
Tameem Souman (B.A. George Washington Univ. 2002), Oak Brook, Ill.
Cedric Strong (M.D. Meharry Medical Coll. 2000), Springfield, Mass.
Scott Teper (B.A. Univ. Chicago 2002), Bayside, Wis.
Makoto Tobe (B.N. Chiba Univ. 1996), Chiba, Japan.
Jill Trei (B.S. Iowa State Univ. 2000), Ames, Iowa.
Ricalder Valentine (B.A. Univ. Rochester 2002), Brooklyn, N.Y.
Stephen Vindigni (B.S. Quinnipiac Univ. 2002), Clarksburg, N.J.
Heather Volatile (B.S. Univ. Rochester 1987), North Reading, Mass.
Rong Wang (B.S. Shanghai Medical Univ. 1995), China.
Andrew Wiley (B.S. Univ. Puget Sound 1998), Napa, Calif.
Diana Winston (B.S. McGill Univ. 2002), Scarsdale, N.Y.
Jonathan Wittenberg (B.S. James Madison Univ. 2000), New Haven, Conn.
Natalie Wong (B.S. Univ. Michigan [Ann Arbor] 2000), Staten Island, N.Y.
Stella Yi (B.A. Johns Hopkins Univ. 2001), Warren, N.J.

Total, 103

REGISTERED FOR THE COMBINED M.P.H.—M.D. DEGREE

Paola Carolina Ayora (B.A. Univ. Pennsylvania 1997), Quito, Ecuador.
Shannelle Ae Campbell (B.S. Clemson Univ. 1998), New Haven, Conn.
Tamiesha Afrakoma Frempong (B.S. Yale Univ. 1997), Rosedale, N.Y.
Sean Christian Lucan (B.A. Univ. Pennsylvania 1996), New Haven, Conn.
Daniel Eduardo Prince (B.S. Univ. Notre Dame 1999), Floral Park, N.Y.

Total, 5

REGISTERED FOR THE COMBINED M.P.H.—F.E.S. DEGREE

Brynn Taylor (B.S. Univ. Redlands 1996), Ridgefield, Conn.
Mark Thomas (M.D. Univ. Wisconsin [Madison] 1988), St. Paul, Minn.
Ellen Wells (B.A. Oberlin Coll. 1998), Cleveland Heights, Ohio.

Total, 3

REGISTERED FOR THE COMBINED M.P.H.—M.B.A. DEGREE

Tanya Sukhu (B.A. Univ. California [Berkeley] 1998), Dana Point, Calif.

Total, 1

REGISTERED FOR THE COMBINED M.P.H.—M.A.R. DEGREE

Robert Bruce (M.D. Univ. Texas [Dallas] 1997), Houston, Tex.

Total, 1

REGISTERED FOR THE COMBINED M.P.H.—M.DIV. DEGREE

Xu Yao (B.A. Peking Univ. 1997), China.

Total, 1

REGISTERED FOR THE COMBINED M.P.H.—M.S.N. DEGREE

Dylan Barnes-Lotfi (B.S. Oakland Univ. 2001), Lapeer, Mich.

Total, 1

REGISTERED FOR THE PHYSICIAN ASSOCIATE PROGRAM*Second Year*

Andrew Charles Allen (B.S. Univ. Southern California 2001), Long Beach, Calif.

Virginia Hall Arvold (B.A. Middlebury Coll. 1997), Duluth, Minn.

Kate August (B.S. Univ. Michigan [Ann Arbor] 2001), Troy, Mich.

Lisa Rebecca Borge (B.S. Davidson Coll. 1997), West Kingston, R. I.

Lesley Alison Bowdre (B.A. Univ. Kansas 1995), Norman, Okla.

Bonnie Michelle Chard (B.S. Brandeis Univ. 1998), Pittsfield, Mass.

Kristina K. Chaves (B.A. State Univ. New York [Albany] 2000), Ballston Lake, N. Y.

Anne E. Clancy (B.A. Univ. Vermont 1996), Princeton, N.J.

Suzzunne Nicole DeCruz (B.A. Haverford Coll. 1994), Marlborough, Mass.

Juan Carlos DelPrado (B.A. Coll. of the Holy Cross 1995), Stonington, Conn.

Jennifer M. Drost (B.A. Univ. Illinois [Urbana-Champaign] 1996), Surprise, Ariz.

