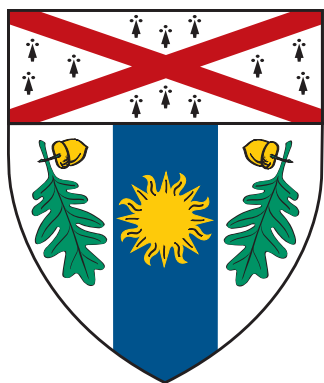


School of the Environment 2023–2024



BULLETIN OF YALE UNIVERSITY

Series 119 Number 12 August 20, 2023

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CALENDAR

The following dates are subject to change as the University makes decisions regarding the 2023–2024 academic year. Changes will be posted online on the School of the Environment’s website.

FALL 2023

Aug. 10	TH	International-student orientation
Aug. 11	F	Optional pre-orientation events (hosted by YSE’s Diversity, Equity, and Inclusion Office)
Aug. 14–18	M–F	MODs and orientation events for all incoming students
Aug. 21–25	M–F	MODs and orientation events for all incoming students
Aug. 23	W	Online course registration opens
Aug. 29	T	Online course registration closes Dean’s Welcome YSE Community Day for all YSE students
Aug. 30	W	Fall-term classes begin Beginning of add/drop
Sept. 4	M	Labor Day; offices closed; classes do not meet
Sept. 12	T	Add/drop period ends
Oct. 17	T	October recess begins, 7:30 p.m.
Oct. 23	M	Classes resume, 8:20 a.m.
Oct. 27	F	Midterm
Nov. 17	F	November recess begins, 7:30 p.m.
Nov. 27	M	Classes resume, 8:20 a.m.
Dec. 8	F	Last day of classes
Dec. 11–14	M–TH	Reading period
Dec. 15–20	F–W	Final examinations
Dec. 20	W	Fall term ends; winter recess begins 5 p.m.

SPRING 2024

Jan. 2	T	Fall-term grades due
Jan. 9	T	Online course registration opens 8 a.m.
Jan. 15	M	Online course registration closes 11:59 p.m. Martin Luther King Jr. Day; offices closed; classes do not meet
Jan. 16	T	Spring-term classes begin, 8:20 a.m. Beginning of add/drop period
Jan. 26	F	Add/Drop period ends
Mar. 8	F	Midterm Spring recess begins, 7:20 p.m.
Mar. 25	M	Classes resume, 8:20 a.m.
Apr. 26	F	Classes end, reading period begins, 5:30 p.m.
May 3–8	F–W	Final examinations
May 8	W	Spring term ends, 5:30 p.m.
May 13	M	Spring-term grades due for graduating students

May 20	M	University Commencement
May 29	W	Spring-term grades due for continuing students

THE PRESIDENT AND FELLOWS OF YALE UNIVERSITY

President

Peter Salovey, A.B., A.M., Ph.D.

Fellows

Joshua Bekenstein, B.A., M.B.A., Wayland, Massachusetts (*June 2025*)

Gina Rosselli Boswell, B.S., M.B.A., Vero Beach, Florida (*June 2029*)

Michael James Cavanagh, B.A., J.D., Philadelphia, Pennsylvania (*June 2026*)

Catharine Bond Hill, B.A., B.A., M.A., Ph.D., Bronx, New York (*June 2024*)

Maryana Iskander, B.A., M.Sc., J.D., Round Rock, Texas (*June 2029*)

William Earl Kennard, B.A., J.D., Charleston, South Carolina (*June 2026*)

Frederic David Krupp, B.S., J.D., Norwalk, Connecticut (*June 2028*)

Maurie Dee McInnis, B.A., M.A., Ph.D., Setauket, New York (*June 2028*)

Reiko Ann Miura-Ko, B.S., Ph.D., Menlo Park, California (*June 2025*)

Carlos Roberto Moreno, B.A., J.D., Los Angeles, California (*June 2026*)

Joshua Linder Steiner, B.A., M.St., New York, New York (*June 2024*)

David Li Ming Sze, B.A., M.B.A., Hillsborough, California (*June 2024*)

Marta Lourdes Tellado, B.A., Ph.D., New York, New York (*June 2028*)

David Anthony Thomas, B.A., M.A., M.A., Ph.D., Atlanta, Georgia (*June 2027*)

Michael James Warren, B.A., B.A., Washington, D.C. (*June 2024*)

Neal Steven Wolin, B.A., M.Sc., J.D., Washington, D.C. (*June 2029*)

His Excellency the Governor of Connecticut, *ex officio*

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

THE OFFICERS OF YALE UNIVERSITY

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Provost

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Secretary and Vice President for University Life

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Senior Vice President for Operations

Jack Francis Callahan, Jr., B.A., M.B.A.

Senior Vice President for Institutional Affairs and General Counsel

Alexander Edward Dreier, A.B., M.A., J.D.

Vice President for Finance and Chief Financial Officer

Stephen Charles Murphy, B.A.

Vice President for Alumni Affairs and Development

Joan Elizabeth O'Neill, B.A.

Vice President for Human Resources

John Whelan, B.A., J.D.

Vice President for Facilities, Campus Development, and Sustainability

Jack Michael Bellamy, B.S., M.S.

Vice President for Information Technology and Chief Information Officer

John Barden, B.A., M.B.A.

Vice President for Communications

Renee Kopkowski, B.A.

FACULTY AND ADMINISTRATION

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Scott Strobel, Provost of the University
Ingrid C. Burke, Carl W. Knobloch, Jr. Dean
Mark S. Ashton, Senior Associate Dean of the Forest School
Bradford S. Gentry, Senior Associate Dean of Professional Practice
Peter A. Raymond, Senior Associate Dean of Research
Dorceta E. Taylor, Senior Associate Dean of Diversity, Equity, and Inclusion
Julie B. Zimmerman, Senior Associate Dean of Academic Affairs
Danielle Dailey, Chief of Staff and Associate Dean of Faculty Affairs
Kevin Doyle, Executive Director, Office of Career and Professional Development
Andrés Fernández, Associate Dean of Student Affairs
Kristin Floyd, Associate Dean of Development and Alumni Services
Wendi Hicks, Director of Enrollment Management and Financial Aid
Robert Javonillo, Assistant Dean of Diversity, Equity, and Inclusion
Denny Kalenzaga, Director of Finance and Administration
Melanie Quigley, Executive Director of Strategic Initiatives
Sara Smiley Smith, Associate Dean of Academic Affairs, Research, and Sustainability
Paige Stein, Executive Director of Strategic Communications

BOARD OF PERMANENT OFFICERS

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Mark S. Ashton, Ph.D., Morris K. Jesup Professor of Silviculture and Forest Ecology; and Senior Associate Dean of the Forest School
Michelle L. Bell, Ph.D., Mary E. Pinchot Professor of Environmental Health; and Professor of Environmental Health, School of Public Health
Gaboury Benoit, Ph.D., Grinstein Class of 1954 Professor of Environmental Chemistry
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Liza S. Comita, Ph.D., Professor of Tropical Forest Ecology; and Professor of Ecology and Evolutionary Biology; Co-Director, Yale Center for Natural Carbon Capture
Michael R. Dove, Ph.D., Margaret K. Musser Professor of Social Ecology; Professor of Anthropology; Curator of Anthropology, Peabody Museum of Natural History; and Coordinator, YSE/Anthropology Degree Program
Daniel C. Esty, J.D., Hillhouse Professor of Environmental Law and Policy; Clinical Professor, Law School; Professor, School of Management; Professor

in the Institution for Social and Policy Studies; and Director, Yale Center for Environmental Law and Policy

Justin Farrell, Ph.D., Professor of Sociology; and Professor in the Institution for Social and Policy Studies and Department of Sociology

Eli Fenichel, Ph.D., Knobloch Family Professor of Natural Resource Economics

Kenneth T. Gillingham, Ph.D., Professor of Environmental and Energy Economics; and Professor, School of Management and Department of Economics

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Matthew J. Kotchen, Ph.D., Professor of Economics; Professor, School of Management

William Lauenroth, Ph.D., Professor of the Environment

Xuhui Lee, Ph.D., Sara Shallenberger Brown Professor of Meteorology; and Director, Yale Center for Earth Observation

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Peter A. Raymond, Ph.D., Professor of Ecosystem Ecology; and Professor of Geology and Geophysics; Senior Associate Dean of Research; and Director of Doctoral Studies

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Oswald J. Schmitz, Ph.D., Oastler Professor of Population and Community Ecology; Professor of Ecology and Evolutionary Biology

Karen Seto, Ph.D., Frederick C. Hixon Professor of Geography and Urbanization Science; and Director, Hixon Center for Urban Ecology

David K. Skelly, Ph.D., Frank R. Oastler Professor of Ecology; Professor of Ecology and Evolutionary Biology; and Director, Yale Peabody Museum of Natural History

Dorceta E. Taylor, Ph.D., Professor of Environmental Justice; Senior Associate Dean of Diversity, Equity, and Inclusion

Gerald Torres, J.D., Professor of Environmental Justice

John P. Wargo, Ph.D., Tweedy/Ordway Professor of Environmental Health and Politics; and Chair, Yale College Environmental Studies Major and Program

Julie B. Zimmerman, Ph.D., Professor of Green Engineering; Professor of Environmental Engineering; Senior Associate Dean of Academic Affairs; and Deputy Director, Center for Green Chemistry and Green Engineering

FACULTY EMERITI

William R. Burch, Jr., Ph.D., Frederick C. Hixon Professor Emeritus of Natural Resource Management; and Senior Research Scientist

Susan G. Clark, Ph.D., Joseph F. Cullman 3rd Professor Adjunct Emeritus of Wildlife Ecology and Policy

Gordon Geballe, Ph.D., Lecturer Emeritus of Urban Ecology

John C. Gordon, Ph.D., Pinchot Professor Emeritus of the Environment

Thomas E. Graedel, Ph.D., Clifton R. Musser Professor Emeritus of Industrial Ecology; and Senior Research Scientist

Chadwick Dearing Oliver, Ph.D., Pinchot Professor Emeritus of the Environment

William H. Smith, Ph.D., Clifton R. Musser Professor Emeritus of Forest Biology

LADDER FACULTY

Paulo Brando, Ph.D., Associate Professor of Ecosystem Carbon Capture

Nyeema Harris, Ph.D., Knobloch Family Associate Professor of Wildlife and Land Conservation
 Sparkle Malone, Ph.D., Assistant Professor of Ecosystem Carbon Capture
 Narasimha Rao, Ph.D., Associate Professor of Energy Systems
 Luke Sanford, Ph.D., Assistant Professor of Environmental Policy and Governance
 Yuan Yao, Ph.D., Assistant Professor of Industrial Ecology and Sustainable Systems

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 Shimon C. Anisfeld, Ph.D., Senior Lecturer II and Research Scientist in Water Resources and Environmental Chemistry
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 Carol Carpenter, Ph.D., Senior Lecturer in Natural Resource Social Science
 Amity Doolittle, Ph.D., Senior Lecturer II in Political Ecology
 Marlyse C. Duguid, Ph.D., Thomas G. Siccama Senior Lecturer in Environmental Field Studies and Research Scientist
 L. Kealoha Freidenburg, Ph.D., Lecturer
 Bradford S. Gentry, J.D., Frederick K. Weyerhaeuser Professor in the Practice of Forest Resources Management and Policy, School of the Environment and School of Management; Senior Associate Dean of Professional Practice; Director, Yale Center for Business and the Environment; and Director, Research Program on Private Investment and the Environment
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 Simon A. Queenborough, Ph.D., Senior Lecturer and Research Scientist; and Mrs. John Musser Director, Tropical Resources Institute
 Jonathan D. Reuning-Scherer, Ph.D., Senior Lecturer in Statistics and Data Science

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 Sir Peter Crane, Ph.D., Senior Research Scientist
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 Seulkee Heo, Ph.D., Associate Research Scientist
 J. Nicolao Hernandez-Aguilera, Ph.D., Associate Research Scientist
 Sara Kuebbing, Ph.D., Research Scientist
 Darren Lee, Ph.D., Associate Research Scientist
 Anthony Leiserowitz, Ph.D., Senior Research Scientist and Lecturer; and Director, Yale Project on Climate Change Communication
 Reid J. Lifset, M.S., M.P.P.M., Research Scholar; Associate Director, Industrial Environmental Management Program; and Editor-in-Chief, *Journal of Industrial Ecology*
 Jennifer Marlon, Ph.D., Senior Research Scientist
 Alessio Miatto, Ph.D., Associate Research Scientist

Florencia Montagnini, Ph.D., Senior Research Scientist; and Director, Program in Tropical Forestry of the Global Institute of Sustainable Forestry
 Predrag Petrovic, Ph.D., Associate Research Scientist
 Mizanur Rahman, Ph.D., Associate Research Scientist
 Lars Ratjen, Ph.D., Associate Research Scientist
 Barbara Reck, Ph.D., Senior Research Scientist
 Jiyounng Son, Ph.D., Associate Research Scientist
 Talbot Trotter III, Ph.D., Associate Research Scientist
 Stephen Wood, Ph.D., Research Scientist and Lecturer

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 Patrick Gonzales-Rogers, J.D., Lecturer
 Elena Grewal, Ph.D., Lecturer
 Daniel Gross, M.E.M., M.B.A., Lecturer
 J. Morgan Grove, Ph.D., Lecturer
 Walker Holmes, M.E.M., Lecturer
 Stephanie Hanes Wilson, B.A., Lecturer
 Lawrence Kelly, Ph.D., Professor Adjunct
 Verlyn Klinkenborg, Ph.D., Lecturer
 David Kooris, M.A., Lecturer
 Melissa Kops, M.A., Lecturer
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 A. William Weber, Ph.D., Lecturer

SECONDARY APPOINTMENTS

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 Adalgisa (Gisella) Caccione, Ph.D., Senior Research Scientist and Lecturer in Ecology and Evolutionary Biology; Senior Research Scientist in Microbial Diseases
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Erika Edwards, Ph.D., Professor of Ecology and Evolutionary Biology; Curator of Botany at the Peabody Museum; Director of Marsh Botanical Gardens

Eduardo Fernandez-Duque, Ph.D., Professor of Anthropology

Drew R. Gentner, Ph.D., Associate Professor of Chemical & Environmental Engineering

Walter Jetz, Ph.D., Professor of Ecology and Evolutionary Biology

Jaehong Kim, Ph.D., Henry P. Becton Sr. Professor of Chemical & Environmental Engineering

Douglas A. Kysar, J.D., Joseph M. Field '55 Professor of Law, Law School

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Harvey Weiss, Ph.D., Professor of Near Eastern Languages and Civilizations

Ernesto Zedillo, Ph.D., Professor in the Field of International Economics and International Relations; and Frederick Iseman '74 Director, Yale Center for the Study of Globalization

A MESSAGE FROM THE DEAN

Since its founding in 1900, the Yale School of the Environment (YSE) has been at the forefront of environmental science and scholarship, training generations of leaders who have tackled some of the most pressing challenges of their time. Today, we continue to build on this solid foundation by providing research, teaching, and public engagement aimed at creating a more equitable and sustainable world.

Our faculty, students, and alumni are bringing a science-to-solutions focus to tackling the climate crisis and a wide scope of critical environmental issues and engaging in novel cross-disciplinary scholarship and practice in energy policy, ecosystem science and biogeochemistry, hydrology, urban science, green chemistry, and environmental justice, among many other areas. The teaching and study of forestry has been, and remains, a core strength of our School since its founding. The Forest School at YSE is a hub for practitioners and land stewards in forest-related fields worldwide, bringing together innovative, multidisciplinary research and practice to find solutions to the challenges that face the world's forests.

Our alumni – who today number more than 5,500 – are tackling complex, high-stakes environmental, social, and economic challenges in every corner of the world. They work in NGOs, government, industry, academia, law, public health, and communications, among other sectors. Our highly engaged alumni network is an invaluable resource for students, providing mentorship and support as they prepare to make their own impact in the environmental sphere.

In the past several years, we have made great progress in expanding our capacity to address global environmental challenges in many areas. In 2022, YSE launched the Three Cairns Climate Program for the Global South, a transformative initiative aimed at supporting the next generation of environmental leaders. Established with a historic gift from the Three Cairns Group, the cornerstone of the program is the Three Cairns Scholars program, which allows YSE to meet 100 percent of the demonstrated tuition need for qualified master's students from the Global South who are committed to combatting climate change in their home countries and regions. A smaller component of the program, the Three Cairns Fellows program, expands access to YSE's highly regarded online certificate programs. The gift also will support the development of two new certificate programs – one on urban climate leadership and one on environmental data science for climate solutions, both with a focus on the Global South.

Additionally, the Center for Green Chemistry and Green Engineering at YSE is leading a U.N.-backed initiative, the Global Greenchem Innovation and Network Programme, that will greatly accelerate research, development, and training in green chemistry in Indonesia, Jordan, Peru, Serbia, Uganda, and Ukraine. The Yale Program on Climate Change Communication (YPCCC) continues to lead the field in examining and understanding public opinion and behavior about climate change. For example, they partnered with the Irish Environmental Protection Agency to produce maps of Ireland which show how climate change beliefs, risk perceptions, and policy support vary at the county and regional levels in Ireland.

In 2022, two new professors joined the YSE faculty: Sparkle Malone, an expert on disturbance ecology and ecosystem dynamics, and Paulo Brando, an internationally recognized expert in tropical ecosystems. These incredible scholars are emerging leaders in their fields and are enriching the academic experience at our school and across Yale. They joined a renowned group of teachers and scholars that includes the likes of Eli Fenichel, Knobloch Family Professor of Natural Resource Economics, who recently returned to YSE after serving as the assistant director for natural resource economics and accounting in the White House Office of Science and Technology Policy. There, he led a historic effort to expand the U.S. economic accounting system to better capture the links between nature and the economy. They also are joining faculty such as Liza Comita, professor of tropical forest ecology and co-director of the Yale Center for Natural Carbon Capture, who in 2023 was named a fellow of the American Association for the Advancement of Science in recognition of her work in advancing our understanding of tropical forest ecosystems, and Hillhouse Professor of Environmental Law and Policy Daniel Esty, who is currently working at the World Trade Organization to develop a sustainability agenda for a trading system that better aligns the WTO with the world community's commitment to achieve net-zero greenhouse gas emissions by 2050.

Since its founding, this School has demonstrated the willingness and strength to adapt to the evolving challenges facing our world. I have never felt more confident about how well poised we are to fulfill our mission of providing knowledge and leadership for a sustainable future!

Indy C. Burke
Carl W. Knobloch, Jr. Dean
School of the Environment

SCHOOL MISSION

The Yale School of the Environment aspires to lead the world toward a sustainable future with cutting-edge research, teaching, and public engagement on society's evolving and urgent environmental challenges.

Our mission is grounded in seven fundamental values:

Excellence We promote and engage in pathbreaking science, policy, and business models that build on a fundamental commitment to analytic rigor, data, intellectual integrity, and excellence.

Leadership We attract outstanding students nationally and internationally and offer a pioneering curriculum that imparts the knowledge and skills needed to be a twenty-first-century environmental leader in a range of professions.

Sustainability We generate knowledge that will advance thinking and understanding across the various dimensions of sustainability.

Community We offer a community that finds strength in its collegiality, diversity, independence, and commitment to excellence and lifelong learning.

Diversity We celebrate our differences and identify pathways to a sustainable future that respects diverse values including equity, liberty, and civil discourse.

Collaboration We foster collaborative learning, professional skill development, and problem solving—and we strengthen our scholarship, teaching, policy work, and outreach through partnerships across the University and beyond.

Responsibility We encourage environmental stewardship and responsible behavior on campus and beyond.

In pursuit of our mission, we:

- Build on more than a century of work bringing science-based strategies, ethical considerations, and conservation practices to natural resource management.
- Utilize systems thinking and approach problems from interdisciplinary perspectives.
- Integrate theory and practice—and provide innovative solutions to society's most pressing environmental problems.
- Address environmental challenges at multiple scales from local to global and multiple settings from urban to rural and from managed to wild—including working lands and landscapes.
- Draw on the depth of resources at Yale and its network of alumni that extends across the world.
- Create opportunities for research and policy application as well as professional development through a structure of faculty-led centers and programs.
- Provide a neutral forum to convene conversations on difficult issues that are critical to progress on sustainability.

- Bring heightened focus to the most significant threats to a sustainable future, including climate change, the corresponding need for clean energy, and the increasing stresses on our natural resources.

HISTORY OF THE SCHOOL OF THE ENVIRONMENT

The School was established in 1900 as “The Yale Forest School” with a founding gift from the family of Gifford Pinchot, B.A. 1889, LL.D. 1925, a pioneer in the conservation movement who would later become the first head of the U.S. Forest Service. Through Pinchot’s vision and the work of the Forest School, Yale led the way in creating a new model of forest management and natural resource conservation, educating many of the nation’s first foresters — a vanguard of professionals who shaped our modern understanding of conservation, environmental education, and public lands. In fact, during its first four decades, the School would produce the first four U.S. Forest Service chiefs.

Over the past century, the School has grown from a more narrowly focused forestry program to an international institution with a diverse array of students from across the world graduating each year. In 1972, in recognition of its increased scope, the School changed its name to the Yale School of Forestry & Environmental Studies.

Then, on July 1, 2020, the School again changed its name to the Yale School of the Environment (YSE) to better reflect its established role as a leader in environmental scholarship and practice.

At the same time, the School established the Forest School at the Yale School of the Environment in recognition of its founding mission and because the teaching and study of forestry and forest science remain a core strength of the School. YSE students learn the principles of natural resource management through the innovative research and sustainable practice occurring at the nearly 11,000 acres of actively managed forests that constitute Yale Forests.

In addition to forest science and management, research and teaching at the Yale School of the Environment cover a broad range of environmental disciplines, including ecology, ecosystems, and biodiversity; environmental justice; environmental management and social ecology in developing societies; green chemistry and green engineering; global change science and policy; health and environment; industrial environmental management; policy, economics, and law; urban science, environmental planning, design, and values, among others.

The School has more than 5,500 living alumni who are working across the globe on a range of environmental challenges. They work in NGOs, government, business, academia, law, public health, and communications, among numerous other sectors.

Over the past two decades, the School has strengthened its connections within the wider Yale community and with external partners, introducing joint programs with Yale Law School and with the Yale Schools of Engineering & Applied Science, Management, Public Health, and Architecture, as well as with partner universities including Pace Law School, Vermont Law School, and Tsinghua University in China.

During the 1990s, YSE established and invested in a range of new centers, programs, and initiatives to expand its work beyond faculty research and classroom learning. Today, they number twenty and serve as dynamic foci for outreach to alumni, wider

professional audiences, and community organizations on critical issues such as climate change, environmental justice, tropical forestry, environmental communication, industrial ecology, and urban ecology, among others.

In 2017, YSE unveiled an ambitious new Strategic Plan. Among the plan's goals was the development of new curricula that track current and evolving strengths; increased programs and hiring to address environmental equity and diversity issues; a new emphasis on research and training in environmental communication; and expanded interdisciplinary research. Since then the School has adopted a new curriculum for the Master of Environmental Management program, which places more emphasis on subject specialization while maintaining its signature flexibility; introduced the Yale Center for Environmental Communication; and created the Yale Environmental Dialogue, an initiative that has engaged environmental leaders from a wide range of disciplines and sectors to inject new ideas and fresh energy into the national conversation on environmental policy. The School also is continuing to develop and strengthen strategic initiatives focused on environmental data, urban science, and environmental health and justice.