Maura Ann Guilfoyle (B.S. Boston Coll. 1999), Londonderry, N.H.

Jennifer Marie Hess (B.A. La Salle Univ. 1999), Westfield, Mass.

Kimberlee Christine Hildreth (Univ. Missouri [Columbia] 1998), Glendale, Mo.

Brianne Lynn Johnsen (Dartmouth Coll. 2001), Rochester, N.Y.

Adam Edward Kovalski (B.S. Univ. Connecticut [Storrs] 1995), Highland Falls, N.Y.

Lauren E. Kuhl (B.B.A. Stetson Univ. 1989), Orlando, Fla.

Sun Myung Kwon (B.A. Seoul National Univ. 1997), New Haven, Conn.

Barbara Ellen Latunik (B.S. Univ. New Hampshire [Durham] 1997), Webster, N.Y.

Elizabeth Mary Lucas (B.S. Duke Univ. 2001), Fairmont, Minn.

Trina Lorin MacDonald (B.S. Univ. Vermont 1992), Woodstock, Vt.
Janice L. MacGillivray (B.S. Univ. Pittsburgh 1991), West Roxbury, Mass.
Meghan Lynn McGurk (B.A. Skidmore Coll. 2000), Stony Brook, N.Y.
Tami Rashed Menard (B.A. Brown Univ. 1996), Harrisville, R.I.
Robert M. Miller (B.S. Univ. California [Davis] 1999), Sacramento, Calif.
Karl S. Neubecker (B.A. Coll. of the Holy Cross 2000), South Salem, N.Y.
Peggy Ann Peelman (B.S. Univ. Wisconsin [Eau Claire] 1997), Eau Claire, Wis.
Victor Robert Quintanilla (B.A. Univ. Florida 1999), Tequesta, Fla.
Blythe Elizabeth Sanford (B.A. Bucknell Univ. 2001), Pittsburgh, Pa.
Lindsey M. Schultz (B.S. Boston Univ. 2001), Pepperell, Mass.
Bethany L. Stack (B.A. Castleton State Coll. 2000), Rutland, Vt.
Aliza Ann Stern (B.A. Lehigh Univ. 1998), Orange, Conn.
Amanda Elizabeth Turner (B.A. Univ. Delaware 2000), Kennett Square, Pa.
Hilary B. White (B.A. Colby Coll. 1998), Dover, Mass.
James O. Williams (B.A. Skidmore Coll. 1994), Camden, Maine.

Total, 35

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Patrick Timothy Anderson (M.S. Inst. of Paper Chemistry 1993), Rumford, Me.
Bryan James Barboza (B.A. Ithaca Coll. 2000), Prospect, Conn.
Dustin Kirk Bowman (B.S. Boise State Univ. 1999), Boise, Idaho.
Amanda Christine Brown (B.S. Univ. Toledo 2000), Cypress, Calif.
Lisa Ripley Brown (B.A. Univ. Maine 1995), Bangor, Me.
Tanya Marie Cariveau (B.S. Univ. North Dakota 2002), East Grand Forks, Minn.
Terri In Ok Cho (B.S. Univ. California [Los Angeles] 1999), Los Angeles, Calif.
Jonathan Simon Cohen (B.S. Albertus Magnus Coll. 1999), New Haven, Conn.
Aspen Lee Domin (B.S. State Univ. New York [Geneseo] 2001), Conklin, N.Y.
Linda Day Entigar (M.A. Univ. Connecticut 1981), Wethersfield, Conn.
Nikki-Ann Giliam (B.S. Florida State Univ. 2001), Lakeland, Fla.
Geordie McGill Glass (B.S. McGill Univ. 1996), Mundelein, Ill.
Julie Ann Guentner (B.S. Pennsylvania State Univ. 2002), Pittsburgh, Pa.
Shanon Star Heaton (B.S. San Diego State Univ. 2002), El Cajon, Calif.
Jeffrey Michael Hellman (B.A. Brandeis Univ. 1999), Methuen, Mass.
Paul Charles Hopey (B.A. Clemson Univ. 1992), Mt. Rest, S.C.
Andrea Renee Jacobs (M.S. Univ. of Medicine and Dentistry of N.J. 2002), Marlboro, N.J.
Marilena G. Karpodinis (B.S. Univ. California [Los Angeles] 2001), Redding, Calif.
Ran Hwa Ku (B.S. Univ. Massachusetts [Boston] 1998), Philadelphia, Pa.
Ling Jennifer Lo (B.S. Cornell Univ. 1996), Woodcliff Lake, N.J.
Israel Mushi (Southern Connecticut State Univ.), New Haven, Conn.
Dael Bryony Nelson (B.A. Wesleyan Univ. 2000), Choteau, Mont.
Dennis Sean O'Brien (B.S. Stonehill Coll. 2000), Cromwell, Conn.