YSE's faculty and students have also become more diverse and representative of the wider world, convening from a range of professional, cultural, and sociological backgrounds. In 2020, the School welcomed to the faculty Dorceta Taylor and Gerald Torres, two of the country's preeminent scholars in the field of environmental justice, and Yuan Yao joined the faculty as an assistant professor of industrial ecology and sustainability systems. In 2023, Sparkle Malone, an expert on disturbance ecology and ecosystem dynamics, and Paulo Brando, an internationally recognized expert in tropical ecosystems, joined the faculty.

In 2021, a \$100 million gift from FedEx to Yale helped to establish the Yale Center for Natural Carbon Capture (YCNCC), which focuses on developing natural solutions for reducing atmospheric carbon. Liza Comita, YSE professor of tropical forest ecology, co-directs the Center, along with David Bercovici, the Frederick William Beinecke Professor of Earth & Planetary Sciences. Professors Malone and Brando, whose positions are supported by YCNCC, also serve on its Scientific Leadership Team, as do YSE faculty Mark Ashton, Mark Bradford, Peter Raymond, and Julie Zimmerman.

In 2022, the Yale School of the Environment partnered with the Three Cairns Group to launch the Three Cairns Climate Program for the Global South, a transformative initiative aimed at supporting the next generation of environmental leaders. Established with a historic gift from the Three Cairns Group, the cornerstone of the program is the Three Cairns Scholars program, which allows YSE to meet 100 percent of the demonstrated tuition need for qualified master's students from the Global South who are committed to combatting climate change in their home countries and regions. The Three Cairns Fellows program expands access to YSE's highly regarded online certificate programs. The gift also will support the development of two new certificate programs—one on urban climate leadership and one on environmental data science for climate solutions, both with a focus on the Global South.

In 2023, the Center for Green Chemistry and Green Engineering at Yale directed by Paul Anastas, Teresa and H. John Heinz III Professor in the Practice of Chemistry for the Environment, launched a U.N.-backed initiative, the Global Greenchem Innovation and

Network Programme, that will greatly accelerate research, development, and training in green chemistry in Indonesia, Jordan, Peru, Serbia, Uganda, and Ukraine.

LEADERSHIP FOR SUSTAINABILITY

Through its scholarship, teaching, practice, and power to convene, the Yale School of the Environment (YSE) is a leader in the development and implementation of sustainable practices locally and globally. The School creates new knowledge in the science of sustainability and new methods of applying that knowledge to environmental management and sustainable development, including the restoration of degraded environments.

On the Yale campus, the School has stepped up as a model in the sustainable use of resources and materials and has helped develop strategies and programs to achieve sustainability goals campuswide. In 2016, Yale committed to becoming carbon neutral by 2050. The University formed a task force to review and propose ambitious goals for reducing emissions, with a specific charge to explore how Yale could achieve net-zero carbon emissions. YSE's Kroon Hall is a LEED platinum building. The Yale Carbon Charge, an initiative born in a YSE classroom and developed in part by YSE faculty and students, has grown into a first-of-its-kind campuswide effort to reduce energy use through the use of internal carbon pricing.

In 2019, the University created a new multidisciplinary laboratory, the Yale University Carbon Containment Lab, which is developing and supporting innovative, scalable solutions to the climate challenge. And Yale's Center for Natural Carbon Capture, recently established with a \$100 million grant from FedEx, focuses on developing interventions that enhance the Earth's natural abilities to store carbon through biological and geological processes, and other methods that model natural processes. The interdisciplinary center is part of the University's broader Planetary Solutions Project.

Since its inception, the School has been working on the sustainable management of forests across the world—for biological diversity, for natural resource production, and, most recently, for carbon storage. For more than twenty years, the YSE-based Urban Resources Initiative (URI) has promoted community-based land stewardship, urban forestry, and green job training in the city of New Haven. Each year, YSE students and faculty work with landowners in northeastern Connecticut to promote sustainable forestry practices as part of the Quiet Corner Initiative. Many YSE students work as research assistants at the Yale Office of Sustainability, on projects ranging from sustainable materials management to climate resilience, all of which directly support the University's Sustainability Plan 2025.

For students, classroom learning often extends into local communities, where students have helped officials with climate resilience and adaptation strategies, green infrastructure development, and sustainable land stewardship and resource management plans. Their work has addressed a sweeping array of complex environmental challenges from dealing with lead-contaminated water in Flint, Michigan, to endangered species conservation in China. Our alumni also continue this commitment to sustainability in all its forms through their leadership in academic research, major corporate initiatives, government programs, and the nonprofit sector.

MASTER'S DEGREE PROGRAMS

Two-Year Master's Degree Programs

The School of the Environment offers four two-year master's degrees: the professionally oriented Master of Environmental Management (M.E.M.) and the Master of Forestry (M.F.), and the research-oriented Master of Environmental Science (M.E.Sc.) and Master of Forest Science (M.F.S.). The M.F. and M.F.S. programs are administered within the Yale Forest School. All the master's degree programs vary in their level of prescription, but all are sufficiently flexible to accommodate the diverse academic backgrounds, professional experiences, and career aspirations of a large and vibrant student body. The program curricula draw from more than 150 courses taught by more than fifty YSE faculty, as well as from courses taught elsewhere at Yale. Each student's course of study is customized through consultation with a faculty adviser who guides the student's learning experience from the first week at Yale until graduation. The master's degree programs require a minimum of two years in residence, 48 credits of coursework at Yale, a summer internship or research experience, and completion of the Training Modules in Technical Skills prior to the student's first term (see below).

MASTER OF ENVIRONMENTAL MANAGEMENT

The Master of Environmental Management curriculum draws from coursework in the natural and social sciences and focuses on the complex relationships among science, management, and policy. The purpose of the program is to provide students with an in-depth understanding of natural and social systems that can be applied to environmental and natural resource problem-solving in a policy or management context. In addition to coursework, students are expected to hone their capacities as leaders and managers through summer internships, professional skills courses, and other opportunities.

The M.E.M. curriculum requires students to focus on an area of specialization, while still offering the flexibility to tailor their course programming in a way that exposes them to other disciplines and subject areas. This structure assures that students develop both depth and breadth in their course study. All M.E.M. students take the fall Perspectives course (ENV 553), demonstrate interdisciplinary conversancy through either taking or satisfying waiver requirements for four 1.5-credit foundational knowledge courses (ENV 511, ENV 512, ENV 521, and ENV 522), and complete a capstone course or project. They round out their experience with general electives and a selection of at least four Professional Skills Modules.

Specializations are designed to ensure that students obtain sufficient depth in their chosen area of study. The specializations are:

1. Business and the environment
2. Climate-change science and solutions
3. Ecosystem management and conservation
4. Energy and the environment
5. Environmental policy analysis
6. Industrial ecology and green chemistry

7. People, equity, and the environment
8. Urban
9. Water-resource science and management

Specialization requirements account for 18 of the 48 total credits required for the M.E.M. degree, made up of two core courses and four electives, and it is possible to add a second specialization. Students will be asked to choose their specialization at the end of their first term of study, and this specialization will be listed on their transcript upon completion. Students may also propose a self-designed specialization path in collaboration with a faculty adviser and the senior associate dean of academic affairs.

MASTER OF FORESTRY

The Master of Forestry program trains professionals for the protection, management, and restoration of native forests and woodlands and associated human-made forest ecosystems (urban trees, agroforests, plantations); and for mediating and resolving the conflicting values of society that concern forests and associated ecosystems. Since 1900, the Master of Forestry program has provided leadership in the education of professional foresters. It is the oldest continuing forestry program in the Western Hemisphere. Almost all the early foresters in North America had their roots at Yale, including Aldo Leopold, M.F. 1909, and nine of the first twelve chiefs of the USDA Forest Service.

Master of Forestry graduates have pursued a variety of professional opportunities in forestry. Most start as general practitioners in management and with experience move through management to become policy makers and organizers. Some graduates use the degree as preparation for advanced study in doctoral programs.

The broad objective of the two-year M.F. program is realized by requiring a multidisciplinary suite of formal course work coupled with a progressive synthesis of knowledge in a significant project. Course work is supplemented through an array of local, regional, national, and international field trips to witness the practice of forestry in diverse settings. Real-world professional experience is provided through the Yale Forest and summer internships at a wide variety of resource management and policy organizations. Opportunities to engage in discussion with forest leaders are provided through workshops, meetings with visiting speakers of national and international repute, and involvement in the School's programs such as the Yale Forest Forum, the Forests Dialogue, the Tropical Resources Institute, and the Urban Resources Initiative.

The teaching objectives of the M.F. program are (1) to integrate knowledge about forests, natural resources, and society to form a sound basis for making management decisions; (2) to provide electives and other educational opportunities to specialize by focusing on a particular land use or management issue concerning forest ecosystem management; and (3) to provide opportunities for independent problem solving, critical thinking, and self-development. Students take a mixture of natural, social, and quantitative science courses, culminating in the second year with courses in integrated resource management and leadership. Flexibility in the choice of courses within the core curriculum as well as choice of electives allows each student to tailor the program to a desired specialization. Sample specializations have included community development and social forestry; protected areas management; extension and education; consulting

forestry; business; watershed health and restoration; tropical forest management; agroforestry; and industrial forest management.

The Master of Forestry degree is accredited by the Society of American Foresters (SAF). A minimum of two full years in residence and sixteen full courses (48 credits) is required for completion of this program.

MASTER OF ENVIRONMENTAL SCIENCE/MASTER OF FOREST SCIENCE

The Master of Environmental Science and the Master of Forest Science degree programs are expressly designed for students wishing to conduct research that contributes to basic and applied knowledge in any of the fields taught at YSE, such as ecology, hydrology, social ecology, economics, industrial ecology, or policy. These degrees are intended to facilitate a deeper disciplinary focus than the Management degrees, while allowing students the flexibility in course election that will allow them to meet diverse educational goals. The Master of Environmental Science is intended for students who wish to work broadly in different fields of environmental science. The Master of Forest Science is intended for students who wish to work in forest-related topics.

The course of study for both degrees includes formalized School-level training in the philosophy and practice of science. Training is provided through key courses in combination with extended project research and disciplinary and nondisciplinary electives. The scientific research required for this degree will be conducted in close collaboration with a YSE faculty adviser. *Therefore students must have a commitment from a faculty adviser before being admitted to these degree programs.* The Master of Environmental Science and Master of Forest Science programs require the student to produce a “scholarly product.” This product may take the form of a traditional master’s thesis or a paper(s) submitted to a refereed journal.

TRAINING MODULES IN TECHNICAL SKILLS (MODS)

All incoming master’s students participate in MODs, shorthand for field modules, which offer students the opportunity to participate in experiential learning. MODs will take place during August of 2023, with students rotating among different modules over the course of two weeks. Participating in MODs is a graduation requirement and an important opportunity to engage with classmates and build relationships.

Five-Year Program for Yale College and Yale-NUS College Students

The School of the Environment offers joint-degree, five-year options (with one year at YSE) that culminate in a baccalaureate and master’s degree intended for students who want to pursue careers in an environmental field. The joint-degree option is available to all undergraduates in Yale College and to environmental studies majors at Yale-NUS College. The program provides well-prepared students with accelerated graduate training in environmental science, management, and policy. Eligible students may apply for either a Master of Environmental Management (M.E.M.) or Master of Environmental Science (M.E.Sc.) degree. The program is built on careful integration of a student’s undergraduate curriculum with graduate requirements. Graduates

have become highly successful leaders within governments, corporations, nonprofit organizations, and academia.

Yale students interested in the five-year joint-degree program should apply to the program at the end of the fall term of their senior year, or in the two years immediately following graduation. Students in the five-year M.E.M. program are encouraged to take a gap year, or a year away from academia, between completing their undergraduate degree and beginning study at YSE. Applicants interested in applying to the M.E.Sc. should make an appointment to talk to the YSE Office of Admissions at admissions.yse@yale.edu prior to applying.

Joint Master's Degree Programs

The School of the Environment supports several curricula that work concurrently toward two degrees from different academic units of Yale University. Opportunities for development of joint-degree programs exist with the School of Architecture, Divinity School, Law School, School of Management, School of Public Health, School of Engineering & Applied Science, Jackson School of Global Affairs, the International and Development Economics program of the Graduate School's Department of Economics, and three programs offered by the Graduate School and coordinated through the MacMillan Center (African Studies, East Asian Studies, and European and Russian Studies). Joint-degree programs with Pace Law School and Vermont Law School constitute additional options. Applicants are urged to apply to both units at the same time. All of these programs are subject to the following general guidelines.

Applicants must apply to, and be accepted by, both units of the University according to normal admissions procedures. A minimum of one and one-half years (three full-time terms) and 36 credits is required at the School of the Environment. While the joint-program requirements vary in length (see below), it is recommended that students spend a complete academic year (two terms) at one school, the following academic year at the other school, and then split the remaining terms between the two schools.

Upon successful completion of the formal joint-degree program, the student will be awarded one of the four YSE master's degrees, together with the joint degree. The joint-degree programs, sponsoring Yale academic units, and associated residency requirements (which are in addition to the three-term requirement of YSE) are as follows:

1. School of Architecture: Master of Architecture I (five terms); Master of Architecture II (three terms).
2. Divinity School: Master of Arts in Religion (three terms); Master of Divinity (five terms).
3. Schools of law (Yale Law School, Pace Law School, and Vermont Law School): Juris Doctor (five terms).
4. School of Management: Master of Business Administration (three terms).
5. School of Public Health: Master of Public Health (three terms).
6. School of Engineering & Applied Science (Graduate School of Arts and Sciences): Master of Science (two terms).
7. Jackson School of Global Affairs: Master of Arts (three terms).

8. Department of Economics, International Development and Economics program (Graduate School of Arts and Sciences): Master of Arts (two to three terms).
9. African Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).
10. East Asian Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).
11. European and Russian Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).

To view specific requirements for each joint-degree program, visit <https://environment.yale.edu/academics/masters/joint-degrees>. For additional questions about these joint-degree programs, please contact the YSE Office of Admissions at info.yse@yale.edu or 800.825.0330.

JOINT-DEGREE PROGRAM WITH TSINGHUA UNIVERSITY

YSE offers a three-year joint-degree program with Tsinghua University School of Environment in China. This program consists of one and one-half years (three terms) at Tsinghua working toward a Master of Environmental Engineering and one and one-half years (three terms) at Yale working toward a Master of Environmental Management, Master of Environmental Science, Master of Forestry, or Master of Forest Science. Students who begin their program at YSE will spend one year (two terms) at YSE, followed by one and one-half years (three terms) at Tsinghua, and then conclude their program with one-half year (one term) at YSE. Students who begin their program at Tsinghua will spend one year (two terms) at Tsinghua, one and one-half years (three terms) at YSE, and then conclude their program with one-half year (one term) at Tsinghua.

Applicants must apply to, and be accepted by, both YSE and Tsinghua University under normal admissions procedures. For questions about this joint-degree program, please contact the YSE Office of Admissions at info.yse@yale.edu or 800.825.0330.

Part-Time Program

Students who wish to obtain a degree through the part-time option must complete the same curriculum as full-time students. Students must complete two part-time terms to equal a full-time term regardless of meeting credit requirements. Students must enroll for 6 to 8 credits per term and must complete the degree requirements within four years of matriculation. Part-time tuition will be \$12,375 per term for the academic year 2023–2024.

Special Students

For those who do not wish to pursue a degree program, YSE offers the option of special-student status. Special students may be registered for a period as short as one term and may enroll in a minimum of one course or elect to take a full load of four courses per term. Please note that international applicants who are not coming through a preestablished Memorandum of Understanding between a partner university and Yale University will likely not be able to participate in the special-student program. Special students may not be eligible to participate in the summer Training Modules in

Technical Skills. Under normal circumstances, no one may hold special-student status for more than one academic year. No degree or certificate is granted for special-student course work. Students will receive official transcripts of course work completed. For information on tuition for special students, see the chapter Tuition, Fees, and Other Expenses.

Special students wishing to matriculate in a degree program after completing courses will need to apply and be admitted through the YSE admission process described in the chapter Admissions: Master's Degree Programs. Course credits earned while in special-student status will not be applied toward any degree credit requirements, and any fees paid while in attendance as a special student will not be applied toward degree tuition requirements.

DOCTORAL DEGREE PROGRAM

The Doctor of Philosophy (Ph.D.) degree is conferred through the Yale Graduate School of Arts and Sciences. Work toward this doctoral degree is directed by the Environment department of the Graduate School, which is composed of the faculty of the School of the Environment. Doctoral work is concentrated in areas of faculty research, which currently encompass the following broad foci: agroforestry; biodiversity conservation; biostatistics and biometry; climate science; community ecology; ecosystems ecology; ecosystems management; energy and the environment; environmental and resource policy; environmental anthropology; environmental biophysics and meteorology; environmental chemistry; environmental ethics; environmental governance; environmental health risk assessment; environmental history; environmental law and politics; environmental management and social ecology in developing countries; forest ecology; green chemistry and engineering; hydrology; industrial ecology; industrial environmental management; plant physiology and anatomy; pollution management; population ecology; resource economics; silviculture; social ecology; stand development, tropical ecology, and conservation; sustainable development; urban ecology; urban geography; urban land cover change; urban planning; and water resource management.

REQUIREMENTS FOR THE DOCTORAL DEGREE

All courses listed in this bulletin are open to students working toward the doctoral degree. Additional courses are available in other departments – e.g., Anthropology; Chemistry; Earth and Planetary Sciences; Ecology and Evolutionary Biology; Economics; Management; Mathematics; Molecular, Cellular, and Developmental Biology; Political Science; Sociology; and Statistics and Data Science – and are listed in the bulletin of the Graduate School.

A doctoral committee will be appointed for each student no later than the student's second term in the program. The committee consists of a minimum of two faculty members from the Yale University community. When appropriate for their research areas, students are encouraged to suggest committee members from other universities or institutions. Doctoral students work under the supervision of their doctoral committees. The committee should be chaired or co-chaired by a YSE ladder faculty member.

Students are required to take the Doctoral Student Seminar (ENV 900) during the first year of their program.

Two Honors grades must be achieved before a student is eligible to sit for the qualifying examination. In addition, students are expected to serve four terms (10 hours per week) as teaching fellows, in partial fulfillment of their doctoral training.

A written and oral qualifying examination is required upon completion of the course requirements. Students are expected to take the examination by the end of their second year, although this can be extended to the third year in cases with appropriate extenuating circumstances. At the time of the qualifying examination, the student must present a prospectus of the research work proposed for the dissertation. Successful

completion of the qualifying examination and submission of the prospectus will result in admission to candidacy.

The director of doctoral studies (DDS) of the School serves as director of graduate studies for the Environment department of the Graduate School, administers the doctoral program, and may be consulted if questions arise.

Before beginning work, the student must secure approval from the student's committee and the DDS for a proposed program of study and for the general plan of the dissertation. Appropriate advanced work is required. Courses chosen should form a coherent plan of study and should support research work for the proposed dissertation.

The dissertation should demonstrate the student's mastery of the chosen field of study as well as the ability to do independent scholarly work and to formulate conclusions that may modify or enlarge previous knowledge.

Candidates must present themselves for the oral defense of the dissertation at such time and place as the student, the DDS, and the committee determine. Upon completion of the dissertation, the candidate must make unbound copies of the dissertation available to the faculty. Copies of the approved dissertation must be submitted to the Graduate School.

COMBINED DOCTORAL DEGREE

Department of Anthropology

The School of the Environment offers a combined doctoral degree with Yale's Department of Anthropology. The purpose of the degree is threefold: it combines (1) the disciplinary identity and strengths of the Anthropology department with the interdisciplinary character and possibilities of YSE, especially in terms of bridging the social and natural sciences; (2) the strengths in ecological and environmental studies of YSE with the social science strengths of the Anthropology department; and (3) the Anthropology department's strengths in theory with the emphasis within YSE on linking theory with policy and practice. The combined doctoral degree offers its graduates great flexibility when entering the marketplace. They can represent themselves as anthropologists and/or environmental scientists, as theoreticians and/or practitioners. They have the credentials to apply for policy-oriented positions with international institutions, as well as academic positions in teaching and research. The academic program of each student in the combined-degree program is to some extent tailored specifically to that student's particular history, interests, and needs, but all combined-degree students are expected to follow the program's general guidelines.

Prospective combined-degree students must initially apply either to Anthropology or to the doctoral program in Environment (not both) and check the combined-degree box on the application form. Students should communicate with faculty in both programs during the year prior to application, and they should apply to the program where their credentials and faculty contacts offer the greatest chance of admission. The program is extremely competitive, accepting one or two students per year out of dozens who apply. (Note: most successful applicants to YSE hold a prior master's degree.)

Once a student is accepted in either Environment or Anthropology, the application file is sent to the second department for consideration. A positive decision at this point

amounts to acceptance into the combined-degree program. (A negative decision, which is rare in any case, does not affect the student's prior admission into the first program.) Students admitted into the combined-degree program will be allocated to the department to which they initially applied as their primary administrative home, but they will enter Yale as members of the combined-degree program. A student who does not apply to the combined-degree program at the time of their initial application to Yale may still apply after matriculating at Yale, but this should be done as soon as possible in their first term on campus.

Detailed guidelines for the combined-degree program can be found on the YSE website at <http://environment.yale.edu/doctoral/degrees/combined-anthropology>. The program coordinators are Michael Dove (YSE) and Kalyanakrishnan Sivaramakrishnan (Anthropology).

New York Botanical Garden

The School of the Environment offers a combined doctoral degree with the New York Botanical Garden, which is funded by the Lewis B. Cullman Fellowship. The objective is to train biological scientists to use an interdisciplinary approach to solving problems associated with tropical environments.

Areas of study include agroforestry and forest management, ecosystem analysis, economic botany, economic evaluation of tropical resources, ethnobotany, plant biodiversity and conservation, social processes affecting management of natural resources, tropical field studies, and tropical silviculture.

For more information about the combined doctoral degree, please contact the director of doctoral studies at 203.432.5146.

SUBJECTS OF INSTRUCTION

Courses offered by the School of the Environment are described below. The letters “a” and “b” following the course numbers indicate fall- and spring-term courses, respectively. Courses with bracketed titles will not be offered during the 2023–2024 academic year.

Project courses involve individually assigned advanced field or laboratory work, or literature review, on topics of special interest to the student; credits and hours for these projects are determined for each student in consultation with the instructor.

Courses throughout the University are generally open to students enrolled in the School of the Environment, subject to limitations on class size and requirements for prerequisites.

COURSE DESCRIPTIONS

At YSE, new courses are often added after this bulletin is printed. Please visit our website at <https://resources.environment.yale.edu/courses> for an updated list. See also Yale Course Search at <https://courses.yale.edu> for many other environmental courses in other Yale departments.

ENV 511a, Ecological Foundations for Environmental Managers

This course gives students a fundamental mechanistic understanding about the way abiotic (e.g., climate) and biotic (e.g., resources, competitors, predators) factors determine pattern in the distribution and abundance of species. Students learn how individuals within a species cope with changing environmental conditions by altering their behavior, making physiological adjustments, and changing the allocation of resources among survival, growth, and reproduction. Students learn how populations of species coexist within communities and how species interactions within communities can drive ecosystem functioning. Students also learn how ecologists use scientific insight to deal with emerging environmental problems such as protecting biodiversity, understanding the consequences of habitat loss on species diversity, and forecasting the effects of global climate change on species population viability and geographic distribution. 1½ Course cr

ENV 512a, Microeconomic Foundations for Environmental Managers

This six-week course provides an introduction to microeconomic analysis and its application to environmental policy. Students study how markets work to allocate scarce resources. This includes consideration of how individuals and firms make decisions, and how policy analysts seek to quantify the benefits and costs of consumption and production. We consider the conditions under which markets are beneficial to society and when they fail. We see that market failure arises frequently in the context of environmental and natural resource management. The last part of the course focuses on the design of environmental and natural resource policies to address such market failures. The course is designed to cover basic knowledge of economics analysis and prepare students for ENV 834 and other more advanced offerings. 1½ Course cr

ENV 521a, Physical Science Foundations for Environmental Managers

This required foundational course provides students with the physical science basics that they need to understand and manage environmental problems. The course draws on climatology, environmental chemistry, geology, hydrology, meteorology, oceanography, and soil science. Focus is on understanding both the underlying concepts and how they apply to real-world environmental challenges. Useful both as a freestanding course and as a gateway to a wide spectrum of intermediate and advanced courses. 1½ Course cr

ENV 522a, Human Science Foundations for Environmental Managers

The environmental fields of inquiry that focus on human behavior, culture, governance, and history have matured and proliferated in the twenty-first century (environmental anthropology, environmental sociology, environmental governance, environmental history, environmental humanities, and more). This new scholarship has advanced the academic state of knowledge and sharpened our collective ability to understand human-environmental relations. Yet despite better science, we struggle to make material change in the collective rate of human consumption of Earth's natural resources. Not only is the planet harmed by our failures, but millions of people are also harmed. Embedded in all scientific endeavors is a theory of change. But rarely are theories of change made explicit for environmental stewardship. In this course, we investigate new bodies of scholarship that explore relational values, varying concepts of stewardship, a range of theories of change, and, finally, capabilities or human rights-based measure of the life well lived. We explore the following questions: What does it mean to be an environmental steward in a world filled with social, political, and economic inequalities? How can we weave together multiple knowledge systems or ways of knowing through environmental stewardship? How can we balance the need for social and environmental change in a way that is both place-based and responsive to global concerns? Can theories of change help us act when the scientific data is both clear and uncertain? How can we incorporate non-economic measures of human well-being into our decision making? 1½ Course cr

ENV 550a, Natural Science Research Methods

The course prepares students to design and execute an intensive research project. It covers elementary principles and philosophy of science; research planning, including preparation, criticism, and oral presentation of study plans; communicating research findings; limitations of research techniques; the structure of research organizations; and professional scientific ethics. 3 Course cr

ENV 551a, Qualitative Inquiry and Environmental Human Sciences

Qualitative research is a robust and reliable means of knowledge production and is central to exploring questions of the human condition. As an approach to understanding the human-nature nexus, qualitative research prioritizes multiple ways of knowing the world (epistemology), engages with philosophical concerns about how can we know what is "truth" (ontology), and ultimately seeks to design better futures (a normative endeavor based in values or axiology). The tools we explore include 1) oral methods (interviews, life histories, focus groups), 2) text-based methods (archival research and document or textual analysis), and 3) participatory methods based on observation and knowledge co-production. Students learn how to interpret and analyze qualitative data, as well as evaluate the claims made by qualitative researchers. The course is intended for doctoral students who are in the beginning stage of their dissertation research, as well as for MEd students developing research proposals for

their thesis projects. Advanced undergraduate students are welcome. The final project for this course is a research proposal and annotated bibliography. While we discuss the value of mixed methods, this course *does not* cover quantitative approaches such as survey research, econometrics, Q methodology, spatial analysis, or social network analysis. 3 Course cr

ENV 553a, Perspectives: Environmental Leadership

The course is intended to offer a common experience and exposure to the variety of perspectives represented by YSE faculty and guest experts on the challenges and opportunities of environmental management. This year's theme is Environmental Leadership, and over the term we create and foster a leadership toolkit and systems-thinking appreciation that enable first-year M.E.M. students to map out and maximize an impactful path through Yale, their careers, and their lives. 3 Course cr

ENV 561b, Energy Justice Seminar

Energy justice refers to the goal of achieving equity in the social and economic participation in the energy system, while also remedying social, economic, and health impacts on those disproportionately harmed by the energy system. This seminar-based course provides students with exposure to the latest thinking in the burgeoning field of energy justice. As this is an inherently interdisciplinary area, this course draws from multiple disciplines, including, but not limited to, law, sociology, anthropology, and economics. It covers topics relating to energy justice in the areas of policy and regulation, community advocacy, legal implications, health implications, and private sector interactions. 1½ Course cr

ENV 568a, Overshoot: The Environmental and Policy Implications of Exceeding 1.5°C

Despite dire warnings from the IPCC and earnest pledges of various governments and other institutions, including Yale, humanity is likely to surpass 1.5°C early in the next decade and 2°C by midcentury, placing us in the dangerous realm of temperature “overshoot.” This course starts by examining our likely climate trajectory, relying heavily on recent IPCC reporting including the AR6. We then delve into the toolkit of climate responses that would become relevant in an Overshoot Scenario—not merely mitigation and adaptation but also negative emissions technologies and strategies to reflect incoming sunlight. After exploring the technological, economic, and political feasibility of these potential interventions, we close by considering their governance requirements, ethical implications, and the impact of public perception on policy options. The entire course is framed via the lens of the Global Commission on Governing Risks from Climate Overshoot, an independent group of eminent global leaders assembled in 2022 to recommend strategies to reduce risks should global warming goals be exceeded. The Commission is scheduled to deliver its report in to the UN General Assembly in September 2023. We examine the report in detail and arrange dialogue (likely via Zoom) with members of the Commission and/or its Secretariat. A possible field trip to Manhattan to observe the report's initial presentation is explored (but cannot be assured). Prerequisite: This is intended as a second-level course for students who have already taken an introductory course on climate studies including: EVST 100, ENV 614, ENV 630, ENV 636, ENV 716, ENV 800, ENV 814, ENV 840, and ENV 878. 1½ Course cr

ENV 573a, Urban Ecology for Local and Regional Decision-Making

Urban ecology is the interdisciplinary study of urban and urbanizing systems from local to global scales. While urban ecology shares many features with the biological science

of ecology, it emphasizes linkages with social, economic, and physical sciences and the humanities. Geographically, the subject includes central and edge cities, suburbs of various ages and densities, and exurban settlements in which urban lifestyles and economic commitments are dominant. In application, urban ecology can be useful as a social-ecological science for making cities more sustainable, resilient, and equitable. Emerging “grand challenges” in urban ecology include the development of robust approaches to and understanding of (1) integrated social-ecological systems in urban and urbanizing environments; (2) the assembly and function of novel ecological communities and ecosystems under novel environmental conditions; (3) drivers of human well-being in diverse urban areas; (4) pathways for developing healthy, sustainable, and disaster-resilient cities; and (5) co-production of actionable science for policy, planning, design, and management. 3 Course cr

ENV 581a, Transportation and Climate Change

Transportation is the fastest-growing contributor to greenhouse gas emissions, worldwide, but has often been considered the most challenging sector to decarbonize. In this course, we critically analyze a range of policies to improve fuel economy, promote electric vehicles, and reduce vehicle travel. We briefly consider the range of infrastructure and policy changes that can reduce greenhouse gas emissions from transportation. But we spend more time on the question of how these changes can be implemented and the tradeoffs between emission reductions, equity, safety, and other policy goals. The course has a US focus, but we bring in examples from other contexts from time to time. 1½ Course cr

ENV 584a, Applications of Industrial Ecology

Industrial ecology (IE) is an interdisciplinary environmental field that blends environmental and social science, engineering, management, and policy analysis. IE is centered on the study of physical resource flows through systems at different scales. The unusual name “industrial ecology” stems from an analogy made with biological ecosystems and borrows from it on several fronts, such as its focus on resource cycling, multi-scalar systems, resource and energy stocks and flows, and food webs. Increasingly, industrial ecology contributes insights into environmental management and policy on issues ranging from industrial waste to global climate change. This is a survey course that combines basic introductions to industrial ecology tools and concepts with examples of their use in environmental policy and management. 1½ Course cr

ENV 592a, Documentary Film Workshop Charles Musser

This workshop in audiovisual scholarship explores ways to present research through the moving image. Students work within a Public Humanities framework to make a documentary that draws on their disciplinary fields of study. Designed to fulfill requirements for the M.A. with a concentration in Public Humanities. 3 Course cr

ENV 595a or b, Yale Environment Review

The *Yale Environment Review* is a student-run publication that aims to increase access to the latest developments in environmental studies. We aim to shed light on cutting-edge environmental research through summaries, analysis, and interviews. During this one-credit course, students produce one or two articles on subjects of their choosing for publication on the *YER* website. Please refer to our website and Canvas for an overview of the different types of content that *YER* produces. Students receive coaching to improve their writing skills, and their work goes through a rigorous editing process.

Participation in *Yale Environment Review* helps students sharpen their writing skills and familiarize themselves with science communication, and it provides a platform to showcase their expertise.

ENV 598b, Documentary and the Environment

Survey of documentaries about environmental issues, with a focus on *Darwin's Nightmare* (2004), *An Inconvenient Truth* (2006), *Food, Inc.* (2009), *GasLand* (2010), and related films. Brief historical overview, from early films such as *The River* (1937) to the proliferation of environmental film festivals. 3 Course cr

ENV 602a, Ecosystems and Landscapes

Concepts and their application in ecosystem and landscape ecology. Topics covered include biogeochemical cycling, food web interactions, biodiversity, and the abiotic and biotic controls that act on them. The course emphasizes how to integrate this knowledge to understand and manage ecosystem budgets. 3 Course cr

ENV 603a, Environmental Data Visualization for Communication

Welcome to the Information Age! It is now much easier to generate and access more data than ever before. Yet, our ability to manage, analyze, understand, and communicate all this data is extremely limited. Visualization is a powerful means of enhancing our abilities to learn from data and to communicate results to others, especially when informed by insights into human behavior and social systems. Developing the quantitative skills necessary for analyzing data is important, but for addressing complex and often urgent environmental problems that involve diverse audiences: understanding how to effectively communicate with data is equally essential for researchers, policymakers, and the public alike. This course is for students who wish to gain an understanding of the principles, tools, and techniques needed to communicate effectively with data. The course primarily uses the programming language R. Students are required to demonstrate basic proficiency in this software before or during the course. Resources for learning R are provided. Classes consist of short lectures about principles of design, data preparation, and visual communication, discussions about examples from the news and scientific literature, guest lectures, peer critiques, and hands-on individual and collaborative group activities. Throughout the semester, we use Excel, PowerPoint, R, Tableau, and other tools to develop visualizations using diverse datasets. Students also work with a dataset of their own choice or from a partner organization to develop a final project consisting of a poster, infographic, report, dashboard, story map, or related product. Enrollment is limited and application is required. 3 Course cr

ENV 605a, Environmental Risk Communication

Risk communication is a critical but often overlooked part of how organizations identify and manage risks. Effective risk communication can help people understand risks and determine appropriate responses to them. It should help people to take seriously risks they might otherwise ignore (e.g., to get vaccinated or evacuate from a coming hurricane), or to understand that certain activities do not pose significant risks. Effective risk communication enables environmental professionals to communicate information in a way that is understood and accepted by different stakeholders (e.g., the public, industry, government leaders, etc.) and allows the participation of these stakeholders in risk management decisions. This course provides an overview of the theory and practice of effective communication about environmental and health risks to

diverse stakeholders. Students are expected to actively participate in class discussions, drawing upon assigned readings, lectures, and videos. 3 Course cr

ENV 608b, Our Air, Our Health

Exposure to air pollution is a leading contributor to the global disease burden. This course discusses major emission sources, atmospheric transformation and transport, measurement and modeling techniques for human exposure assessment, and the health impacts of air pollutants. Emphasis is placed on students gaining hands-on experience with measurement (e.g., low-cost sensors, passive samplers) and spatial analysis tools (e.g., ArcGIS) for application to research, public health practice, and community engagement. Through a series of laboratory sessions, students quantitatively characterize indoor and outdoor exposure concentrations and learn methods to critically assess data quality. The public health implications of air pollutant exposure are examined through review of recent epidemiological and toxicological research. The course discusses inequitable distribution of air pollutant exposure across the United States in relation to environmental health disparities. The health benefits of air pollutant intervention strategies in developed and developing regions and implications for policy action are also covered. 3 Course cr

ENV 610a, Managing Ecosystems for Climate Change Solutions

This course explores how natural climate solutions (i.e., actions to protect, better manage and restore ecosystems) can mitigate climate change. It also assesses the challenges and barriers that must be overcome in order to make natural climate solutions more sustainable. During the course, students are exposed to concepts about how the conservation and management of natural and anthropogenic terrestrial ecosystems (e.g., conservation of natural ecosystems, forest and agriculture management, and restoration of degraded areas) have influenced the carbon and water cycles, two important climate services provided by terrestrial ecosystems. Students also address some of the potential socio-ecological consequences of nature-based solutions, with a focus in the tropics. Finally, the course covers some of the main challenges and opportunities for scaling up carbon natural climate solutions. 3 Course cr

ENV 613b, Writing as a Public Scholar

Environmental scholars and practitioners increasingly recognize the need, and often have the desire, to communicate their passions and expertise to a wide lay audience. The seminar starts from the premise that to do this effectively requires a mastery of written storytelling, particularly in today's saturated and fractured media landscape. Students read popular works by classic and contemporary scholars, such as Rachel Carson and Richard Prum; practitioners in the sciences, such as Atul Gawande and Peter Wohlleben; and journalists such as Elizabeth Kolbert and John McPhee; as well as a growing number of authors, such as Bill McKibben, whose work crosses these categories. Students analyze some pieces multiple times, developing an increasingly nuanced understanding of storytelling technique. 3 Course cr

ENV 617b, Real-World Environmental Data Science

The goal of this course is to provide students with a foundational understanding of what it takes to perform environmental data work in a practical, professional setting. To make sound policy decisions, we need data, and the reality is that data is often messy, difficult to find, and incomplete. In order to effectively leverage the data, students need to be able to troubleshoot when there is a problem. We focus on understanding the mechanics and nuances of working with messy data in the professional setting, not

teaching statistics. We provide a high-level explanation of methods, what they tell us, and how they are useful, and then focus on implementation. 3 Course cr

ENV 618b, Anthropology of Smallholder Agriculture in Developing Countries

The premise of this course is that small-scale agriculture, its distinctive economic character, and its ecology shape each other in important ways. The course explores smallholder farming in the developing world through ethnographies. 3 Course cr

ENV 619a, Philosophical Environmental Ethics Stephen Latham

This is a philosophical introduction to environmental ethics. The course introduces students to the basic contours of the field and to a small number of special philosophical problems within the field. No philosophical background is required or expected. Readings are posted on Canvas and consist almost entirely of contemporary essays by philosophers and environmentalists. 3 Course cr

ENV 623a, The Role of Methane in Global Climate Disruption: The Search for Solutions

In this course students develop methane literacy, reviewing evidence from primary literature to understand the methane cycle and how it impacts the global climate system. Students read primary scientific literature, contribute questions/topics for discussion, and map the provenance of research. Meeting time is used for presentations and discussions. Enrollment is limited to twenty-five. 3 Course cr

ENV 624a, The Science, Policy, and Management of GHG Removal Strategies

In order to avoid the worst effects of climate change, there is growing interest in the advancement of greenhouse gas (GHG) removal from the atmosphere as a complementary strategy to emission reductions. This interdisciplinary seminar covers the science, policy, and management of a broad range of GHG removal strategies. What are they? What is the current scientific basis? What are their potentials? And how might policy, markets, and institutions promote or impede GHG removal? While the seminar covers a set of nature-based climate solutions, we also consider more engineered approaches, along with original research related to advancing new technologies and program evaluation. The seminar is organized around readings in the primary literature with weekly student presentations and discussion. 3 Course cr

ENV 625b, Writing Workshop

This course is aimed at helping students improve their writing. The goal is to develop writing skills and make students better able to communicate their work and ideas through writing that is clear, accessible, and free of jargon. Students are required to write every week throughout the course: short assignments (600–800 words) each week, and one longer assignment (1,500–2,000 words) due at the end of the term. 1½ Course cr

ENV 626a, Writing for Publication in the Natural Sciences

This course is intended to give students insights into the process of writing natural science manuscripts. The seminar guides students through writing a paper and ends the term with a submitted manuscript. We also consider various strategies for writing, accountability, time management, and productivity. The course is aimed at students in the natural sciences with cleaned and analyzed data that they want to write up for publication.

ENV 630b, The Physical Science of Climate Change

The course provides students with core knowledge on the processes controlling the earth's climate system. The first half of the class focuses on the four components of the earth climate system, providing a knowledge base on the atmospheric energy and water budgets and the roles of anthropogenic greenhouse gases, the oceans, land and cryosphere in altering these budgets. Students also learn how to run a climate GCM (general circulation model). The second half of the class focuses on impacts of climate change on a number of societal sectors including natural ecosystems, energy use, water resources, the food system and the built environment. 3 Course cr

ENV 631a, Poverty, Environment, and Inequality

This course explores the relationship between poverty, environment, and social inequality. It examines how race and class interact in American rural and urban environments to produce or sustain inequalities. The course examines how structural factors and community characteristics influence environmental outcomes. Students begin by examining the relationship between degraded environments and poor schooling. They examine the environmental hazards that exist in or adjacent to urban and rural public schools. Students will analyze inner-city and poor rural communities as they examine disinvestment, the concentration of poverty, efforts to disperse the poor, and the potential for community revitalization. Students examine homelessness and the ways in which climate disasters impact housing experiences. The course also examines another aspect of poverty: the issue of food security; it looks at the rise in community gardening in poor communities as an attempt to combat lack of access to healthy food. Students examine residential segregation and zoning and study the spatial inequalities that arise from the siting of hazardous facilities in minority and low-income urban and rural communities. The course examines the classic environmental justice question: which came first the facilities or the people? It examines economic questions related to costs of hosting noxious facilities and if and how communities can seek compensation to host such facilities. The course also examines the quandary communities face when presented with economic models that seek to provide compensation – the question of the long-term health of the people and environment takes center stage as community residents seek to determine how to balance economic development with concerns about sustainability. Students analyze water, energy, and climate justice. 3 Course cr

ENV 632a, Social Entrepreneurship Lab

Have you ever wondered what it would be like to practice social entrepreneurship? You don't have to found your own company to make a difference. Everyone can learn from the social entrepreneurship mindset and skillset, and apply it in their own way to create social impact. In this course, we combine theory and practice, applying a systematic framework to guide students through the social entrepreneurship experience. We start by identifying a social or environmental challenge each student is interested in tackling. Students form interdisciplinary teams to immerse themselves in characterizing the challenge, ideating potential solutions, and building business models around those solutions. Social Entrepreneurship Lab is a safe space to experiment, iterate, prototype, test, and fail. You don't need to launch your venture, though some teams will. You'll meet alumni who launched new ventures and social entrepreneurs from New Haven and around the world. All students are welcome; no prior experience necessary. 3 Course cr

ENV 633a, Critical Race Theory

This class studies critical race theory from its origins to its current expression. Understanding the deep interconnections between race and law, and how race and law are co-constitutive, is the project of critical race theory. One of the central claims of critical race theory is that racial subordination is not a deviation from the liberal legal ideal but is, unfortunately, part of its expression. We focus on the origins of the critique that is central to the development of the theory and contrast its analysis with conventional analytic frameworks on race and American law and society. Because it is a positive theory but also driven by a normative vision, we explore the possibility of transforming the relationship between law and racial power. The law is not the only site of critical race theory; it has had a significant impact on other disciplines in the social sciences. We examine those impacts as well. 3 Course cr

ENV 635b, Renewable Energy Project Finance

The course is intended to be a practicum, exposing students to real-world tools of the trade as well as the theory underlying them. In place of a textbook, students are provided with approximately 400 pages of actual project documents used for a U.S. wind energy project constructed relatively recently. Through weekly homework assignments, students develop the skills necessary to construct a detailed financial model, largely comparable to what would be used by an investment firm, project developer, or independent power producer. Modeling skills include sizing debt capacity, sensitivity analysis, stochastic forecasting, taxes, and the creation of financial statements. Lectures also provide an introduction to risk management, energy market dynamics, alternative contractual structures, financial structuring, and the core engineering and risks inherent in the most common renewable energy technologies. This course is entirely online. While cross-listed at the School of Management, it follows the YSE academic calendar. Admission requires an application consisting of a one-paragraph statement of interest. The application is available on Google Forms and can be submitted at <https://forms.gle/YHEM8fWh75f3AwmYA> 3 Course cr

ENV 641a, Market-Based Mechanisms for Water Management

This course provides students with both the theory and application of environmental water transactions (EWTs) to water management challenges, such as river restoration, drought-mitigation, and agricultural allocation. The geographic focus is primarily the western United States, as this region, out of necessity, has been very active in implementing EWTs in recent years. Other market-based mechanisms for water management also are explored, such as groundwater mitigation banks, urban stormwater markets, and water quality markets. The course also covers considerations such as environmental justice, tribal access to and use of water, and diversity/equity/inclusion in water management. A final project gives students the opportunity to develop a simple hydrological and water rights model for a fictional watershed to use as the basis for designing a suite of water transactions and market-based water management solutions. This is an online course taught by experienced professionals who value a hands-on approach to learning. In addition, the course features discussion of current events in water, case studies, and guest lectures from practitioners actively using market-based mechanisms for water management. 3 Course cr

ENV 642a, Environmental Justice/Climate Justice

In this course, we focus on the evolution and development of the environmental justice movement. We pay particular attention to its embrace of climate justice, and we ask what conception of justice is at play in both the environmental justice and climate justice movements. We begin with a legal and social-historical survey but quickly bring the inquiry up to the current moment. We explore the legal and policy developments that have followed the environmental justice critique. 3 Course cr

ENV 645a, Urbanization, Global Change, and Sustainability

Urbanization and associated changes in human activities on the land (*land use*) and in the physical attributes of Earth's surface (*land cover*) have profound environmental consequences. Aggregated globally, these effects constitute some of the most significant human impacts on the functioning of Earth as a system. This course examines the interactions and relationships between urbanization and global change at local, regional, and global scales with an emphasis on the biophysical aspects of urbanization. Topics include urbanization in the context of global land use change, habitat and biodiversity loss, modification of surface energy balance and the urban heat island, climate change and impacts on urban areas, urban biogeochemistry, and urbanization as a component of sustainability. Emphasis is on management of urban areas *worldwide* or at national scales for planetary sustainability. 3 Course cr

ENV 646a, Foundations of Agriculture and Environment

Agricultural systems have a profound impact on the environment, but also depend on environmental processes—such as climate and nutrient cycling—for continued productivity. Because of this two-way relationship, there has been a growing integration of environmental and agricultural sciences over the past several decades with growing recognition that designing and implementing agricultural systems that minimize environmental harm and benefit people is necessary to sustainable development. This course provides foundational knowledge of how agricultural and environmental systems are linked. The goal is to provide theoretical understanding of the important environmental and human processes, as well as practical experience interpreting these processes and applying them to real-world scenarios. 3 Course cr

ENV 653b, Maple: From Tree to Table

This course covers the cultural, industrial, and sustainable practices of nontimber forest products through the lens of maple sap and syrup. Maple sugar is a forest product unique to northeastern North America, and it has seen a resurgence in interest as global consumers seek nutritious, natural, and sustainably produced foods. This course covers the booming industry and culture around maple syrup, from backyard operations through modern 100,000-tap investment operations. Maple producers are on the front lines of climate change and forest health threats. The course provides students with the knowledge of how challenges related to forest health and climate change are directly impacting maple producers and how these producers are learning to adapt in ways that are environmentally friendly, ecologically sound, and financially competitive in a global market.