Amy Marie Oltman-Hurst (M.S. Baylor Univ. 2002), Lincoln, Nebr.
Paula Peceny (B.S. Univ. Colorado [Boulder] 2002), Aurora, Colo.
Jenna Lynn Ray (B.A. Hope Coll. 1996), Cassopolis, Mich.
Rebecca Fennell Schuman (B.S. Indiana Univ. [Bloomington] 2001), Glenwood Springs,
Colo.
Bernadette Helena Shaw (B.A. Brown Univ. 1998), Portland, Me.
Meri Elizabeth Stoklosa (B.A. Univ. Kansas 2000), Overland Park, Kans.
Sarah Elizabeth Thebarger (B.S. Master's Coll. 2001), Bloomington, Ill.
Jose Torres-Torija (B.A. Univ. California [Berkeley] 2000), San Jose, Calif.
Elizabeth Austin Tucker (B.A. Univ. Wisconsin [Madison] 2001), Hilton Head, S.C.
Barbara Ann Walden (B.A. Coll. Saint Benedict 2001), Sleepy Eye, Minn.
Kellyann Walsh (B.S. Coll. New Jersey 1998), Clifton, N.J.
Matthew Claude Wiese (B.S. California State Univ. [Long Beach] 1991), Rolling Hills,
Calif.
Amanda Geraldine Ying (B.S. Oregon State Univ. 2000), Corvallis, Ore.

Total, 36

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The work of Yale University is carried on in the following schools:

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For additional information, please write to the Office of Undergraduate Admissions, Yale University, PO Box 208234, New Haven CT 06520-8234; telephone, 203.432.9300; e-mail, undergraduate.admissions@yale.edu; Web site, www.yale.edu/admit/

Graduate School of Arts and Sciences: Courses for college graduates. Master of Arts (M.A.), Master of Science (M.S.), Master of Philosophy (M.Phil.), Doctor of Philosophy (Ph.D.).

For additional information, please write to the Yale Graduate School of Arts and Sciences, PO Box 208323, New Haven CT 06520-8323; telephone, 203.432.2770; e-mail, graduate.admissions@yale.edu; Web site, www.yale.edu/graduateschool/

School of Medicine: Courses for college graduates and students who have completed requisite training in approved institutions. Doctor of Medicine (M.D.). Postgraduate study in the basic sciences and clinical subjects. Combined program with the Graduate School of Arts and Sciences leading to Doctor of Medicine and Doctor of Philosophy (M.D./Ph.D.). Courses in public health for qualified students. Master of Public Health (M.P.H.), Master of Medical Science (M.M.Sc.) from the Physician Associate Program.

For additional information, please write to the Director of Admissions, Office of Admissions, Yale University School of Medicine, 367 Cedar Street, New Haven CT 06510; telephone, 203.785.2643; fax, 203.785.3234; e-mail, medical.admissions@yale.edu; Web site, www.info.med.yale.edu/medadmit/

For additional information about the Department of Epidemiology and Public Health, an accredited School of Public Health, please write to the Director of Admissions, Department of Epidemiology and Public Health, Yale School of Medicine, PO Box 208034, New Haven CT 06520-8034; e-mail, eph.admissions@yale.edu; Web site, www.info.med.yale.edu/eph/

Divinity School: Courses for college graduates. Master of Divinity (M.Div.), Master of Arts in Religion (M.A.R.). Individuals with an M.Div. degree may apply for the program leading to the degree of Master of Sacred Theology (S.T.M.).