ENV 654a, Structure, Function, and Development of Trees

This course focuses on two aspects of plant life: (1) basic processes that drive plant development, such as seed formation, germination, seedling establishment, maturation, and senescence; and (2) basic structure and function of plants (such as root systems, leaf formation and development, height, and diameter growth). Differences between

different groups of seed plants are analyzed from structural, functional, ecological, and evolutionary standpoints. Special attention is given to woody plants and their importance in the biosphere and human life. Coverage includes tropical, temperate, and boreal trees. Plant biology is discussed in the context of physiological and structural adaptations in terms of strength, storage, and water and solute transport. 3 Course cr

ENV 656b, Tree Physiology and Ecophysiology

Mineral nutrition and cycling, mycorrhizas, symbiosis, nitrogen fixation, light processing, photosynthesis, respiration, water relations including transpiration, and ecophysiology are covered. The interaction of photosynthesis with water relations, mineral nutrition, temperature, and environmental stress is discussed. Effects of climate changes on forests, past and present, and other current topics are also considered. Term paper required. 3 Course cr

ENV 659b, The Practice of Silviculture: Principles in Applied Forest Ecology

The scientific principles and techniques of controlling, protecting, and restoring the regeneration, composition, and growth of natural forest vegetation and its plantation and agroforestry analogs worldwide. Analysis of biological and socioeconomic problems affecting specific forest stands and design of silvicultural systems to solve these problems. Applications are discussed for the management of wildlife habitat, bioenergy and carbon sequestration, water resources, urban environments, timber and nontimber products, and landscape design. Four to six hours lecture. One-hour tutorial. Seven days of fieldwork. Recommended: some knowledge of soils, ecology, plant physiology, human behavior, and resource economics. 4 Course cr

ENV 660a, Forest Dynamics

This course introduces the study of forest stand dynamics—how forest structures and compositions change over time with growth and disturbances. Understanding the dynamic nature of forest stands is important for creating and maintaining a variety of critical ecosystem services sustainably and synergistically, including sustainable supplies of wood products, biodiversity and wildlife habitats, water, fire protection, and others. Through readings, lectures, and discussions we explore forest development processes and pathways, concentrating on the driving mechanisms and emergent properties including natural and human disturbances. This course is a core component of the M.F. degree but is explicitly designed to be accessible to anyone interested in an in-depth exploration of forest ecosystems. 3 Course cr

ENV 671a, Temperate Woody Plant Taxonomy and Dendrology

Dendrology literally translates as “the study of trees” and integrates morphology, phenology, ecology, biogeography, and the natural history of tree species. In this course students learn how to identify the major temperate woody plant families, with a focus on North American forest species. In addition, students learn the morphological and ecological traits used for field identification of woody plants. We use phylogenetic systematics as the structure for understanding the evolutionary history and relationships between species. Class periods consist of practical field and laboratory skills used in plant taxonomy and field lecturing. Weather permitting, we are in the field for the majority of class periods. We use an ecosystem focused approach for plant identification. Besides learning how to identify species, we discuss principles of plant ecology, biogeography, and natural history in each of the ecosystems we visit. Limited to thirteen. 3 Course cr

ENV 674b, Forest Ecosystem Health

This course is an introduction to the biotic and abiotic agents affecting the health of forest ecosystems and forest sustainability, including insects, pathogens, parasites, climate change, and other large-scale disturbances, and includes the consideration of linkages between forest health and human health. Using a case-study approach, several different forest types are examined in detail, with students interacting with research and management professionals who visit the class in person or via remote conferencing. Students learn concepts and methods of assessing forest health, as well as some of the challenges in describing and defining forest health. The course emphasizes the ecological roles played by disturbance agents (both biotic and abiotic), discusses how they affect the health and sustainability of forest ecosystems, and identifies when and how management can be used to improve forest health and/or forest sustainability to manage or mitigate disturbance agents such as invasive pathogens and insects. The course provides students with the necessary background to determine how different stressors may negatively impact management objectives, to identify the probable stress agents, and to decide what, if any, actions should be initiated to protect forest health and sustainability. The course includes several field trips and workshops on the weekends. 4 Course cr

ENV 679a, Plant Ecophysiology

This course focuses on the physiological ecology of plants and their interaction with the biotic and abiotic environment, understood through the lens of first principles. We use a quantitative approach to demonstrate the linkages between photosynthesis, growth, and carbon allocation at the tissue and whole plant level, which can then be scaled up to forests and ecosystems. We also focus on specific physiological and anatomical adaptations plants use to survive in the many varied habitats on Earth. Enrollment limited to twenty-four. 3 Course cr

ENV 684a, Forest Finance

Understanding the tools used in financial analysis is an important component of successful forestland investment and forest management decision-making. This course provides students with a basic suite of financial tools used in the acquisition and management of forestland/timber. It includes an overview of traditional financial analysis metrics used in land acquisition, timber management, and risk management, as well as topics related to supply and demand for forest products, international timberland investment, and emerging trends in forestland investing. The first eight weeks of the course are in lecture format, and the remainder of the course is a case study/project that gives students an opportunity to apply their knowledge in the analysis of an actual “deal.” 3 Course cr

ENV 688b, Forest Management and Operations

This course provides students with an opportunity to understand many aspects of forest management, especially as it relates to multiple-use forestry. Course content includes understanding and critique of forest inventory, and students are introduced to growth and yield concepts. Forest planning and optimization for objectives such as forest products and carbon are covered. Stewardship of forestland is discussed, as are legal aspects to land ownership and forest conservation. Included are sections focused on forest operations. Students gain experience in the diverse elements and aspects of forest harvesting. The course is taught from the perspective of what a forester should know about harvesting, which includes logging safety, timber harvesting

operations and sale administration, legal dimensions of harvesting, planning and maintaining forest access systems, timber procurement and appraisal, logging costs and analysis, and environmental and social influences. Field experiences complement lecture material. 3 Course cr

ENV 692a, Science and Practice of Temperate Agroforestry

This course explores the science and practices of temperate agroforestry, covering current knowledge of agroforestry science and shedding light on the myths and assumptions that have yet to be tested regarding the integration of trees in agricultural systems. The course begins with an overview of modern agriculture to help us better understand why agroforestry systems have potential to improve the sustainability of farming systems. We also cover the social science regarding agroforestry and why it has not been widely adopted. Silvopasture and forest farming systems are the primary focus, but windbreaks, alley cropping, and riparian forest buffers are also covered. The field of agroforestry has struggled with the promotion of hypothetical practices; this course introduces students to real-world production agroforestry systems and helps them better contribute to financially viable and environmentally sound agricultural operations. 3 Course cr

ENV 704a, Workshop on Remote Sensing and Photogrammetry with Drones

A workshop that explores the current state and future outlook of remote sensing with unmanned aerial vehicles (UAVs or drones) for environmental monitoring. UAV-based remote sensing is a rapidly developing field in environmental science and technology. Versatile and inexpensive, it has the potential to offer solutions in a wide range of applications, such as forestry inventory, precision agriculture, flood hazard assessment, pollution monitoring, and land surveys. The class meets once a week for three hours. The workshop is divided into three parts: (1) reviewing the state of the technology on UAV types, sensor configurations, and data acquisition methods; (2) exploring GIS and remote-sensing software tools for analyzing super-high-resolution spectral data acquired by fixed-wing drones; (3) cross-validating drone products against Lidar data and satellite imagery. Students may also have the opportunity to participate in drone flight missions. Data analysis, presentation, literature critique, field trips. Prerequisite: ENV 726 or equivalent experience. 3 Course cr

ENV 708b / ENAS 640b, Aquatic Chemistry Jordan Peccia

A detailed examination of the principles governing chemical reactions in water. Emphasis is on developing the ability to predict the aqueous chemistry of natural and perturbed systems based on a knowledge of their biogeochemical setting. Focus is on inorganic chemistry, and topics include elementary thermodynamics, acid-base equilibria, alkalinity, speciation, solubility, mineral stability, redox chemistry, and surface complexation reactions. Illustrative examples are taken from the aquatic chemistry of estuaries, lakes, rivers, wetlands, soils, aquifers, and the atmosphere. A standard software package used to predict chemical equilibria may also be presented. 3 Course cr

ENV 709b, Lectures, Discussions, and Applications of Soil Science

Topics cover the structure and functioning of soils, and how this relates to soil fertility, carbon accounting, climate feedbacks, and ecosystem function in a changing environment. 3 Course cr

ENV 712a, Water Management

An exploration of water management at scales ranging from local to global. The course looks at multiple dimensions of the water crisis, including both human and ecosystem impacts; quantity and quality problems; and infrastructural and institutional issues. Theory is illustrated through a variety of case studies. Topics covered include global water resources; flooding; water scarcity; residential, agricultural, and industrial water use; water and health; water justice; impacts of climate change and land-use change; stormwater management; dams and other technologies for water management; human impacts on aquatic ecosystems; water and energy; water economics; water rights; water conflict and cooperation. 3 Course cr

ENV 713a, Coastal Ecosystems

An examination of the natural processes controlling coastal ecosystems, the anthropogenic threats to the health of these systems, and the potential for restoration. Coverage of estuaries, rocky shores, seagrass meadows, coral reefs, and mangrove swamps, with a special emphasis on tidal marshes. The course covers a wide range of physical, chemical, and ecological processes. Anthropogenic impacts covered range from local to global and include nutrient enrichment, hypoxia, sea-level rise, invasive species, over-fishing, chemical pollution, marsh drowning, and wetland filling. 3 Course cr

ENV 723a, Wetlands Ecology, Conservation, and Management

Wetlands are ubiquitous. Collectively they cover 370,000 square miles in the United States and globally encompass more than five million square miles. Most points on a map are less than one kilometer from the nearest wetland. Yet wetlands are nearly invisible to most people. In this course we explore wetlands in all of their dimensions, including the critical services they provide to other systems, the rich biodiversity they harbor, and their impact on global climate. Additionally, wetlands are linchpin environments for scientific policy and regulation. The overarching aim of the course is to connect what we know about wetlands from a scientific perspective to the ways in which wetlands matter for people. 3 Course cr

ENV 726b, Observing Earth from Space

A practical introduction to satellite image analysis of Earth's surface. Topics include the spectrum of electromagnetic radiation, satellite-borne radiometers, data transmission and storage, computer image analysis, the merging of satellite imagery with GIS and applications to weather and climate, oceanography, surficial geology, ecology and epidemiology, forestry, agriculture, archaeology, and watershed management. 3 Course cr

ENV 728a, Introduction to Statistics and Data Analysis in the Environmental Sciences

An introduction to statistics and data analysis with emphasis on practical applications in the environmental sciences. Includes graphical analysis, common probability distributions, hypothesis testing, confidence intervals, and linear regression. The second part of the course introduces the topics of multiple regression and ANOVA that are typically not covered in an introductory class such as AP statistics. There are weekly problem sets, 2 exams, and a final project. Assignments require use of Minitab, SPSS, or R. This course is a prerequisite for other statistics courses offered through YSE, and

it presents statistical methods used in many Yale courses in both the natural and social sciences. Three hours lecture. 3 Course cr

ENV 730b, Environmental Data Science in R: Understanding Methane Dynamics

Over a 100-year timeframe CH₄ is 28–34 times more effective at trapping heat in the atmosphere compared to an equivalent mass of CO₂ and accounts for ~42 % of warming since the pre-industrial period (IPCC, 2021). To date we have caused about 1.3°C of warming, and with this we have observed changes in the productivity of natural and managed ecosystems and an increase in extreme events that could lead to further increases in carbon (C) emissions (IPCC 2021). To prepare for an uncertain future, we are looking to understand how surface processes influence atmospheric composition of CH₄ by developing dynamic models. In this course we work with different data sources to design models that allow us to evaluate CH₄ dynamics in natural ecosystems. Enrollment is limited to fifteen. 3 Course cr

ENV 736a, Impacts of Climate Change on Freshwater Ecosystems

This course is a graduate-level ecology course on impacts and responses to global change, especially climate change, of freshwater ecosystems, including lakes, rivers, and wetlands. The course provides an overview of several major global change threats, such as pollution, emerging diseases, hydrologic alteration, species introductions, urbanization, and land-use change, which gives context to the relative importance of climate change as a global-change driver in freshwater ecosystems. The course then covers changes in the hydrologic cycle, temperature, and extreme events attributed to climate change and their impacts in different settings where freshwater ecosystems occur. The course also covers the ecosystem services provided by freshwater ecosystems, how they are threatened by global change, and strategies for mitigating and adapting to these threats. 3 Course cr

ENV 738a, Wildlife Movement Ecology

On a crowded planet, wildlife must navigate multiple forces to guide their movement. Through a flipped and interactive classroom, students evaluate and model drivers of animal movement across different spatial and temporal scales as well as draw connections to human societies and landscape histories. 1) prerequisites will be required (General Ecology, Statistic course with R programming), 2) access to GIS lab needed 3 Course cr

ENV 742b, Fundamentals of Working with People

Environmental scientists and environmental managers are working to transform environmental outcomes by changing institutional and human behavior. Research indicates time and time again that teams are important for tackling these important challenges. From developing research projects to building a business or NGO, teams can lead to better, more efficient output because they incorporate various perspectives and benefit from a wider range of skill sets. But developing and deploying effective teams is an art and a science, full of its own challenges. It requires a deep understanding of self, including one's own strengths, blind spots, priorities, and needs. It also requires reflection, empathy, communication, and collaboration. This course aims to introduce students – particularly scientists and environmental managers – to the theory and practice of team management. Through a series of lectures, simulations, reflections, discussions, and exercises, students will increase their ability to: (1) Understand themselves and other individuals; (2) Form and lead diverse teams; (3) Influence the

actions of the organizations within which they are working; (4) Collaborate with others affecting the resources about which they care. 3 Course cr

ENV 744b, Conservation Science and Landscape Planning

This advanced course applies ecological principles to understand and manage biodiversity and attendant ecosystem functioning and services in the anthropocene. The course addresses the ethical and functional basis for conservation and fosters thinking about why and how humans ought to share the planet with nonhuman life. It covers scientific principles such as evolution, life-history and the viability of species, species endangerment and extinction risk, the kinds of biodiversity, the spatial distribution of biodiversity, the functional roles of species in ecosystems, vulnerability and risk assessments, and valuing biodiversity and ecosystem services. The course applies these principles to the exploration of such topics as biodiversity's role in the functioning and sustainability of ecological systems, restoration of environmental damages, conserving biodiversity in dynamic landscapes, adapting landscapes to climate change, balancing conservation with urban development and agriculture, and renewable energy siting. It provides students with the quantitative skills to conduct population viability analyses, geospatial analyses of the distribution of biodiversity across landscapes, vulnerability analyses, and decision analysis to balance trade-offs among multiple objectives of human land development and biodiversity conservation. Prerequisites: ENV 602 or equivalent course in population or community ecology, F&ES 755 or equivalent course in GIS, and ENV 728 or equivalent course in statistical analysis of biological data. A course in economics or applied math for environmental studies is strongly encouraged. 4 Course cr

ENV 745a, Global Human-Wildlife Interactions Nyeema Harris

Wildlife and humans have increasingly complex interactions, balancing a myriad of potentially positive and negative outcomes. In a highly interactive format, students evaluate the importance of human-wildlife interactions across diverse ecosystems, exacerbators that influence outcomes, and management interventions that promote coexistence. 3 Course cr

ENV 750a, Writing the World

This is a practical writing course meant to develop the student's skills as a writer. But its real subject is perception and the writer's authority – the relationship between what you notice in the world around you and what, culturally speaking, you are allowed to notice. What you write during the term is driven entirely by your own interest and attention. How you write is the question at hand. We explore the overlapping habitats of language – present and past – and the natural environment. And, to a lesser extent, we explore the character of persuasion in environmental themes. Every member of the class writes every week, and we all read what everyone writes every week. It makes no difference whether you are a would-be journalist, scientist, environmental advocate, or policy maker. The goal is to rework your writing and sharpen your perceptions, both sensory and intellectual. Enrollment limited to fifteen. 3 Course cr

ENV 751b, Sampling Methodology and Practice

This course is intended to provide a fundamental understanding of the principles of statistical sampling, alternative estimators of population parameters, and the design basis for inference in survey sampling. Natural, ecological, and environmental resource applications of sampling are used to exemplify numerous sampling strategies. Sample designs to be studied include simple random; systematic; unequal probability, with and

without replacement; stratified sampling; sampling with fixed-radius plots; horizontal point sampling; and line intercept. The Horvitz-Thompson, ratio, regression, and other estimators are introduced and used repeatedly throughout the course. Three hours lecture. Weekly and biweekly problem sets and final project. 3 Course cr

ENV 753a, Regression Modeling of Ecological and Environmental Data

This course in applied statistics assists scientific researchers in the analysis and interpretation of observational and field data. After considering the notion of a random variable, the statistical properties of linear transformations and linear combinations of random data are established. This serves as a foundation for the major topics of the course, which explore the estimation and fitting of linear and nonlinear regression models to observed data. Three hours lecture. Statistical computing with R, weekly problem exercises. Prerequisite: a course in introductory statistics. 3 Course cr

ENV 755b, Modeling Geographic Space

An introduction to the conventions and capabilities of image-based (raster) geographic information systems (GIS) for the analysis and synthesis of spatial patterns and processes. In contrast to ENV 756, the course is oriented more toward the qualities of geographic space itself (e.g., proximity, density, or interspersion) than the discrete objects that may occupy such space (e.g., water bodies, land parcels, or structures). Three hours lecture, problem sets. No previous experience is required. 3 Course cr

ENV 756a, Modeling Geographic Objects

This course offers a broad and practical introduction to the nature and use of drawing-based (vector) geographic information systems (GIS) for the preparation, interpretation, and presentation of digital cartographic data. In contrast to ENV 755, the course is oriented more toward discrete objects in geographical space (e.g., water bodies, land parcels, or structures) than the qualities of that space itself (e.g., proximity, density, or interspersion). Three hours lecture, problem sets. No previous experience is required. 3 Course cr

ENV 757a or b, Data Exploration and Analysis Ethan Meyers

Survey of statistical methods: plots, transformations, regression, analysis of variance, clustering, principal components, contingency tables, and time series analysis. The R computing language and web data sources are used. 3 Course cr

ENV 758b, Multivariate Data Analysis in the Environmental Sciences

An introduction to the analysis of multivariate data. Topics include multivariate analysis of variance (MANOVA), principal components analysis, cluster analysis, canonical correlation, ordination methods including multidimensional scaling, discriminant analysis, factor analysis, and structural equations modeling. Emphasis is placed on practical application of multivariate techniques to a variety of examples in the natural and social sciences. Students are required to select a dataset early in the term for use throughout the term. There are regular assignments and a final project. Extensive use of computers is required—students may use any combination of R, SAS, SPSS, MINITAB, and STATA. Three hours lecture/discussion. Prerequisites: a prior course in introductory statistics and a good understanding of multiple linear regression.

3 Course cr

ENV 759a, Power, Knowledge, and the Environment: Social Science Theory and Method

Introductory graduate course on the social science of contemporary environmental and natural resource challenges, paying special attention to issues involving power and knowledge. Section I, overview of the course. Section II, disasters and environmental perturbation: pandemics, and the social dimensions of disaster. Section III, power and politics: river restoration in Nepal; the conceptual boundaries of resource systems, and the political ecology of water in Mumbai. Section IV, methods: the dynamics of working within development projects; and a multi-sited study of irrigation in Egypt. Section V, local communities: representing the poor, development discourse, and indigenous peoples and knowledge. The goal of the course is to develop analytic distance from current conservation and development debates and discourse. This is a core course for M.E.M. students in YSE, and a core course in the combined YSE/Anthropology degree program. Enrollment is capped. 3 Course cr

ENV 760b, Conservation in Practice: An International Perspective

This seminar focuses on the practice of wildlife and wildlands conservation, examining key topics from the dual perspectives of academic literature and actual field experiences; bringing together interdisciplinary thinking; and drawing on examples from Africa, Asia, Latin America, and the United States. The thematic outline of the seminar is organized around three fundamental questions in nature conservation: What are we trying to save – and why? How is this being done – and how has it changed over time? What lessons are we learning – and what overarching issues remain problematic? Specific topics include how different players define and value wildness; selection and prioritization of conservation targets; comparisons of various species and landscape conservation approaches; and governance and decision-making in conservation, including ties between conservation and development and community-based conservation. During the term, students work in small teams to assess one of several current case studies – integrating biological, social, economic, and governance considerations – to propose an effective path forward for conservation. Participation and leadership are key, as the seminar is discussion-based and approximately half the sessions are student-led. Evaluation is based on participation, presentations, and a final paper. 3 Course cr

ENV 761a, Negotiating International Agreements: The Case of Climate Change

Susan Biniaz

This class is a practical introduction to the negotiation of international agreements, with a focus on climate change. Through the climate lens, students explore cross-cutting features of international agreements, the process of international negotiations, the development of national positions, advocacy of national positions internationally, and the many ways in which differences among negotiating countries are resolved. The seminar also examines the history and substance of the climate change regime, including, *inter alia*, the 1992 UN Framework Convention on Climate Change, the 1997 Kyoto Protocol, the 2009 Copenhagen Accord, the 2015 Paris Agreement, and recent developments. There are two mock negotiations. 3 Course cr

ENV 762a, Applied Math for Environmental Studies

The language of mathematics is an important leg in the stool of interdisciplinary research and analysis, and many graduate courses at YSE involve mathematical content. However, many graduate students have not taken a math course in years, and their

math skills are rusty. Furthermore, many graduate-level mathematical concepts may be entirely new. Experience suggests that many students either opt out of taking courses they are truly interested in or muddle through, struggle with the math, and miss important concepts. AMES is meant to help students refresh or acquire new math skills and succeed in content and “toolbox” graduate-level courses. AMES provides a structured opportunity to learn a range of mathematical concepts used in environmental studies. The course assumes that, at a minimum, students took college algebra and perhaps a semester of calculus (but might not really remember it). Concepts are presented heuristically in a “how to” and “why” approach with examples from environmental studies. The goal is for students to be conversant and have intuition about (i.e., to demystify) why logs, exponents, derivatives, integrals, linear algebra, probability, optimization, stability analysis, and differential equations show up throughout environmental studies. Students learn (review) how to use these techniques. Also covered is a bit of history of math and an introduction to computer programming. 3 Course cr

ENV 767b, Tools for Conservation Project Design and Management

As wildlife and wildland conservation programs have multiplied and grown in size, conservation organizations have sought methods to improve strategic project planning, assessment of progress, cross-project comparison, learning of lessons, and transparency for donors. To address these challenges, major nonprofit organizations have collaboratively designed a set of decision-support tools for planning field projects and programs and for monitoring their progress, summarized in the “Open Standards for the Practice of Conservation” (<http://cmp-openstandards.org>). Use of these tools has allowed organizations to more clearly articulate strategies, define priority actions, critically assess success, manage adaptively, and derive lessons—all of which help to improve effectiveness and respond to donor interests. Students in this course explore a mutually reinforcing suite of these project tools: their underlying principles are introduced, students practice the techniques, and current case studies from field conservation are examined to explore tool utility. Students synthesize use of these design tools in a final project proposal focused on a single case study of their choice. The suite of decision-support tools covered includes situation (logic) models for project design, stakeholder assessments, threats and opportunities analysis, conservation target identification, and monitoring frameworks. Students gain experience in design of projects and their monitoring, as well as familiarity with budgeting. Enrollment limited to twelve. 3 Course cr