For additional information, please write to the Admissions Office, Yale University Divinity School, 409 Prospect Street, New Haven CT 06511; telephone, 203.432.5360; fax, 203.432.7475; e-mail, ydsadmsn@yale.edu; Web site, www.yale.edu/divinity/

Law School: Courses for college graduates. Juris Doctor (J.D.). For additional information, please write to the Admissions Office, Yale Law School, PO Box 208329, New Haven CT 06520-8329; telephone, 203.432.4995; e-mail, admissions.law@yale.edu; Web site, www.law.yale.edu/

Graduate Programs: Master of Laws (LL.M.), Doctor of the Science of Law (J.S.D.), Master of Studies in Law (M.S.L.). For additional information, please write to Graduate Programs, Yale Law School, PO Box 208215, New Haven CT 06520-8215; telephone, 203.432.1696; e-mail, gradpro.law@yale.edu; Web site, www.law.yale.edu/

School of Art: Professional courses for college and art school graduates. Master of Fine Arts (M.F.A.).

For additional information, please write to the Office of Academic Affairs, Yale School of Art, PO Box 208339, New Haven CT 06520-8339; telephone, 203.432.2600; e-mail, artschool.info@yale.edu; Web site, www.yale.edu/art/

School of Music: Graduate professional studies in performance, composition, and conducting. Certificate in Performance, Master of Music (M.M.), Master of Musical Arts (M.M.A.), Artist Diploma, Doctor of Musical Arts (D.M.A.).

For additional information, please write to the Yale School of Music, PO Box 208246, New Haven CT 06520-8246; telephone, 203.432.4155; fax, 203.432.7448; e-mail, gradmusic.admissions@yale.edu; Web site, www.yale.edu/schmus/

School of Forestry & Environmental Studies: Courses for college graduates. Master of Forestry (M.F.), Master of Forest Science (M.F.S.), Master of Environmental Science (M.E.Sc.), Master of Environmental Management (M.E.M.), Doctor of Forestry and Environmental Studies (D.F.E.S.).

For additional information, please write to the Office of Academic Services, Yale School of Forestry & Environmental Studies, 205 Prospect Street, New Haven CT 06511; telephone, 800.825.0330 or 203.432.5100; e-mail, fesinfo@yale.edu; Web site, www.yale.edu/environment/

School of Architecture: Courses for college graduates. Professional degree: Master of Architecture (M.Arch.); nonprofessional degree: Master of Environmental Design (M.E.D.).

For additional information, please write to the Yale School of Architecture, PO Box 208242, New Haven CT 06520-8242; telephone, 203.432.2296; e-mail, gradarch.admissions@yale.edu; Web site, www.architecture.yale.edu/

School of Nursing: Courses for college graduates. Master of Science in Nursing (M.S.N.), Post Master's Certificate, Doctor of Nursing Science (D.N.Sc.).

For additional information, please write to the Yale School of Nursing, PO Box 9740, New Haven CT 06536-0740; telephone, 203.785.2389; Web site, www.nursing.yale.edu/

School of Drama: Courses for college graduates and certificate students. Master of Fine Arts (M.F.A.), Certificate in Drama, One-year Technical Internship (Certificate), Doctor of Fine Arts (D.F.A.).

For additional information, please write to the Registrar's Office, Yale School of Drama, PO Box 208325, New Haven CT 06520-8325; telephone, 203.432.1507; Web site, www.yale.edu/drama/

School of Management: Courses for college graduates. Professional degree: Master of Business Administration (M.B.A.).

For additional information, please write to the Admissions Office, Yale School of Management, PO Box 208200, 135 Prospect Street, New Haven CT 06520-8200; telephone, 203.432.5932; fax, 203.432.7004; e-mail, mba.admissions@yale.edu; Web site, www.mba.yale.edu/

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I-95 from East and West: Exit 47 (Downtown-Route 34 connector), to York Street (Exit 3). Follow signs to Air Rights Parking Garage.

I-91 from North: Exit 1 (Downtown-Route 34 connector), to York Street (Exit 3). Follow signs to Air Rights Parking Garage.

Wilbur Cross Parkway from North: Exit 61 on Whitney Avenue through New Haven. Right on Chapel Street and left at College Street. Right on North Frontage Road. Follow signs to Air Rights Parking Garage entrance.

Route 1 from West via Davenport or Congress Avenues: Go left on Howard Avenue to Oak Street/South Frontage Road and turn right. Follow signs to Air Rights Parking Garage.

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For all other matters related to admission to the Yale School of Medicine, please telephone the Office of Admissions, 203.785.2696.

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