ENV 771b, Fundamentals of Green Engineering and Green Chemistry Staff

There is a broad desire to ensure that consumer products, manufacturing processes, and material and energy systems are compatible with public health and environmental sustainability. This course provides fundamental knowledge of the frameworks, methods, tools, and techniques of designing for sustainability. Through an understanding of conceptual contracts and application to real-world case studies, students learn the impacts of design on health (including toxic and ecotoxic effects) and the ways to ensure that new products, processes, and systems can be constructed through the principles of green engineering and green chemistry. This course provides the foundation for more advanced investigations in sustainable design; there are no prerequisites. 3 Course cr

ENV 772a, Indigenous Self-Government in the U.S. Constitutional Order

Native people in the United States have been building institutions of self-governance in the face of enormous colonial pressure for centuries. This course considers the unique legal positions of Native American, Alaska Native, and Native Hawaiʻian citizens in the United States as well as the residents of the U.S. territories. The course introduces students to contemporary legal debates and social movements in the U.S. territories, Indian Country, and Hawaiʻi and explore how overseas expansionism and relations with Indigenous peoples have shaped U.S. constitutional theory and doctrine. This course demonstrates how the constitutional condition of the U.S. territories, Tribal nations, Alaska villages, and Hawaiʻi occupy more than niche legal issues but require us to think more broadly about borders, race, indigeneity, and citizenship in the U.S. We focus on the institutions of self-governance both to illustrate the continued resistance to colonial rule and to highlight the unique constitutional questions U.S. colonial actions have posed from the very beginning. 2 Course cr

ENV 773a, Air Pollution Control Drew Gentner

An overview of air quality problems worldwide with a focus on emissions, chemistry, transport, and other processes that govern dynamic behavior in the atmosphere. Quantitative assessment of the determining factors of air pollution (e.g., transportation and other combustion-related sources, chemical transformations), climate change, photochemical “smog,” pollutant measurement techniques, and air quality management strategies. 3 Course cr

ENV 775b, Federal Indian Law

This course covers the basics of federal Indian law. It does not address the substantive content of tribal law. Tribal law is a specialized study arising from the exercise of the legal authority that the tribes retain. This course is designed to lay the groundwork for a deep understanding of what kinds of sovereignty Indian nations may exercise within the framework of our legal system. Normally, courses of this type begin with a historical exploration of the foundations of the relations between Indian and non-Indian peoples. Instead, we begin with questions that are current and sketch out, roughly, where we are now. Typically, we start with cases pending before or recently decided by the Supreme Court. We use the Marshall Trilogy to build from the present back to the origins to see how the doctrines reflect the positive aspects of the legal expression of contact between Europe and the native nations of the Western hemisphere as well as the more malign aspects. We do not neglect the history—it proves critical for understanding the ways in which federal Indian law is *sui generis* in domestic jurisprudence—but we see how that history is always haunted by the specter of colonialism, extra-legality, and finally international legal norms. Self-scheduled examination or paper option. Students are required to attend the first day of class. 3 Course cr

ENV 781b, Applied Spatial Statistics

An introduction to spatial statistical techniques with computer applications. Topics include modeling spatially correlated data, quantifying spatial association and autocorrelation, interpolation methods, variograms, kriging, and spatial point patterns. Examples are drawn from ecology, sociology, public health, and subjects proposed by students. Four to five lab/homework assignments and a final project. The class makes extensive use of the R programming language. Prerequisite: introductory course

in statistics is mandatory. An intermediate-level course in statistical modeling and handling spatial data is strongly preferred, but not required. 3 Course cr

ENV 782b, Globalization Space

Infrastructure space as a primary medium of change in global polity. Networks of trade, energy, communication, transportation, spatial products, finance, management, and labor, as well as new strains of political opportunity that reside within their spatial disposition. Case studies include free zones and automated ports around the world, satellite urbanism in South Asia, high-speed rail in Japan and the Middle East, agripoles in southern Spain, fiber optic submarine cable in East Africa, spatial products of tourism in North Korea, and management platforms of the International Organization for Standardization. 3 Course cr

ENV 789b, Energy and Development

This course delves into the relationship between energy use and economic development, at a household, national, and global scale. The course provides both a quantitative and qualitative understanding of poverty, energy demand, and the relationship between the two. Students grapple with different income and multidimensional poverty and standard of living indicators, and with GDP and its limitations as a human development measure. They learn about energy poverty in various parts of the world and about energy consumption patterns with rising income. Students study actual household survey and national statistics data on consumption and energy use, and are exposed to cutting-edge research on standard of living measures and their embodied energy needs. The course covers basic models for household energy transitions and appliance diffusion. This is a seminar course, wherein students are expected to present readings in class. The course involves one term project and presentation, which may be quantitative or qualitative. Prerequisites: basic math, Excel, and microeconomics. Those selecting technical projects should have basic R or other data manipulation skills. 3 Course cr

ENV 805a or b, Seminar on Environmental and Natural Resource Economics

This seminar is based on outside speakers and internal student/faculty presentations oriented toward original research in the field of environmental and natural resource economics and policy. Presentations are aimed at the doctoral level, but interested master's students may enroll with permission of the instructors. 1½ Course cr

ENV 807b, Business and Environment: Management and Strategy

This course focuses on understanding the legal, business, and policy logic for making the environment and sustainability a core element of corporate management and strategy. Participants are asked to analyze how and when environmental, energy, and other sustainability issues can be translated into business model innovation and competitive advantage. The course combines lectures, case studies, and class discussions on management theory and tools, legal and regulatory frameworks shaping the business-environment interface, and evolving requirements for business success. Scheduled examination. Also MGT 688 and LAW 20490. 3 Course cr

ENV 811b, Metrics, Tools, and Indicators in Corporate Responsibility

This is an applied course on the standards, guidelines, and tools for designing, implementing, auditing, and communicating a corporate environmental and social responsibility (CR) program. The purpose of the course is to introduce students to the knowledge and tools needed to enter a career in CR and sustainability. The course

is designed for students who currently hold or will hold positions in organizations where they are or will be responsible for creating, implementing, measuring, and/or managing internal CR and sustainability programs, or responsible for assisting a corporation in this area. 3 Course cr

ENV 814a, Energy Systems Analysis

This three-credit lecture course offers an overview of all aspects of energy systems and their interaction with society and the environment. The course provides students with a comprehensive theoretical and empirical knowledge base about energy systems in the world. This course describes and explains the basics of energy and the laws that govern it, the different components of an energy system (supply technologies, delivery systems, and demand), the institutions that govern the energy sectors, the role of energy in development, its impact on climate change, and an understanding of the key challenges of an energy transition towards a sustainable future. The course has a specific emphasis on electricity systems, how they are operated and governed, and how they have to be transformed to tackle climate change. Students receive a unique exposure to energy issues in the Global South. This course provides students with basic analytical tools and knowledge to formulate and solve energy-related decisions at an individual, national, and global scale and to understand and critique ongoing policy dialogues on energy and climate. 3 Course cr

ENV 816a, Electric Utilities: An Industry in Transition

The U.S. electric utility industry is a \$400 billion business with capital expenditures on the order of \$100 billion per year to replace aging infrastructure, implement new technologies, and meet new regulatory requirements. A reliable electricity infrastructure is essential for the U.S. economy and the health and safety of its citizens. The electric industry also has a significant impact on the environment. In the United States, electric power generation is responsible for about 40 percent of human-caused emissions of carbon dioxide, the primary greenhouse gas. Electric utilities in the United States are at a crossroads. Technological innovations, improving economics, and regulatory incentives provide a transformational opportunity to implement demand-side resources and distributed energy technologies that will both lower emissions and improve service to customers. Such significant changes could, however, disrupt existing utility business models and therefore may not be fully supported by incumbent utilities. This course focuses on the issues, challenges, risks, and trade-offs associated with moving the U.S. utility industry toward a cleaner, more sustainable energy future. We explore how utilities are regulated and how economic factors and regulatory policies influence outcomes and opportunities to align customer, environmental, and utility shareholder interests to craft win-win-win solutions. 3 Course cr

ENV 817a, Urban, Suburban, and Regional Planning Practice

Our cities, towns, and regions represent the cumulative impact of planning policies implemented at multiple scales over the past century. This course explores the dynamic trends facing the United States and its communities and the evolution in planning practice that is occurring at the local and regional scale to address them. It looks at both suburban and urban approaches. The recent pandemic, multiple recessions, climate change, and a lack of social cohesion call for a new triple bottom-line approach to decision-making for our future. Existing policies and governance structures are not always well suited for the new challenges and opportunities that we face. Local, state,

and the national government are, to varying degrees, crafting new solutions to the challenges of urban and suburban America. 3 Course cr

ENV 821a, Environmental Policy Making: From Local to Global

This course focuses on policy making around environmental issues. We explore and analyze institutions at all levels of government, from community management of forests to global management of greenhouse gas emissions. We also explore a variety of environmental case studies. Students learn to examine issues and institutions through the lens of the actors involved, their incentives, and the information they have. The course includes a simulation taking place over multiple weeks at which students negotiate an international environmental agreement. 3 Course cr

ENV 823a, Energy Law and Policy

This course explores the troubled intersection between energy, environmental, economic and national security policies. We consider a diverse range of regulatory approaches to minimize adverse environmental effects of various forms of energy development. These include emerging issues regarding climate change and promoting renewable energy; hydraulic fracturing (“fracking”); regulation of off-shore drilling and lessons from the Deepwater Horizon oil spill; liability for natural resources and other damages from oil spills under the Oil Pollution Act of 1990 (OPA90); the Fukushima, Three Mile Island and Chernobyl nuclear accidents; and the role of nuclear energy, if any, going forward. We also cover the basics of utility rate setting and the role of the Federal Energy Regulatory Agency (FERC). We conclude by considering the geopolitical implications of various energy policies. Supervised Analytic Writing or Substantial Paper credit available for three credits, or a shorter seminar paper or self-scheduled essay exam for two credits. Self-scheduled examination or paper option. 2 Course cr

ENV 824b, Environmental Law and Policy

This course provides an introduction to the legal requirements and policy underpinnings of the basic U.S. environmental laws, including the Clean Air Act, Clean Water Act, and various statutes governing waste, food safety, and toxic substances. Students examine and evaluate current approaches to pollution control and resource management as well as the “next generation” of regulatory strategies, including economic incentives, voluntary emissions reductions, and information disclosure requirements. This course investigates mechanisms for addressing environmental issues at the local, regional, and global levels, and explores the intersection between environmental and energy law and policy. Students gain an understanding of overarching legal and policy concepts, such as federalism, administrative procedure, separation of powers, environmental justice, judicial review, and statutory interpretation. 3 Course cr

ENV 834b, Environmental Economics and Policy

This is a course in environmental and natural resource economics and policy. It covers both general methodological principles and specific applications. Rather than serving as a standard course in environmental and natural resource economics, the material is tailored specifically to master’s students pursuing professional degrees in environmental management. The course therefore has a focus on environmental problem solving in the real world. Topics covered include, but are not limited to, evaluation of environmental policies (e.g., standards, taxes, cap-and-trade); cost-benefit analysis and its critiques; nonmarket valuation (ecosystem services, revealed

and stated preferences); discounting and macroeconomic perspectives on climate change; management of nonrenewable resources (oil, minerals, etc.); management of renewable resources (forests, fisheries, etc.); land and biodiversity conservation; the relationship between development, trade, and the environment; strategic incentives for international environmental agreements; and environmental behavioral economics. Prerequisite: ENV 512 or equivalent. 3 Course cr

ENV 835a and ENV 835Eb, Seminar on Land Use Planning

Land use control exercised by state and local governments determines where development occurs on the American landscape, the preservation of natural resources, the emission of greenhouse gases, the conservation of energy, and the shape and livability of cities and towns. The exercise of legal authority to plan and regulate the development and conservation of privately owned land plays a key role in meeting the needs of the nation's growing population for equitable housing, energy, and nonresidential development as well as ensuring that critical environmental functions are protected from the adverse impacts of land development. This course explores the multifaceted discipline of land use and urban planning and their associated ecological implications. Numerous land use strategies are discussed, including identifying and defining climate change mitigation and adaptation strategies, including affordable housing, community revitalization, energy development and siting, equitable community engagement, transit-oriented development, building and neighborhood energy conservation, distressed building remediation, jobs and housing balance, coastal resiliency, and biological carbon sequestration. The course also explores how recent events impact these planning issues. The focus is on exposing students to the basics of land use and urban planning, especially in the United States but also internationally, and serving as an introduction for a YSE curricular concentration in land use. Guest speakers are professionals involved in sustainable development, land conservation, smart growth, renewable energy, and climate change management. 1½ Course cr per term

ENV 836a / ANTH 541a / HIST 965a / PLSC 779a / SOCY 617a, Agrarian Societies: Culture, Society, History, and Development Jonathan Wyrzten and Marcela Echeverri Munoz

An interdisciplinary examination of agrarian societies, contemporary and historical, Western and non-Western. Major analytical perspectives from anthropology, economics, history, political science, and environmental studies are used to develop a meaning-centered and historically grounded account of the transformations of rural society. Team-taught. 3 Course cr

ENV 838b, Life-Cycle Assessment

The increasing concerns about environmental pollution and resource challenges drive the development of sustainable solutions that can meet societal needs without compromising the environment or depleting the resources for future generations. Given many technological, behavioral, and policy options, it is challenging to determine which option best serves humanity and the environment. Life-cycle assessment (LCA) offers a systems approach to support these decisions. This course is an overview of life-cycle thinking, the fundamental theory of LCA framework, and practical applications in supporting real-world decision-making. Students learn state-of-the-art LCA tools, industrial case studies, and advanced LCA methodologies. The course has an emphasis on systems thinking. It is appropriate for all M.E.M. specializations. 3 Course cr

ENV 839a, Power in Conservation

This course examines the anthropology of power, particularly power in conservation interventions in the global South. It is intended to give students a toolbox of ideas about power in order to improve the effectiveness of conservation. Conservation thought and practice are power-laden: conservation thought is powerfully shaped by the history of ideas of nature and its relation to people, and conservation interventions govern and affect peoples and ecologies. This course argues that being able to think deeply, particularly about power, improves conservation policy making and practice. Political ecology is by far the best known and published approach to thinking about power in conservation; this course emphasizes the relatively neglected but robust anthropology of conservation literature outside political ecology, especially literature rooted in Foucault. It is intended to make four of Foucault's concepts of power accessible, concepts that are the most used in the anthropology of conservation: the power of discourses, discipline and governmentality, subject formation, and neoliberal governmentality. The important ethnographic literature that these concepts have stimulated is also examined. Together, theory and ethnography can underpin our emerging understanding of a new, Anthropocene-shaped world. This course will be of interest to students and scholars of conservation, environmental anthropology, and political ecology, as well as conservation practitioners and policy makers. It is a required course for students in the combined YSE/Anthropology doctoral degree program. It is highly recommended for M.E.Sc. students who need an in-depth course on social science theory. M.E.M. students interested in conservation practice and policy making are also encouraged to consider this course, which makes an effort to bridge the gap between the best academic literature and practice. Open to advanced undergraduates. No prerequisites. Three-hour discussion-centered seminar. 3 Course cr

ENV 840a / GLBL 7170, Climate Change Policy and Perspectives

This course examines the scientific, economic, legal, political, institutional, and historic underpinnings of climate change and the related policy challenge of developing the energy system needed to support a prosperous and sustainable modern society. Particular attention is given to analyzing the existing framework of treaties, law, regulations, and policy—and the incentives they have created—which have done little over the past several decades to change the world's trajectory with regard to the build-up of greenhouse gas emissions in the atmosphere. What would a twenty-first-century policy framework that is designed to deliver a sustainable energy future and a successful response to climate change look like? How would such a framework address issues of equity? How might incentives be structured to engage the business community and deliver the innovation needed in many domains? While designed as a lecture course, class sessions are highly interactive. Self-scheduled examination. 3 Course cr

ENV 850a, International Organizations and Conferences

This course focuses on the historic, present, and future roles of international environmental conferences. Through guest speakers, assigned readings, and discussions, students explore conferences including IUCN's World Conservation Congress, the UN's Convention on Biological Diversity, UNFCCC's climate change conference, the UN Environment Programme (UNEP), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Students, along with visiting alumni and guest speakers, discuss the roles and impacts of the various conferences in international environmental decision-making and the

future of international conferences in a post-COVID world. The course also assesses the potential for improved equity, justice, and inclusion in international conferences, organizations, and their secretariats. Students attending fall conferences (in person or virtually) develop work plans to be completed during the conference under the guidance of their host delegations and the instructor. 3 Course cr

ENV 857a, Financing Climate Change Adaptation in Developing Countries

This course is intended for students who are interested in applied work in development organizations or public institutions focused on nature, climate, energy and waste that are involved in catalyzing finance for climate change adaptation, particularly in the global south. The course has no specific prerequisites but students will find that courses in development economics, natural resources management, finance and law are helpful. The class entails in-class discussions where students are expected to critically analyze course content, discuss and debate, as well as present material. Enrollment is limited to fifteen. 3 Course cr

ENV 860a, Developing Environmental Policies and Winning Campaigns

This course is about what makes an environmental policy idea successful—one that can go from concept to law, get implemented well, and achieve its intended goals. In addition, this class covers how to develop and run effective campaigns to win environmental policies. Good policy does not just happen. It takes creative thinking, learning from experience and history, and an ability to “look around corners” to help ensure that your idea can actually be well implemented, won’t have unintended consequences, and will actually solve the problem you set out to alleviate. And, once you have a honed policy idea, there is no magic wand that will turn it into the law of the land. Whether in city hall, the state legislature, the U.S. Congress, or a corporate boardroom, many stakeholders will have a hand in determining whether an idea turns into a law. 3 Course cr

ENV 878a, Climate and Society: Past to Present

Seminar on the major traditions of thought and debate regarding climate, climate change, and society, drawing largely on the social sciences and humanities. Section I, overview of the course. Section II, disaster: the social origins of disastrous events; and the attribution of societal “collapse” to extreme climatic events. Section III, causality: the revelatory character of climatic perturbation; politics and the history of efforts to control weather/climate; and nineteenth–twentieth-century theories of environmental determinism. Section IV, history and culture: the ancient tradition of explaining differences among people in terms of differences in climate; and cross-cultural differences in views of climate. Section V, knowledge: the study of folk knowledge of climate; and local views of climatic perturbation and change. Section VI, politics: knowledge, humor, and symbolism in North–South climate debates. The goal of the course is to examine the embedded historical, cultural, and political drivers of current climate change debates and discourses. This course can be applied towards Yale College distributional requirements in Social Science and Writing. The course is open to both graduate and undergraduate students. Enrollment capped. 3 Course cr

ENV 893b, Principles of Risk Assessment

This course introduces students to the nomenclature, concepts, and basic skills of quantitative risk assessment (QRA). The goal is to provide an understanding necessary to read and critically evaluate and perform QRA. Emphasis is on the intellectual and conceptual basis of risk assessment, particularly its dependence on

toxicology, epidemiology, and exposure assessment. Quantitation of exposure and dose response provides practical skills and theoretical background, although not detailed in mathematical and model derivations. Specific cases consider the use of risk assessment for setting occupational exposure limits, establishing community exposure limits, and quantifying the hazards of environmental exposures to chemicals in air, drinking water, consumer products, and the built environment. 3 Course cr

ENV 894a, Green Building: Issues and Perspectives

Buildings have an outsized impact on human and environmental health. The building sector is the largest contributor to greenhouse gas emissions globally, responsible for almost 40 percent of total emissions. Construction and demolition activities generated 600 million tons of waste in 2018 in the United States, more than twice what was generated in municipal solid waste. Buildings represent an enormous opportunity to reduce environmental impact, and the movement that represents this approach is commonly called green building. But green building is broad and deep—involving process, products, and policy—and crisscrosses many disciplines. This course examines green building from a variety of perspectives, placing it in a technical, social, financial, and historical context. The task of reducing the environmental impact of our buildings requires cross-disciplinary integration and touches nearly every aspect of our lives as occupants and managers of interior spaces. Individual topics in green building—such as building science, indoor environmental quality, innovative finance, and public- and private-sector programs—are covered through research, class discussion, guest lectures, field trips, and group projects. Great emphasis is placed on the practical challenges and opportunities that green building presents to building and non-building professionals working together to design, specify, construct, operate, renovate, and finance our nation's buildings. Enrollment limited to fifteen. 3 Course cr

ENV 896b, Public Health Toxicology

This course is designed to serve as a foundation for understanding public health toxicology in the twenty-first century. Although it includes the basic principles of toxicology such as dose response and mechanisms of toxicity and cellular defense, this course introduces new concepts of toxicology such as lifetime exposures, low-level exposure to mixtures, high-throughput screening and computational toxicology, and green chemistry in order to understand fundamental interactions between chemicals and biological systems and possible health outcomes. Through the use of case studies and up-to-date published research, the course provides insights into prevention of mortality and morbidity resulting from environmental exposure to toxic substances, the next-generation risk assessment and regulatory toxicology, and the causes underlying the variability in susceptibility of people to chemicals. 3 Course cr

ENV 897b, Environmental and Occupational Exposure Science Nicole Deziel

This course examines the fundamental and practical aspects of assessing exposures to environmental agents, broadly defined, in the residential, ambient, and workplace environments. The course provides the knowledge and skills to design and conduct exposure assessments, and has a particular focus on applications to environmental epidemiology and risk assessment. Indirect and direct methods of assessing exposures, such as questionnaires, environmental sampling, biological monitoring, and spatial modeling, are reviewed; and case studies and hands-on projects are presented.

3 Course cr

ENV 898a, Environment and Human Health Michelle Bell

This course provides an overview of the critical relationships between the environment and human health. The class explores the interaction between health and different parts of the environmental system including weather, air pollution, greenspace, environmental justice, and occupational health. Other topics include environmental ethics, exposure assessment, case studies of environmental health disasters, links between climate change and health, and integration of scientific evidence on environmental health. Students learn about current key topics in environmental health and how to critique and understand scientific studies on the environment and human health. The course incorporates lectures and discussion. 3 Course cr

ENV 900a, Doctoral Student Seminar and Responsible Conduct of Research

This course provides the foundation for doctoral study at the School of the Environment. Students learn what it means to do scholarly research as well as become adept with philosophy of science and research methodology and proposal writing, as a basis for exploring diverse approaches to formulating and addressing research questions. Students work with their advisers to put these concepts and principles into practice to develop the basis for their dissertation research (including building bibliography, identifying and crafting research questions, formulating research hypotheses, and drafting a research proposal). Students further learn about funding opportunities and procedures for submitting grants. The course also covers professional ethics and responsible conduct of research, including ethical approaches to inquiry and measurement, data acquisition and management, authorship and publication, peer review, conflicts of interest, mentoring, collaborative research, and animal and human subjects research. Finally, the course explores ethical ways to advocate for the application of scholarly knowledge in the interest of environmental problem solving. Weekly assigned readings support concepts and issues addressed in class. Students present their embryonic research ideas in class and use feedback from the group to further develop their ideas.

ENV 902a, Environmental Anthropology Colloquy

A biweekly seminar for Dove doctoral advisees and students in the combined YSE/Anthropology doctoral program. Presentation and discussion of grant proposals, dissertation prospectuses, and dissertation chapters; trial runs of conference presentations and job talks; discussion of comprehensive exams, grantsmanship, fieldwork, data analysis, writing and publishing, and the job search; and collaborative writing and publishing projects.

ENV 908a, Urban and Environmental Economics

A Ph.D. field course covering latest research topics in urban economics and in environmental and energy economics. Topics include the links between urban planning and city productivity and livability, infrastructure investments in electrification and water management, managing externalities, environmental regulation, and the effects of climate change in cities and in rural areas. Prerequisites: First-year Ph.D. economics courses in microeconomics, macroeconomics, and econometrics (or equivalent), or instructor permission. 3 Course cr

ENV 951b, Strategic Environmental Communication

Strategic communication is a powerful means of achieving an organization's mission, especially when informed by insights into human behavior and social systems. By the end of this course, students are able to develop communication strategies and apply

insights from the social and behavioral sciences to improve the effectiveness of their communication campaigns. Enrollment limited to twelve. 3 Course cr

ENV 953b, Sustainable Business Capstone Consulting Clinic

The intended outcome of this course is to provide you with a 'capstone' experience; consulting to an organization in its early formative years, confronting real-life challenges at the intersections of starting-up, business strategy, and environmental sustainability; all with regular contact with the Founder/Founding team of an entrepreneurial venture started by recent alumni or current student Founders. The course is designed for you to apply tools and insights gained in this and other courses to a defined project; creating deliverables that will be useful to the entrepreneurs leading their organization. It is designed to help prepare anyone who wishes to become a consultant after graduation; though it is also intended to be useful for those that intend to engage with consultants in their careers post-Yale and may be considering becoming an entrepreneur themselves. In short, there is hopefully something in it for many of you! If interested, please complete the online application form before 9am Wednesday January 12th. We will review applications and inform you of acceptance and project assignments by end of day on Friday January 14th. This course is cross-listed with Environment and will follow their academic calendar. Application: <https://docs.google.com/forms/d/e/1FAIpQLSf9toRWaY5v57f7YgbrNgAVKKOGPx8w7xjm3WzWuhkHSTCikA/viewform> 3 Course cr

ENV 954a, Management Plans for Protected Areas

A seminar that comprises the documentation of land use history and zoning, mapping and interpretation, and the collection and analysis of socioeconomic, biological, and physical information for the construction of management plans. Plans are constructed for private smallholders within the Quiet Corner Initiative partnership managed by the Yale School Forests. In the past, plans have been completed for the Nature Conservancy; Massachusetts Trustees of Reservations; town land trusts; city parks and woodlands of New Haven, New York, and Boston; and the Appalachian Mountain Club. Ten days fieldwork. Enrollment limited to twenty. Must also register for ENV 957, Field Skills in Land Stewardship. Prerequisite: ENV 659 or permission of the instructor. 3 Course cr

ENV 955a or b, Seminar in Research Analysis and Communication in Forest Ecology

A seminar for students in their second year working on research projects. Students start by working through the peer-review publication process. They identify the scope and scale of the appropriate journal for their work. They then work on their projects, which comprise data and projects in applied forest ecology. Discussions involve rationale and hypothesis testing for a project, data analysis techniques, and reporting and interpretation of results. It is expected that manuscripts developed in the course are worthy of publication and that oral presentations are of a caliber for subject-area conferences and meetings. Extensive training in writing and presenting work is provided. 1 credit option is available for incoming students only. Must be taken for 3 credits to count as a capstone course. Limited to twelve. Prerequisite: ENV 659 or permission of the instructor. 3 Course cr

ENV 956b, Strategies for Land Conservation

This is a professional seminar on private land conservation strategies and techniques, with particular emphasis on the legal, financial, and management tools used in the

United States. The seminar is built around presentations by guest speakers from land conservation organizations. Speakers are assigned topics across the land conservation spectrum, from identification of target sites, through the acquisition process, to ongoing stewardship of the land after the deal is done. The tools used to protect land are discussed, including the basics of real estate law, conservation finance, and project/organization management. Students are required to undertake a clinical project with a local land conservation organization. Enrollment limited to twenty-five; preference to second-year students if limit reached. 3 Course cr

ENV 957a, Field Skills in Land Stewardship

An intensive technical and field ecology seminar that is taught in combination with ENV 954. In this course students learn field skills that contribute to the base set of information used in assessment, planning, prescription writing, and management of forest and open space. Students learn to identify plants; interpret surficial geology, soils, and hydrology; and read the land for use history. Assessments learned in a series of field exercises comprise forest health and invasive surveys, wildlife habitat evaluations, and soil surveys and wetland delineation. This culminates in understanding and developing a site classification. Lastly, students learn field inventory and sampling techniques in data collection for soils, geology, plants, and wildlife habitat. 3 Course cr

ENV 959a or b, Clinic in Climate Justice, Law, and Public Health Staff

This course is an innovative collaboration between Yale School of Public Health and Vermont Law School and includes faculty and students from both Yale and Vermont Law School. In the course, interdisciplinary student teams carry out applied projects at the intersection of climate justice, law and public policy, and public health. Each team works with a partner organization (e.g., state agency, community organization, other nongovernmental organization) to study, design, and implement a project, typically through community-based participatory research practices. The course affords the opportunity to have a real-world impact by applying concepts and competencies learned in the classroom. Class sessions and team meetings are conducted using a hybrid approach that combines in-person, all-virtual, and virtually connected classroom arrangements. This course should be of interest to graduate and professional students across the University and is open to Yale College juniors and seniors. In addition, this course is one of the options available to students to fulfill the practice requirement for the M.P.H. degree at YSPH and the capstone requirement for the M.E.M. degree at YSE. Students who plan to enroll must complete an application, which will be used to match each student with a clinic project. Check the course's Canvas site or contact the Yale instructor at laura.bozzi@yale.edu for more information. Prerequisite: EHS 547 or permission of the instructor. 3 Course cr

ENV 962a or b, Tribal Resources and Sovereignty-Clinic

Understanding Tribal Resource Management: we identify and describe the varieties of tribal resources and the limitation of the management prerogatives facing Tribal Nations under the current legal regime. We explore those resources governed by the trust duty and the federal government's role. We also look at the emerging resources in the green economy and investigate the relations between tribes, states, and private actors. Co-management, the trust duty, and tribal sovereignty are the main themes around which the clinic is structured. Application required. 3 Course cr

ENV 966a, Sustainability Implementation: Change Management in Institutional Settings

Yale's formal sustainability efforts are nearing the two-decade mark, with the Office of Sustainability established in 2005, but the work to make the campus more sustainable has been going on far longer. From sending food scraps to pig farmers in the 1800s, to responding to energy crises and crashes with infrastructure changes, to establishing early recycling programs in the 1980s, the University's work has deep roots, if not always the comprehensive impact some would desire. This YSE Capstone course provides students with the opportunity to learn about this long history of effort to improve the University's sustainability and engage in the real act of change management in current efforts on campus. Exploring change management theory and learning from many on campus experts, students work in groups, bringing a diversity of experiences and knowledge to the table to tackle real and wicked problems in our midst. In taking on these timely projects, students have the opportunity to tangibly impact Yale's ongoing efforts to fully embrace sustainable operations while experiencing the friction, joy, disappointment, learning, and challenge that are all part of working to make real change happen. 3 Course cr

ENV 974a, Social Innovation Starter Teresa Chahine

In this course based at Jackson School of Global Affairs, students apply the ten stage framework of the textbook *Social Entrepreneurship: Building Impact Step by Step* to innovate new solutions for host organizations. Host organizations are social enterprises or other social purpose organizations based globally and locally who present Yale students with a problem statement to work on over the course of one term. This could include creating new programs or products, reaching new populations, measuring the impact of existing work, creating new communications tools for existing work, or other challenges. Students gain social innovation and entrepreneurship experience and host organizations benefit from students' problem solving. Students from all programs and concentrations at Yale are welcome to join Jackson students in forming inter-disciplinary teams to tackle social challenges. This course runs during the same time as Social Entrepreneurship Lab. The key distinction is that in that lab, students pick their own topic to research and ideate on, whereas in this course students work on projects for host organizations. Jackson students may elect to follow up on this course with a summer internship to the host organization, to help support implementation of their solution, if the host organization and the School administration accepts their application. 3 Course cr

Modules

ENV 001a, Self to System

Students work to gain the tools needed to thoughtfully design and maximize an impactful path through YSE, Yale University, and to their careers and lives beyond Yale. Students work through their own personal motivations and variety of lived experience. This MOD is designed to help students appreciate themselves and those around them and prepare them to maximize their time at YSE. 0 Course cr

ENV 002a, Science to Solutions

Students work to understand different strategies for knowing how to collect primary data; how to evaluate evidence; how to generate, visualize, and communicate alternative solutions; and how to iterate, monitor, and adaptively manage solutions.

Students then opt into one of two pathways: A New Haven experience or Yale-Myers Forest experience. o Course cr

THE FOREST SCHOOL

The Forest School at the Yale School of the Environment is the oldest continuous professional graduate forestry school in the nation. For over 120 years, Yale's forestry program has been at the forefront of developing approaches to the practice of forestry, generating knowledge about forests, and promoting the values forests bring to people's livelihoods and well-being.

Forestry has been at the heart of the School since its inception in 1900, when it was founded as The Yale Forest School by Gifford Pinchot and Henry S. Graves, with founding gifts from both individuals and the Pinchot family. From the beginning, The Yale Forest School has found its home in Marsh Hall at the top of Science Hill. During its first four decades, the School graduated the first four chiefs of the U.S. Forest Service; created the first field experience for incoming students (MODs) at Grey Towers, the Pinchot family home in Milford, Pennsylvania; and was gifted its first research and demonstration forest in 1908, which now comprises six forests that cover over 11,000 acres combined. In 1921, the School changed its name to the Yale School of Forestry, a name that changed again in 1972 to the Yale School of Forestry & Environmental Studies. In July 2020, the name changed to the Yale School of the Environment; at the same time, the School established The Forest School at the Yale School of the Environment in recognition of the School's founding mission and the continued importance of forestry.

VISION AND MISSION

After its establishment, The Forest School approved its Vision and Mission to guide the School into the future.

Vision

We seek to lead in advancing science and educating professionals to develop collaborative research, policy, and practice that address vital and compelling issues facing forests and people globally. We strive to do so justly and equitably, elevating a diversity of voices, and in respectful relationships with the land and one another.

Mission

Rooted in place-based experiential learning and rigorous research, The Forest School within the Yale School of the Environment educates scientists and practitioners to apply forest ecology and social dynamics in their work around the globe. We are a hub for connecting forests and people across disciplines, cultivating collaborations, initiatives, and research that underscore the importance of forests within the broader environmental field. As a school community, we train leaders in the field to be systems thinkers with dynamic and adaptive expertise, developing sustainable solutions for the critical challenges of our time.

The Forest School is guided by its Management Team, which is composed of core staff and faculty, as well as leaders from affiliated YSE centers, programs, and initiatives. These individuals are committed to oversight of The Forest School and the forestry curriculum as well as (1) collectively implementing the vision and mission; (2)

strategic direction of academics, research, and affiliated centers and programs; and (3) developing programming for the School.

FOREST-RELATED EDUCATION AND YSE COMMUNITY ENGAGEMENT

The Forest School has a dedicated core faculty, including twelve endowed professorships committed to forestry in perpetuity. TFS also prescribes the curricula of the forestry degrees granted by YSE, including a Master of Forestry (MF), which is accredited by the Society of American Foresters and is intended for students wishing to pursue professional careers in the management and policy of forest resources, and a Master of Forest Science (MFS), which is designed for students wishing to conduct scientific research that contributes toward basic and applied knowledge. Doctoral degrees are managed by YSE, though doctoral students work with TFS-related faculty on cutting-edge forest related research in a five-year, fully funded program.

Our education and training activities are rooted in place-based knowledge of the U.S. Northeast—centering applied forest ecology and social sciences—with a global scope spanning a spectrum of forest landscapes and societies. The Forest School offers numerous experiential learning opportunities for students, including field trips, stakeholder and community engagement, on-the-ground research at multiple local and international sites, and a summer forest apprenticeship. The summer apprenticeship, known as Forest Crew, is a twelve-week program held each summer at Yale-Myers Forest that trains students in forest management and land stewardship. TFS also offers an urban apprenticeship program through the Urban Resources Initiative's GreenSkills program where students help plant trees and care for New Haven's urban forests.

TFS also manages Yale Forests, which are used for teaching and training. Yale Forests cover nearly 11,000 acres in seven separate forests across New England, providing educational and research opportunities focusing on science-based management to promote ecological regeneration. At 7,840 acres, Yale-Myers is the largest of the seven School-managed forests and the single largest piece of property used for educational purposes by Yale University.

TFS also serves as a hub for researchers and practitioners in forest-related fields worldwide, bringing together the best science and practices to find solutions to the challenges that face the world's forests and people today. The School's cross-disciplinary research informs the practices and solutions collaboratively developed for students, faculty, and centers, programs, and initiatives. Programs for practitioners, land stewards, and YSE students are offered through the centers and programs that call The Forest School home, including the Environmental Leadership & Training Initiative (ELTI), The Forests Dialogue (TFD), Tropical Resources Institute (TRI), Urban Resources Initiative (URI), Yale Applied Science Synthesis Program (YASSP), and Yale Forests.

The Yale Forest Forum

The Yale Forest Forum (YFF), founded in 1994, is the convening body and the events hub of The Forest School serving as an outreach arm to the world. YFF serves as a forum for engagement, learning, and discussion on the most pressing topics and challenges related to forests and forest landscapes today. Over the past two years, YFF

has hosted some of the largest virtual events at Yale; for instance, in collaboration with *Orion* magazine, Yale Forum on Religion and Ecology, and Yale Environmental Humanities, TFS has been hosting an author-speaker series exploring environmental humanities, nature writing, and human relationships with forests.

The YFF guest speaker series is the longest continuously running speaker series at the Yale School of the Environment. Participants come from a wide range of organizations and perspectives, including government, NGOs and businesses, working at scales from local to international. YFF has transformed the speaker series into semester-long themed webinars that are accessible to all and a student seminar for credit; this past year's topics included: (Re)Considering Planted Forests for the 21st Century; What Makes a High-Quality Forest Carbon Credit?; Smallholder Planted Forests and Trees for Climate, Restored Landscapes, and Livelihoods; and How Can the Voluntary Carbon Market Make a Meaningful Contribution to Protecting Tropical Forests?. In fall 2023, YFF will host a webinar series on climate-smart forestry. Learnings from these series are published in the *YFF Review*.

Student Interest Groups

Student Interest Groups (SIGs) also have long history and relationship with The Forest School. Yale's chapter of the International Society of Tropical Foresters was first founded in 1989 as part of a global network of forestry and natural resource practitioners and professionals focused in the tropics. Highlighting the intersectionality of tropical forestry, students across disciplines, programs, and degrees participate in the group. Yale ISTF is best known for its annual conference, which is the longest running student-organized conference at Yale. This past year, the ISTF conference was hybrid, themed *Envisioning the Future of Tropical Forests: The Roles of Feedbacks, Interconnectedness, and Adaptation*. Yale ISTF has also served as a hub for the global ISTF network, which dissolved in the 1990s but is now reforming, in part based on the Yale chapter's enduring model.

The Yale Temperate Foresters (YTF) includes Yale student members of the Society of American Foresters, the Forest Stewards Guild, and other professional associations focused on North America's temperate forests. YTF serves as a hub for forest-focused students, with longstanding traditions of attending the Society of American Foresters annual national convention, harvesting holiday trees from Yale-Myers Forest, and social events.

Centers and Programs

Forestry-affiliated YSE centers and programs include:

Environmental Leadership & Training Initiative Born out of The Forest School, ELTI empowers people to design and implement land use practices that conserve and restore tropical forests and native tree cover in human-dominated landscapes.

Forest Fellows Program The Forest School is home to a cohort of postgraduate forestry students who continue their learning and training through short-term fellowships and receive mentorship from staff and faculty. This program further allows graduates to refine their skills and enter the job market with enhanced experience.

The Forests Dialogue TFD provides international leaders in the forest sector with an ongoing, multi-stakeholder dialogue platform and process focused on developing mutual trust, shared understanding, and collaborative solutions for sustainable forest management and conservation.

Tropical Resources Institute TRI supports interdisciplinary, problem-oriented masters and doctoral student research on the most complex challenges confronting the conservation and management of tropical environments and natural resources worldwide.

Urban Resources Initiative Recognized for tree planting and greenspace restoration, URI is a nonprofit and a program of The Forest School dedicated to community forestry, environmental education, and training and capacity building activities in New Haven.

Yale Applied Science Synthesis Program Centered on generating science to support decision making, YASSP is a new program that produces quantitative, reputable, scientific syntheses that guide and inform land management for pragmatic stewardship of forest and agricultural lands.

Yale Forests Yale Forests is The Forest School's home for teaching, learning, and researching in the field. The Yale Forests cover nearly 11,000 acres in seven forests across the U.S. Northeast. In addition to providing educational and research opportunities, we use science-based management to promote the ecological regeneration of the areas of the forests that are harvested for timber to balance conservation, research, and harvesting goals over the long-term. Special programs of Yale Forests include the Quiet Corner Initiative, Maple Education & Extension Program, and Northeast Forest Farmers Coalition.

CENTERS AND PROGRAMS AT THE SCHOOL OF THE ENVIRONMENT

Teaching, research, and outreach at the Yale School of the Environment are greatly enhanced by the centers and programs that have been initiated by faculty over the years. The centers and programs, each with a different concentration, are a key component of a student's learning experience. They allow students to gain hands-on clinical and research experience through funded student internships and projects, coordination of faculty research in areas of common interest, and creation of symposia, conferences, newsletters, and outreach programs.

Centers and programs are funded primarily through private foundations, nongovernmental organizations, state and federal agencies, international granting agencies, and private corporations. The nature and number of centers and programs evolve over time, reflecting faculty and student interest. Under the current organizational structure, each program falls under the umbrella of a center, which enables further collaboration and resource sharing.

Center for Green Chemistry and Green Engineering at Yale

The mission of the Center for Green Chemistry and Green Engineering at Yale is to advance sustainability by catalyzing the effectiveness of the Green Chemistry and Green Engineering community. Green Chemistry and Green Engineering represent the fundamental building blocks of sustainability. Working in these disciplines, chemists and engineers are creating the scientific and technological breakthroughs that will be crucial to the future success of the human economy.

The Center for Green Chemistry and Green Engineering at Yale works to stimulate and accelerate these advances. Guided by four core operating principles – (1) Insist on scientific and technical excellence and rigor, (2) Focus on generating solutions rather than characterizing problems, (3) Work with a diverse group of stakeholders, and (4) Share information and perspectives broadly – we seek to accomplish four key objectives:

- Advance the science
- Prepare the next generation
- Catalyze implementation
- Raise awareness

The center concentrates on five focus areas:

Research The center supports and advances research in Green Chemistry and Green Engineering (GC&GE), a critical component to building the community, designing and discovering innovative solutions, and achieving a sustainable future. The center serves as a catalyst to both Yale and the greater GC&GE communities for discipline-specific and cross-disciplinary research collaborations focused on key areas of GC&GE within science, technology, and policy for sustainability.

Policy and outreach The center engages in policy, communication, and outreach initiatives that raise awareness of—and support for—GC&GE. In this dialogue the center engages with a wide network of stakeholders, including NGOs, industry, academia, and government, as well as local communities and the general public.

Education A robust educational program is an essential element of the center. Center activities are focused on educating undergraduate and graduate students in the principles and practice of GC&GE. The center also serves the wider academic community by providing opportunities for faculty training and by developing and disseminating GC&GE curriculum materials.

International collaborations GC&GE are rapidly spreading through both industrialized nations and the emerging economies. In all regions, the center engages with the network of scientists, engineers, policy makers, business people, and public health and environmental experts focused on sustainability science on behalf of the greater good.

Industrial collaborations GC&GE can only provide meaningful impact on the challenges of global sustainability when implemented on a large scale. For this reason, collaboration with industry is a key part of the center's work. Direct engagement creates a dialogue that informs industry of the latest research breakthroughs in the field of sustainable science and technology. Likewise, such engagement informs academic researchers on industry's most important concerns. This dialogue facilitates a direct line for implementation of these innovations.

Center for Industrial Ecology

The interdisciplinary, international team at the Yale Center for Industrial Ecology (CIE) brings training in the environmental, social, and policy sciences, engineering, and management to the analysis of materials and energy in society. Researchers study stocks, flows, and transformation of physical resources in systems at scales ranging from materials, products, and product life cycles, to factories, cities, countries, and globally. The center is dedicated to the development and promotion of research, teaching, and outreach in industrial ecology. Current topics of interest include:

1. Mapping and analyzing stocks and flows of resources and their associated drivers, costs, and environmental impacts with tools such as material flow analysis (MFA), life-cycle assessment (LCA), and environmentally extended input-output analysis (EEIOA).
2. Uncovering social, industrial, and economic dynamics that shape stocks and flows of materials and energy in the analysis and development of the circular economy, sustainable production and consumption, and industrial symbiosis/closed-loop systems.
3. Developing and analyzing policies and corporate strategy relevant for industrial ecology including extended producer responsibility (EPR) and business models supporting sustainable, resource-efficient outcomes.

Together with the Center for Green Chemistry and Green Engineering, CIE forms a specialization in the master's program as well as a broad learning community.

JOURNAL OF INDUSTRIAL ECOLOGY

CIE has been home to a highly regarded international journal. Published by Wiley, the *Journal of Industrial Ecology* is a peer-reviewed, online, multidisciplinary, bimonthly publication on industry and the environment that is aimed at both researchers and practitioners in academe, industry, government, and advocacy organizations. Now owned by the International Society for Industrial Ecology, the *Journal of Industrial Ecology* is indexed in Science Citation Index Expanded and Scopus. See <https://wileyonlinelibrary.com/journal/jie>.

INDUSTRIAL ENVIRONMENTAL MANAGEMENT PROGRAM

The Industrial Environmental Management (IEM) program at Yale aims to equip students with an integrated set of skills with which to tackle the complex, multifaceted environmental problems facing industrial and corporate managers. The core intellectual framework for IEM is the systems science of industrial ecology, which examines materials, water, and energy in a common framework. Students can pursue specialization and certification through the M.E.M. program in Industrial Ecology and Green Chemistry.

An active Industrial Environmental Management and Energy Student Interest Group (SIG) sponsors field trips to industrial sites, on-campus talks by visiting managers, and symposia on current topics of interest.

PROGRAM ON SOLID WASTE POLICY

The program has two principal goals: (1) to inform contemporary policy discussions about solid waste, materials management, and the circular economy by applying the methods and findings of industrial ecology and the social and environmental sciences; and (2) to develop workable policy solutions that address the impediments to safe, cost-effective solid waste management and the complexities of comprehensive materials and life-cycle management. Current research focuses on high-resolution mapping of nonhazardous industrial waste to improve the potential for reuse and on policies for extended producer responsibility.

Environmental Leadership and Training Initiative

In April 2006 YSE launched the Environmental Leadership and Training Initiative (ELTI) — <http://elti.yale.edu> — thanks to a generous grant from the Arcadia Fund, a charitable fund of Lisbet Rausing and Peter Baldwin. ELTI's mission is to cultivate the capacity of people from all sectors and backgrounds to restore and conserve tropical forest landscapes using strategies that support biodiversity and livelihoods. Through complementary, applied, and action-oriented training and follow-up leadership support, ELTI strives to accelerate on-the-ground conservation and restoration actions with the people who depend upon and govern tropical forest landscapes. ELTI's training program includes place-based, experiential field courses with partners in five primary countries and online courses based out of YSE for a global audience. To date, ELTI has trained more than 5,000 leaders around the globe through more than 200 training events. The ELTI team has also facilitated 323 events with alumni of ELTI

courses, who include farmers, practitioners, and decision makers in tropical forest landscapes, as part of ELTI's effort to facilitate application of knowledge learned.

ELTI's programs are implemented via partnerships with more than 20 organizations located in tropical countries around the globe, including universities, research institutes, government ministries, NGOs, and community organizations. The field programs are anchored in training landscapes with partners in Brazil, Colombia, Panama, Indonesia, and the Philippines, which enable ELTI to offer short courses for different audiences on a range of themes. The online program is global in reach and includes intensive and interactive short courses lasting six to eight weeks, as well as a yearlong certificate program open to a global audience. The field courses are taught in local languages, and several online courses are available in French, Spanish, Portuguese, and Indonesian. YSE faculty participate in teaching ELTI courses, and ELTI's student internship program provides a unique opportunity for YSE students to develop and implement capacity development courses and materials. Students can also take YSE seminars taught by ELTI team members, as well as conduct field research in ELTI's training landscapes on natural and social science themes.

Hixon Center for Urban Ecology

The Hixon Center for Urban Ecology provides an interdisciplinary forum for scholars, students, and practitioners to work collaboratively on integrated research, teaching, and outreach to improve our understanding and management of urban ecosystems within the United States and around the world. Core to the Hixon Center's work is its commitment to applying theory in practice.

The ecological health and integrity of urban ecosystems have a profound impact on urban economic productivity and quality of life. Pioneering research, new theoretical understanding, and innovative practice will be required to provide the knowledge and tools necessary to foster healthy natural systems essential for the future well-being of the modern city and the people who live there. This need has never been greater than today, when a majority of the world's population either resides in or is rapidly migrating to urban areas.

To accomplish its mission, the center builds upon and strengthens the work of several programs at the School, including the annual Hixon Center Urban Conference, Urban Resources Initiative, "Silviculture in the City" applied forest research, climate engagement through art in cities, using earth observations to reduce greenspace and health inequities in Connecticut, and the Central Park Climate Lab. Further, the Hixon Center is aligned with the newly formed University-wide initiative Yale Urban.

The Hixon Center has a strong focus on collaboration within the School, across the University, and beyond. The center sponsors lectures and symposia as a means to disseminate ideas and foster dialogues and understanding of the critical issues confronting urban ecosystems.

The Hixon Center also supports students' basic and applied research through fellowships connected to current Hixon Center priorities in the realm of urban ecology. The center will continue to build the urban environmental focus at Yale while

strengthening the School's urban dimension, creating new models and approaches for addressing urban environmental challenges.

URBAN RESOURCES INITIATIVE

The Urban Resources Initiative (URI) is a not-for-profit/university partnership dedicated to community participation in urban ecosystem management. A substantial body of learning recognizes that sustainable urban ecosystem management depends on the meaningful participation of local residents. Those who know local conditions and whose daily actions influence the health and quality of urban ecosystems must play a central role in designing and implementing management strategies. Sustainable natural resource management and conservation cannot be achieved by technical, scientific solutions alone. Conservation efforts, especially in urban areas, must emphasize social revitalization alongside environmental restoration.

Yale's URI program draws on these essential elements to facilitate community participation in urban ecosystem management. "Community" is defined quite broadly. It includes the group of neighborhood leaders with whom interns work to restore lands near their homes. Community is a group of teens who are learning how to assess the tree canopy of their city. Community is the staff and leadership of city agencies who have the responsibility and resources to be environmental stewards of their city. URI's approach responds to and engages all of these communities.

URI offers a number of clinical learning opportunities that allow YSE students to gain real-world practice in their field. Listening to local concerns and developing environmental programs in cooperation with neighborhood groups, NGO partners, schools, and city agencies are the cornerstones of our work. Through these programs YSE students can make a real contribution to the New Haven community while they enrich their academic work by applying theory learned in the classroom with supervised clinical training. These programs include the Community Greenspace program, GreenSkills, environmental education/job training program, research opportunities, and training in urban forestry practices.

Community Greenspace Each summer YSE students work as community foresters as part of the Community Greenspace program, a citywide initiative to revitalize New Haven's neighborhoods by planting trees along streets and in parks, remediating lead from soil in front yards, reclaiming neglected lots, and building community. Each intern works with community groups, which develop restoration goals and design an implementation strategy for the summer. The interns support neighbors in conducting an inventory of existing trees, selecting species, preparing sites for new plantings, and planting perennials, shrubs, and trees.

The Greenspace program is an opportunity for Yale students to learn urban forestry practices. Neighbors initiate the process by identifying their environmental priorities in their community. URI looks to the local experts—the people who live in New Haven neighborhoods—as partners in defining and then assessing, designing, implementing, and sustaining the urban landscape.

Green job training Launched in 2007, URI's GreenSkills program creates an opportunity to address a critical predicament—a growing deficit in and unequal distribution of New Haven's street-tree canopy that can be countered by a green job program bringing together Yale and high school interns. In 2010 the GreenSkills

program was expanded to include adults with barriers to employment, particularly those whose life experience includes incarceration. Its goals include increasing New Haven's street-tree canopy by engaging adults and local high school students in tree planting efforts, thereby providing them with paid green job training opportunities. Each tree planted by URI's GreenSkills team is at the request of a New Haven resident, who commits to the stewardship of the newly planted tree.

The second major activity of URI's GreenSkills program is to optimize green infrastructure solutions to manage stormwater and improve water quality in partnership with the City of New Haven. In New Haven, three rivers flow through densely settled urban areas before draining into New Haven Harbor and Long Island Sound. Large areas of impervious surface and compacted soils lead to significant overland flow of contaminated stormwater. The contamination in the waterways is the direct result of stormwater runoff from the city's impervious surfaces, which overload the city's combined and separate storm sewer systems and eventually discharge into Long Island Sound. Green infrastructure, such as infiltration bioswales, significantly reduces storm flows and improves water quality. URI and EMERGE CT (a local NGO), in partnership with the City of New Haven, have installed two hundred bioswales to improve stormwater quality and reduce storm flows to separated and combined sewers.

RESEARCH

Both URI and the Hixon Center partner in and support applied research in urban areas as well as fund master's and doctoral research projects at the Yale School of the Environment. URI activities provide valuable research opportunities in community organizing and development, urban forestry management, environmental education, and monitoring and evaluation of community-managed ecosystems. Currently, URI and The Forest School at YSE are partnering with the U.S. Forest Service's Northern Research Station to regenerate oak for a climate adaptation initiative in eastern cities through "Silviculture in the City." Hixon as part of YSE, along with the Yale Schools of Art and Architecture, are supporting the first fellows in the Climate Engagement through Art in Cities project, using murals with innovative paint to reduce hot spots in New Haven neighborhoods and communicate about climate change. Hixon Faculty Director Karen Seto is also spearheading two research projects through Hixon and/or URI: "Using Earth Observations to Reduce Greenspace and Health Inequities in Connecticut" and the Central Park Climate Lab, which is in partnership with the Natural Areas Conservancy and Central Park Conservancy.

The Hixon Center also awards master's and doctoral fellows for summer research. For summer 2023, eight Hixon Fellows advised by eight different YSE faculty members will study topics including but not limited to spatiotemporal analysis of compound hazards in urban areas across California, understanding carbon sequestration and food access in NYC green roofs, understanding changing health disparities, urban silviculture, street tree communities in residential areas of Nairobi, and understanding urban forest dynamics.

Some examples of past student research activities include a community survey to determine human health impacts of vacant lands; measurement of biological communities found in Greenspace sites and abandoned lots; how community group

dynamics affect urban street-tree survival; and measurement of density of street trees per linear mile to reveal tree canopy inequities, which need to be resolved.

HIXON CENTER URBAN CONFERENCE

Since 2013, the Hixon Center has held an annual conference on urban ecological issues of local, national, and global importance. On September 23, 2022, Hixon and the Yale Planetary Solutions Project co-organized "Cities as Solutions to Climate Change: Perspectives from IPCC Authors." Hixon and YPSP brought together researchers and practitioners to discuss the potential impacts that cities have on climate change around the world. Speakers included two vice chairs and seven lead authors from the Intergovernmental Panel on Climate Change, the United Nations body for assessing the science related to climate change. On September 15, 2023, the Hixon conference will focus on urban forestry.

YALE URBAN

In March 2023, the Hixon Center's Faculty Director Karen Seto and faculty leaders across Yale launched Yale Urban, a new Yale-wide initiative that brings the University's expertise and diverse strengths on urban research and practice together. It is a conduit for world-class scholarship and interdisciplinary action to shape a more sustainable urban world and deploy urban solutions at scale.

Justice, Equity, Diversity, and Sustainability Initiative

The Justice, Equity, Diversity, and Sustainability Initiative (JEDSI) seeks to examine the relationship between social inequalities, lived experiences, and environmental outcomes. To this end, JEDSI currently focuses on six primary areas of research, teaching, and practice:

Environmental history We study environmental history and events from historical and contemporary perspectives. Our work analyzes the contributions of leading figures in the environmental sector. We also bring to the fore people whose voices are often ignored in conservation narratives.

Nature, outdoor experiences, attitudes, and perceptions Our research examines racial, ethnic, gender, and class differences in environmental behavior and nature and outdoor experiences. We also study environmental attitudes and perceptions.

Environmental inequalities, resilience, and sustainability We theorize about the environmental justice (EJ) movement, engage with EJ activists and communities, and conduct research about historical and contemporary EJ issues. We examine the occurrence of environmental hazards and discriminatory policies and practices, and we document the existence of open space and other amenities in EJ communities. We identify forms of community resilience that can help communities thrive and foster long-term sustainability.

Food and farming: access, sovereignty, and justice We research food systems, food insecurity, access to healthy and affordable foods, food sovereignty, and food justice. We probe discriminatory policies and practices faced by farmers of color and work with small farmers, urban farmers, and community gardeners. We collect data on the types

of food outlets in cities and examine the roles that small farmers, farmers' markets, urban farmers, community gardeners, and emergency food assistance organizations play in reducing food insecurity. We also study mechanisms that communities and groups use to enhance food sovereignty.

Institutional diversity, transparency, and workforce dynamics We produce pathbreaking research and publications on diversity in the environmental sector. We study students in environmental programs; the staff, board, and members of environmental institutions; preference to work in green organizations; wages and equity in said organizations; recruitment and retention in the sector; the adoption of diversity measures, and the disclosure of diversity activities in enviros; and leadership in these institutions. Environmental professionals use our work to enhance diversity in environmental organizations and the broader environmental movement.

Diversity pathway programming We operate two pathway programs:

- *The Yale Conservation Scholars–Early Leadership Initiative* provides one to two summers of internship opportunities to undergraduates who are historically underrepresented in the conservation field. The scholars spend the summer interning in an environmental nonprofit. About a fourth of our program participants pursue graduate degrees. This program was previously the Doris Duke Conservation Scholars Program at Yale School of the Environment and the University of Michigan. It was relaunched in 2021 with a new name and new funding.
- *The Environmental Fellows Program* provides a summer internship to master's and doctoral students who are historically underrepresented in the environmental sector. The fellows participate in internships at environmental grant-making foundations or environmental nonprofits around the country.

JEDSI also organizes the New Horizons in Conservation Conference. This annual national conference gathers students and professionals of color in the environmental field as well as others interested in learning more about and advancing diversity practices in their organizations. Almost 900 people from around the world participated in the 2021 conference. The first hybrid conference was held in New Haven in May 2023.

Additionally, JEDSI mentors the students and young professionals in its programs and lab. And it develops profiles of environmental professionals of color who have outstanding careers in the environmental sector. The database contains information on 200 individuals. The profiles, which are available to people seeking mentors, also help students and young professionals understand how senior professionals forge successful careers. For additional information, see <https://jedsi.yale.edu>.

The SEARCH Center: Solutions for Energy, Air, Climate, and Health

The SEARCH Center (Solutions for Energy, Air, Climate, and Health), funded by a five-year Air, Climate and Energy (ACE) Center grant from the U.S. Environmental Protection Agency, aligns cutting-edge scientific research and technology to support the EPA's strategic goals of protecting human health and the environment. Based at Yale

University, with major participation by Johns Hopkins University, the SEARCH Center involves more than two-dozen researchers across a number of institutions including North Carolina State University, Stanford University, Northeastern University, University of Chicago, University of Michigan, and the Pacific Northwest National Laboratory.

The center's main objectives are to: (1) investigate energy-related transitions underway across the United States by combining state-of-the-science modeling of energy systems, air quality, climate, and health; (2) characterize factors contributing to emissions, air quality, and health associated with key energy-related transitions in order to understand how these factors affect regional and local differences in air pollution and public health today and in the future; and (3) identify key modifiable factors (e.g., transportation, land use, power generation) and how those factors and their air pollution impacts are likely to change over time. The center has four research projects, two support units, and an administrative core.

- Project 1 (*Modeling Emissions from Energy Transitions*) encompasses economic modeling of national emissions and air quality under different energy policy scenarios.
- Project 2 (*Assessment of Energy-Related Sources, Factors, and Transitions Using Novel High-Resolution Ambient Air Monitoring Networks and Personal Monitors*) measures and examines real-world exposure to air pollution using stationary and personal monitors.
- Project 3 (*Air Quality and Climate Change Modeling*) draws upon projects 1 and 2 to model relationships between air quality, policy, and health under various climate change scenarios using air quality and climate change modeling.
- Project 4 (*Human Health Impacts of Energy Transitions*) estimates the health impacts of various air quality scenarios from the other SEARCH projects and identifies populations most vulnerable to air pollution.
- The Policy and Decision-Making Unit bridges the divide that often separates science and policy through iterative processes bringing SEARCH scientists and real-world policy makers together.
- The Environmental Data Science Unit provides statistical support for all four projects. This unit is developing statistical methods to address the scientific questions of interest and will facilitate integration across different projects. This unit will also encourage reproducible research through dissemination of data and statistical code, where feasible.

The Forests Dialogue

The Forests Dialogue (TFD) was established in 2000 to provide international leaders in the forest sector with an ongoing, multi-stakeholder dialogue platform and process focused on developing mutual trust, a shared understanding, and collaborative solutions to challenges in achieving sustainable forest management and forest conservation around the world. In recent years, TFD has expanded its remit to include all actors across the landscape, not just the forest sector. TFD is an autonomous, unincorporated organization hosted by Yale University and with a secretariat based at The Forest School at YSE.

The goal of TFD is to reduce conflict among stakeholders over the use and protection of vital forest resources. Since its founding, TFD has brought together more than 3,000 diverse leaders to work through more than twenty compelling forest and landscape sustainability challenges. TFD uses a multi-stakeholder dialogue model to progress from building trust among participants to achieving substantive, tangible outcomes in such a way that participants are committed to advocate for and work to implement those broadly agreed upon outcomes. TFD is currently orienting much of its work to focus on questions related to forests and climate change. Current TFD initiatives include: Climate Positive Forest Products–Mass Timber (CPFP), The Land Use Dialogues (LUD), Tree Plantations in the Landscape (TPL), Bioenergy from Forests (BEF), Forests and Climate, and Ecosystem Restoration.

TFD is governed by a steering committee composed of leading individuals representing key forest stakeholders from around the world. TFD hires YSE students as program associates each term to work with the secretariat and steering committee members on all facets of TFD's operations. Duties include background research for the initiatives, communications, secretariat support, dialogue planning, and running the dialogues on location. Students who are interested in forests, climate, and landscape-related issues as well as those who are interested in stakeholder engagement are encouraged to apply to work with TFD.

Tropical Resources Institute

The mission of the Tropical Resources Institute (TRI) is to support interdisciplinary student research on the most complex challenges confronting the conservation and management of tropical environments worldwide. TRI was created in 1983 to strengthen the School's involvement in the study and management of tropical resources. The institute recognizes that the problems surrounding the conservation and management of tropical resources are rapidly increasing in complexity, while demands on those resources continue to grow. Emerging structures of global environmental governance and local conflicts over land use require new strategies and leaders able to function across diverse disciplines and sectors, and at multiple scales. TRI seeks to train students to be leaders in this new era, equipping them with the resources and tools this new generation will require to equitably address the challenges ahead.

TRI serves as the nexus within YSE through which students conduct interdisciplinary research and outreach activities throughout the tropics. Within the broader Yale community, TRI serves as a clearinghouse for research and educational activities pertaining to tropical countries, societies, and environments.

TRI is run by a director, student program assistants, and a faculty steering committee. Its directorship and its student grant program are supported by its own endowments.

Research TRI administers the TRI Fellowship, an endowed fellowship program that supports several dozen master's and doctoral students conducting natural and social science research in the tropics each year. Following the mission of TRI, these research projects are typically interdisciplinary and problem-oriented and cover a wide range of issues concerning the management and conservation of tropical resources. TRI also administers a small grants program focused on Sri Lanka. More information on both programs can be found at <https://tri.yale.edu>.

Education Throughout the academic year, TRI sponsors workshops, discussions, and speakers that focus on timely conservation and development issues in the global tropics. TRI provides mentoring and training to graduate students in research design, proposal writing, and field methods; after research, it helps them develop articles for *Tropical Resources*, TRI's annual journal of student research.

Outreach TRI supports partnerships with international organizations in many tropical regions in order to create innovative research opportunities for YSE students. TRI works to build networks among scholars and international institutions to facilitate research and the dissemination of knowledge on tropical resource issues. TRI distributes its annual *Bulletin* to an international list of practitioners and academics, and it hosts a website, <https://tri.yale.edu>.

Publications TRI publishes *Tropical Resources: The Bulletin of the Yale Tropical Resources Institute*, an annual journal of student research funded by grants from TRI. This publication is disseminated both internationally and domestically to a list that includes practitioners, academics, and institutions that focus on tropical issues; it can also be read online at <https://tri.yale.edu/tropical-resources>. *Tropical Resources* typically contains articles by a dozen or more students based on a wide range of field research experiences.

Ucross High Plains Stewardship Initiative

The Ucross High Plains Stewardship Initiative (UHPSI) fosters land stewardship and conservation in the American West through teaching, research, and outreach. This is primarily achieved through mentoring students on applied research and management projects in collaboration with Western partners. Research and management projects are diverse and interdisciplinary, and address Western conservation challenges. Our broad network of more than fifty partners comprises ranchers, nonprofits, federal and state agencies, and academics. Students engaged with UHPSI develop knowledge and skills in Western issues and natural resource management on private and public lands through our collaborative, experiential-learning framework.

For more information about UHPSI, visit <https://highplainsstewardship.com/meet>.

Yale Applied Science Synthesis Program

The Yale Applied Science Synthesis Program (YASSP) is an initiative housed at The Forest School at the Yale School of the Environment. The program connects academic researchers, policymakers, and those managing lands to answer applied questions about how land management decisions affect the services provided by forests, croplands, wetlands, rangelands, and grasslands.

We work with for- and not-for-profit partners that need to make decisions on sustainable land management practices. Our synthesis work focuses on the regional context within which local management decisions are made, to help maximize ecosystem benefits provided by these land resources, such as carbon storage, sustainable food production, and biodiversity. Our mission reflects the founding principles of The Forest School, which was first established in 1900, to develop applied scientific knowledge to guide effective stewardship of the nation's forests.

Our work is funded through multiple partnerships and grants, including from the Yale Center for Natural Carbon Capture, the Environmental Defense Fund, US Department of Energy and Lawrence Livermore National Lab, and Ocean Spray.

Yale Carbon Containment Lab

At the Yale University Carbon Containment Lab (CC Lab), we design, test, and develop novel and neglected, low-cost, safe, scalable, and verifiable methods of atmospheric carbon containment.

We look at both carbon removal and emissions abatement with a goal of scaled implementation. Our goal is to contribute to containing one billion metric tons of CO₂ equivalent (MTCO_{2e}) emissions by 2050, with more short term goals of supporting the annual containment of one million metric tons by 2030.

The CC Lab is led by Executive Director Dean Takahashi, longtime senior director of the Yale Investments Office, along with managing directors Anastasia O'Rourke '09 Ph.D. and Justin Freiberg '10 M.E.Sc.

We focus on approaches that are inspired and supported by natural systems. We do so by designing and testing novel systems and methods, analyzing and measuring methods for carbon containment from a variety of technical, economic, financial, environmental, and social impact perspectives. We also focus on engaging markets, paving the way for financing and deploying innovative carbon containment methods at scale, and with sustainable business models.

The CC Lab portfolio currently includes projects sequestering carbon using geologic storage, capturing fugitive methane emissions, and exploring opportunities for carbon containment in wood biomass. Some are led by the CC Lab team and some by external partners and collaborators across a variety of sectors and specialties. Operating as part of the Yale School of the Environment, the CC Lab draws on the exceptional expertise and skills of Yale University faculty, alumni, students, staff, and other external partners and collaborators. The CC Lab eagerly supports student intern opportunities for both undergraduate and graduate students and encourages students to check the CC Lab's website for current opportunities. Additionally, the CC Lab welcomes opportunities and proposals for collaboration.

Interested in working with us? Send your résumé or proposal to carboncontainment.lab@yale.edu.

Yale Center for Business and the Environment

The Yale Center for Business and the Environment (CBEY) is a hub for creating innovative and sustainable solutions to the challenges facing the human and natural systems upon which we all rely. Our mission is to inspire, support, and accelerate the transition to a just and thriving world. We do that by connecting people, ideas, and resources to foster business and cross-sector solutions to global challenges.

By educating, convening, and supporting our network, we promote collaborative, equitable, and impactful change.

Educate We are life-long learners. Through innovative educational programs, like the YSE/SOM joint degree program, Financing and Deploying Clean Energy Certificate Program, internships, independent studies, research, and more, we offer something for individuals at every stage of their educational journey and careers.

Convene We are a community of collaborators. Through events, mentorship programs, networking opportunities, and partnerships with values-aligned organizations, we connect individuals and ideas to support action. CBEY takes pride in serving as a “physical LinkedIn,” curating authentic and meaningful connections among our community and beyond.

Support We meet people where they are in order to help get them where they’re going. At CBEY we:

- connect individuals with the resources and support they need to succeed,
- elevate innovative ideas, individuals, and organizations,
- listen and respond to the needs of our community, and
- work collaboratively to build novel solutions or strengthen tried-and-true methods to advance positive progress.

To learn more, visit <http://cbe.yale.edu>.

Yale Center for Environmental Communication

The Yale Center for Environmental Communication (YCEC) conducts research on the psychological, cultural, and political factors that influence environmental attitudes and behavior; teaches students and trains working professionals; informs and engages the public through environmental journalism; and supports a global network of organizations seeking to build public and political will for environmental solutions.

Research The YCEC conducts world-class research on climate change and environmental communication. Research results are published in public reports, interactive maps, and scientific articles and are shared via public presentations and private briefings. The findings are used by hundreds of news organizations, including CBS, ABC, NBC, CNN, the *New York Times*, *Washington Post*, Associated Press, the *Guardian*, Xinhua, and many others.

Teaching and training The YCEC provides courses in environmental communication for Yale graduate and undergraduate students and training programs for working environmental professionals.

Environmental journalism The YCEC informs and engages the public in environmental science and solutions through several environmental journalism initiatives, including *Yale Environment 360*, *Yale Climate Connections*, the Environmental Film Festival at Yale, *Sage Magazine*, and the *Yale Environmental Review*.

Supporting a global network of environmental communicators The YCEC organizes national and international meetings, conferences, and events to convene climate change and environmental leaders and supports a global network of environmental communication scholars and practitioners.

Yale Center for Environmental Justice

The Yale Center for Environmental Justice (YCEJ) is a joint undertaking between Yale School of the Environment and Yale Law School committed to strengthening institutional capacity to empower frontline communities to lead change by catalyzing partnerships and expanding interdisciplinary research, teaching, and practice in environmental justice. In addition, YCEJ promotes an expanded definition of environmental justice, recognizing the lived experiences and interconnected systemic inequities that shape environmental inequality.

The center promotes different environmental justice initiatives at Yale through partnerships, programs, outreach, and convening. YCEJ hosts several events throughout the year including the Global Environmental Justice Conference, an annual gathering that brings together scholars, practitioners, and activists from around the world and across disciplines to discuss how scholarship, social justice, and environmental management can be effectively integrated.

YALE FORUM ON RELIGION AND ECOLOGY

The Yale Forum on Religion and Ecology is an international, multireligious project contributing to a new academic field and an engaged moral force of religious environmentalism. With its conferences, publications, monthly newsletter, and website, it explores religious worldviews, texts, and ethics in order to contribute to environmental solutions along with science, policy, law, economics, and appropriate technology.

The forum was founded in 1998 by Mary Evelyn Tucker and John Grim and has been based at Yale University since 2006. Please explore our website, <https://fore.yale.edu>, for more information on the mission, history, and projects of the forum.

Yale Center for Environmental Law & Policy

The Yale Center for Environmental Law & Policy, a joint undertaking between Yale Law School and the Yale School of the Environment, seeks to advance fresh thinking and analytically rigorous approaches to environmental decision-making across disciplines, sectors, and scales. In addition to its research activities, the center aims to foster discussion and collaboration across the Yale campus on environmental law and policy issues at the local, regional, national, and global levels. Current projects include the biennial Environmental Performance Index (<https://epi.yale.edu>), which ranks countries on their sustainability performance across eleven policy categories covering both environmental public health and ecosystem vitality; the Global Commons Stewardship Index, which ranks countries based on their impact on the shared resources of the Global Commons; the Yale Initiative on Sustainable Finance (<https://cbey.yale.edu/yale-initiative-on-sustainable-finance-yisf>); and Remaking the Global Trading System for a Sustainable Future. Additional research themes include: sustainable investing and ESG reporting, corporate sustainability metrics, rethinking environmental protection for the twenty-first century, corporate sustainability strategy, and global governance. The center also plays a role in leading a major YSE initiative, Yale Environmental Dialogue, which aims to promote conversations on

challenging sustainability issues with a goal of bridging political divides. For additional information, please visit <https://envirocenter.yale.edu>.

Yale Forest Forum

The Yale Forest Forum (YFF) was established in 1994 by Professor John Gordon along with other faculty members at Yale to engage a diverse group of leaders in forestry and forest policy and management in the United States. The group's initial work was to convene the Seventh American Forest Congress to collaboratively develop and articulate a common vision and set of next steps for the future of U.S. forests with over 5,000 stakeholders across the country.

The YFF now serves as the special events hub of The Forest School at the Yale School of the Environment. YFF offers two seminar series each semester during the academic year, providing opportunities to hear from leaders in forest management, conservation, or policy in an informal setting or remotely. The weekly seminar speaker series, offered every Tuesday and Thursday of the academic year, are open to all in the YSE community as well as the general public virtually. Public presentations are followed by a private discussion with guest speakers and students enrolled in the seminar. YFF also offers and supports other engaging forest-related events in collaboration with individuals and organizations throughout YSE and externally. Those interested in attending can follow the schedule of events on the YFF website and YSE calendar.

Yale Program on Climate Change Communication

The Yale Program on Climate Change Communication conducts scientific research on public climate change knowledge, attitudes, policy preferences, and behavior, and on the underlying psychological, cultural, and political factors that influence them. We also engage the public in climate change science and solutions, in partnership with governments, media organizations, companies, and civil society, and with a daily national radio program, Yale Climate Connections.

PARTNERSHIPS

The School of the Environment is a multidisciplinary learning center with tremendous resources, both within and outside the School. The School is engaged in partnerships that range from alliances with other Yale programs and schools to formal agreements with many external organizations and universities. These relationships enrich the School and add important dimensions to the YSE learning experience.

Within Yale

Students of the School of the Environment often take advantage of the faculty and resources of other schools and departments within the Yale system. YSE has several types of arrangements that enable students to fully benefit from the University.

The School has joint-degree agreements with the School of Architecture, Divinity School, School of Engineering & Applied Science, Law School, School of Management, School of Public Health, and Graduate School of Arts and Sciences. For further information on joint degrees, please refer to Joint Master's Degree Programs in the chapter Master's Degree Programs, and to Combined Doctoral Degree in the chapter Doctoral Degree Program.

The School has also cultivated relationships with key faculty members of other divisions of the University who have research and teaching interests that overlap with the School's foci. These faculty hail from the schools of Architecture, Engineering & Applied Science, Management, and Medicine, as well as the departments of Earth and Planetary Sciences, Ecology and Evolutionary Biology, Economics, and Anthropology, among others. For a full list of the faculty with joint appointments, see Secondary Appointments in the chapter Faculty and Administration.

YALE CENTER FOR NATURAL CARBON CAPTURE

The Yale Center for Natural Carbon Capture sets out to study the fundamental and applied science of natural carbon capture. It aims at developing solutions that will provide one of the many tools needed for addressing some of the greatest challenges of our time. The center brings exciting research and researchers to the Yale community and connects them with many existing relevant research labs across campus and beyond. The center funds research projects, workshops, and fellowships and invests in outreach and training for the next generation of scientists and practitioners. These activities are centered around three focus areas: ecosystem and biological capture, geological and ocean capture, and industrial carbon utilization. For more information on YCNCC, visit <https://naturalcarboncapture.yale.edu>.

YALE INSTITUTE FOR BIOSPHERIC STUDIES

Established in May 1990, the Yale Institute for Biospheric Studies (YIBS) serves as a key convener for Yale University's research and training efforts in the environmental sciences. YIBS is committed to the teaching of environmental studies to future generations and provides physical and intellectual centers and programs for research and education that address fundamental questions that will inform the ability to generate solutions to the biosphere's most critical environmental problems. There

are currently three YIBS centers: the Center for Earth Observation, the Earth System Center for Stable Isotopic Studies, and the Center for Genetic Analysis of Biodiversity. YIBS also provides master's and doctoral student research support through various small-grant initiatives and a doctoral dissertation-enhancement grant program. For full information on YIBS and its associated programs and centers, see <http://yibs.yale.edu>.

YALE PEABODY MUSEUM

The Yale Peabody Museum, founded in 1866, contains one of the great scientific collections in North America. Numbering more than thirteen million objects and specimens, the collections are used for exhibition and for research by scholars throughout the world. Each year, an increasing number of specimens from the collection are available online at <http://peabody.yale.edu>.

The mission of the Peabody Museum is to advance understanding of Earth's history through geological, biological, and anthropological research, and by communicating the results of this research to the widest possible audience through publication, exhibition, and educational programs.

Fundamental to this mission is stewardship of the museum's collections, which provide a remarkable record of the history of Earth, its life, and its cultures. Conservation, augmentation, and use of these collections become increasingly urgent as modern threats to the diversity of life and culture continue to intensify.

The museum's collections are a major component of the research and teaching activities of the Peabody and Yale. The curators and staff are engaged in contributing new knowledge based on the museum's research materials. All collections are used in undergraduate and graduate teaching and research, as well as in public programs and exhibitions. The Yale Peabody Museum fills many important roles on the Yale University campus, particularly as it has expanded its role in the community and the region, thereby offering a "front door" to the University for the general public.

In 1995 a formal collaboration was established among the Peabody Museum, the Yale Institute for Biospheric Studies, and the School of the Environment. This environmental partnership recognizes the Peabody Museum as a resource and catalyst for interdisciplinary research on Earth's history and environment, and seeks to strengthen the intellectual ties between the museum and other groups with a shared interest in environmental research at Yale. The School of the Environment maintains a close association with the Peabody.

The Peabody Museum Coastal Field Station on Long Island Sound in Guilford, Connecticut, is used collaboratively by YSE faculty, staff, and students for research on coastal and estuarine systems. The station is a thirteen-mile drive east of Yale and provides centrally located access to one of the country's most important estuaries. The station includes a boat ramp, deep-water moorings, and two boats. There is also simple laboratory space within the field station building, Beattie House. Nearby research lands available to YSE students include an island (Horse Island), coastal pond (Guilford Pond), and salt marsh complex (the Richards Property). The newly constructed Horse Island research station is available to YSE faculty, staff, and students for research and teaching on the island. To visit or utilize these properties and facilities, contact the Peabody Museum Office of Student Programs.

YALE PLANETARY SOLUTIONS PROJECT

The Yale Planetary Solutions Project aims to raise awareness of climate and biodiversity work across Yale and to spark new approaches. It aspires to connect people whose ideas, when combined, might unlock novel solutions. As part of the project, the campus is used as a laboratory to implement techniques, policies, and ideas. The project approaches climate change through three lenses: research and teaching, campus operations, and through the endowment in order to mitigate, adapt, and engage. For more information, please visit <https://planetarysolutions.yale.edu>.

External Partnerships

The School of the Environment has partnership agreements with numerous local, national, and international organizations beyond the Yale campus. The following are a few examples of these arrangements.

NEW YORK BOTANICAL GARDEN

YSE enjoys a reciprocal relationship with the Graduate Studies Program at the New York Botanical Garden. The Botanical Garden program, which began in 1896, currently enrolls about a dozen students who are carrying out studies in systematic and economic botany and applied plant ecology at field sites around the world. The program's expertise spans the spectrum of both systematic and economic botany. It is operated in conjunction with several other academic institutions, including YSE.

The resources of the New York Botanical Garden include one of the largest botanical libraries in the world, an herbarium and 10,000 species of living plants housed in several greenhouses, as well as an electron microscope, environmental chambers, and instrumentation for radiobiological, biochemical, anatomical, molecular, phytochemical, chemosystematic, numerical taxonomy, and vegetational studies. YSE offers a combined doctoral degree with the New York Botanical Garden, which is funded by the Lewis B. Cullman Fellowship. NYBG faculty teach courses at YSE in tropical plant taxonomy, applied plant ecology, and ethnobotany.

EXTERNAL JOINT-DEGREE PROGRAMS

YSE also has joint-degree agreements with the Pace University School of Law, the Vermont Law School, and Tsinghua University School of Environment. Further information on these programs is available through the Office of Admissions.

ADMISSIONS: MASTER'S DEGREE PROGRAMS

The Yale School of the Environment offers four two-year master's degrees: the professionally oriented Master of Environmental Management (M.E.M.) and Master of Forestry (M.F.), and the research-oriented Master of Environmental Science (M.E.Sc) and Master of Forest Science (M.F.S.).

LEARNING ABOUT YSE

The best way to learn about the School is to visit YSE virtually or in person before submitting an application. The Office of Admissions offers both virtual and on-campus programs throughout the year. We encourage prospective students to attend our events for the most comprehensive view of YSE. Participants will meet students, faculty, and staff to become familiar with the School's mission and goals, degree requirements and courses, opportunities for research and applied projects, career development, and life at Yale. YSE faculty and staff also conduct outreach events online, around the United States and abroad, including at graduate school fairs, hosting virtual and off-campus information sessions, and visiting schools and universities. To learn if a representative will be coming to your area and to complete the required registration for our events, please visit the Admissions Events page at <https://apply.environment.yale.edu/portal/main-event-page>.

Campus visits are pre-scheduled events that you can register for on our Admissions Events page. You can also connect with our admissions staff online by scheduling a one-on-one meeting on the appointment page: https://apply.environment.yale.edu/portal/schedule_appointment. Individual appointments and campus visits outside of the scheduled times may be possible, subject to staff availability. Please note that weekend visits are not available. If you are interested in observing a class, please get in touch with faculty members directly via email. The class schedule for each term is posted at <http://environment.yale.edu/courses>.

The admissions website, <http://environment.yale.edu/admissions>, has extensive information about the School. Should you have additional questions, our admissions staff is happy to assist you by email, phone, and virtual/in-person appointment. The admissions office can be reached at admissions.yse@yale.edu or by telephone at 800.825.0330.

APPLICATION PROCEDURES

The application form for admission to the YSE professional and research master's degrees (M.E.M., M.E.Sc., M.F., or M.F.S.) may be found at <https://apply.environment.yale.edu/apply>. This form includes complete instructions for the application requirements. Learn more about our master's degree application requirements at <https://environment.yale.edu/admissions/masters-admissions/how-apply-masters-programs>.

Questions concerning admission or the application process should be directed to admissions.yse@yale.edu or 800.825.0330. Students may enter YSE and begin their studies in the fall term only. The deadline for master's application consideration is

December 8. Completed individual admissions files submitted by midnight EST on this date are guaranteed to receive a review by the Admissions Committee.

Previous applicants to YSE must submit a new application form, an updated résumé/ curriculum vitae, and transcripts depicting all academic work not included in the previous application. We also recommend that applicants consider submitting updated research or personal statements. Admissions records, including application forms and supplemental materials, are held for two years by the Office of Admissions. Provided reapplication occurs within two admissions cycles, all required materials previously submitted to the Office of Admissions will be incorporated into the new application as requested. Documents submitted before the admissions cycle for a fall 2021 entry are no longer available.

PREPARATION FOR ADMISSION

To excel in their program of study at YSE and a career in environmental management, all M.E.M. students must be conversant in four foundational knowledge areas. These areas are physical science, human science, ecology, and microeconomics.

Each fall term, four thoughtfully designed courses—tailored specifically for incoming M.E.M. students—are offered for students to learn, refresh, and deepen their understanding in these knowledge areas. In the process, students form a strong foundation to engage with the rigorous M.E.M. curriculum and approach complex problems through an interdisciplinary lens.

For incoming students with substantial academic or professional experience in any of the four areas, waiver exams are available each summer preceding enrollment at YSE. Students may make two attempts to pass a waiver exam. Students who can demonstrate sufficient proficiency in a foundational knowledge area by passing an exam will receive a waiver for that course.

The registrar will auto-enroll students who do not take or pass a waiver exam to complete the required foundational knowledge course(s). These courses must be completed during a student’s first fall term:

ENV 511	Ecological Foundations for Environmental Managers
ENV 512	Microeconomic Foundations for Environmental Managers
ENV 521	Physical Science Foundations for Environmental Managers
ENV 522	Human Science Foundations for Environmental Managers

Foundational Knowledge Preparation

The following are some examples of recommended undergraduate courses that will help prepare incoming students for the MEM curriculum:

PHYSICAL SCIENCE

- Earth science course covering geosphere, atmosphere, and hydrosphere
- Hydrology
- Soil science
- Environmental chemistry
- Climate science

HUMAN SCIENCE

- Environmental Governance
- Environmental Anthropology
- Environmental History
- Environmental Justice
- Environmental Sociology
- Human Geography
- Political Ecology
- Religion and Ecology

ECOLOGY

- General Ecology
- Biodiversity Science
- Population or Community Ecology
- Ecosystem Science or Ecosystems Ecology

MICROECONOMICS

- A course in Principles of Microeconomics

APPLICATION REQUIREMENTS

Candidates for admission must hold a four-year baccalaureate degree or an equivalent international degree and are required to provide the following materials:

1. A completed online application form.
2. A résumé/curriculum vitae. Indicate full- or part-time for each job/internship/volunteer position.
3. A combination of short essays and longer statements that illustrate fit, skills, and overall experience.
4. One transcript or mark sheet from each college and/or university attended with grades for each course, including study abroad and transfer institutions. Official transcripts are not required; however, all transcripts submitted must include the applicant's name and institution (not to be added by the applicant). Applicants who have completed a degree outside the United States or Canada are strongly encouraged to submit a transcript evaluation.

If submitting a transcript evaluation, applicants should use EducationUSA advisers (<https://educationusa.state.gov/find-advising-center>), World Education Services (www.wes.org), or Educational Credential Evaluators (<http://ece.org>) for course-by-course or ICAP evaluation of all transcripts (undergraduate and graduate). Those who secure WES or ECE evaluations should submit their official transcripts directly to WES or ECE, not the Office of Admissions. An additional copy of the transcript beyond the official evaluation is not required. Evaluations must be received in the Office of Admissions by the December 8 deadline for an application to be considered complete. The applicant is strongly encouraged to begin this process early, as evaluations can take over a month to complete.

Admitted students submitting transcripts and degree certificates from Chinese universities must arrange for a verification report of their university transcript

with the China Academic Degrees and Graduate Education Development Center (CDGDC; www.chinadegrees.cn/cn). Do not request your verification report from the CDGDC until your degree has been awarded. Verification reports should only be sent after accepting an offer of admission. The report must be mailed directly to the Office of Admissions by the CDGDC rather than by the admitted student or any third party. Any transcript not mailed by the CDGDC will not be considered a final official transcript.

5. Three letters of reference (academic and/or professional). Submission of the recommendation form and a one- to two-page letter is expected for each reference. Please note that we cannot accept any additional recommendations beyond the required three. It is strongly recommended that the applicant submit at least one academic letter of reference.
6. Standardized test score reports:

The submission of GRE, GMAT, or LSAT scores is *optional* at this time.

An official TOEFL or IELTS score report if English is not a native or customary language of instruction (copies will not be accepted). Applicants must achieve at least a 100 on the iBT version of the TOEFL or a 7.0 on the IELTS examination (minimum of 6.5 in each section) to be given full consideration for admission. See additional information on requirements related to English as a second language below.

7. There is no application fee at this time.
8. If applying to the M.E.Sc. or M.F.S. program, please include a list of three potential advisers on the application form. As an addendum to the personal statement, please provide a short paragraph for each listed adviser describing why you would like them to serve as your intended research adviser. Please include how your research interests align and how they may subsequently advise you on your project.

Note: Additional documents beyond those aforementioned will not be reviewed and may be discarded at the end of the admissions cycle.

All application materials should be uploaded to the electronic application form. Materials cannot be returned, copied, or forwarded to third parties.

All applicants must hold a bachelor's-level degree and demonstrate satisfactory academic achievement. There are no arbitrary standards or cutoffs for test scores or grade-point averages, except for English language ability (TOEFL and IELTS). Letters of reference from individuals who can evaluate the applicant's scholarship, professional activities, leadership skills, and career goals are especially valuable. Letters from undergraduate professors and/or professional supervisors are preferred. The School looks for students capable of making effective contributions to scientific knowledge or to professional service in addressing environmental problems. Special weight is given to relevant experiences obtained after graduation from college. Clarity regarding professional career goals is critically important in the applicant's personal statement. Faculty review teams read the applications submitted to the master's degree programs, and final admissions decisions rest on an integrated assessment of the components described above.

ENGLISH AS A SECOND LANGUAGE TRAINING REQUIREMENT

Applicants for whom English is not a native or customary language of university instruction must take the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). We require a minimum TOEFL score of 100 on the exam. A minimum overall score of band 7.0 is required on the IELTS, with a minimum of 6.5 in each section. Please note that we will only accept the iBT version of the TOEFL examination. When taking either test, applicants should indicate the School's Institution Code Number 3996; no department code is necessary. Additional information about TOEFL can be found at www.ets.org/toefl. Information about IELTS can be found at www.ielts.org. The testing service will send official test results directly to the School and generally take two to three weeks to arrive.

Applicants required to submit the TOEFL or IELTS must also submit a supplemental essay (300 words maximum) detailing all educational, research, and/or work and internship experience related to the English language. As a condition of acceptance, it may be required that applicants for whom English is a second language, whose undergraduate degree work has not been conducted in English, or whose application suggests such a need, complete a six-week instructional program in written and spoken English conducted by Yale Summer Session. More information will be provided to those students who may qualify for this requirement.

THREE CAIRNS CLIMATE PROGRAM FOR THE GLOBAL SOUTH

With the mission of training those who will lead the world toward a sustainable future, the Three Cairns Climate Scholarship for the Global South is offered by the YSE to full-time master's students who demonstrate strong potential to advance climate solutions in the Global South. This transformative program is aimed at expanding the corps of outstanding environmental leaders throughout the Global South by reducing the barriers to advanced environmental education and training, supporting them to return to their home regions with the comprehensive training needed for success, and fostering a network of these alumni leaders to advance the climate solutions necessary to safeguard local natural resources, advance their economies, and secure a sustainable future.

Application Requirements

Eligible candidates must possess primary citizenship from a country in the Global South, possess professional and/or academic experience relevant to climate solutions, and have substantively lived, academic, and/or professional experience. In addition to completing the regular application for all potential YSE master's students, candidates must also complete a supplemental application and participate in a virtual interview if requested.

Required supplemental materials:

- Two short-essay questions (450 words per question)
 1. Please describe your goals for your time at YSE and how realizing these goals will prepare you to advance climate solutions in the Global South.

2. Given that advancing climate change solutions in the Global South is a complex and multidisciplinary challenge, what aspect(s) are you most interested in working on and why?

- Sector, area, and job interest(s)
- One additional letter of recommendation specifically for the Three Cairns program

APPLICATION DEADLINE

December 8

Program Benefits and Resources

The program provides scholars with tuition and non-tuition resources. The program enables YSE to meet 100 percent of the demonstrated tuition need for qualified students from the Global South admitted as master's degree students through the Three Cairns Scholars Program. As Three Cairns Scholars, students also will have access to non-tuition resources, such as English-language support before arrival on campus, funding to support summer internships in their home countries, mentoring partnerships with YSE alumni, and career development opportunities and counseling that are designed to help ensure their success while at Yale and when they return to their home countries and regions.

Upon graduation from YSE, Three Cairns Scholars will also be eligible to receive \$10,000-per-year stipends for two years to help support their return to their home countries and regions to engage in environmental work.

Graduation Requirements

Award recipients will be required to:

- complete a traditional two-year or joint degree M.E.M., M.F., M.E.Sc., or M.F.S. program (students completing the fifth-year M.E.M. program are not eligible),
- complete internships or research projects focused on building practical experience in climate solutions,
- contribute to fostering inter-cohort community by helping to recruit prospective students, including participating in admission events and engaging with potential candidates, and
- articulate a plan for returning to their home region upon successfully completing the full-time master's program to work in a field related to climate solutions.

ADMISSIONS: DOCTORAL DEGREE PROGRAM

The doctoral program is designed to develop the broad knowledge, analytical powers, technical skills, and creative thinking demanded of leaders in environmental and natural resources disciplines. Applicants should hold a bachelor's or master's degree in a field related to their intended program of study as expressed in the application.

APPLICATION PROCEDURES

The Doctor of Philosophy (Ph.D.) degree is administered jointly by the Yale School of the Environment and the Yale Graduate School of Arts and Sciences.

Applications for the Ph.D. program can be obtained from the website of the Yale Graduate School of Arts and Sciences at <https://gsas.yale.edu/admission>. The application deadline for the Ph.D. program is January 2, 2024. Doctoral education involves a close pairing between the student and a faculty adviser. Before applying to the doctoral program, applicants must identify and contact one or two faculty members who would serve as their major adviser if accepted to the program.

The Graduate Record Examination (GRE) General Test is optional. Applicants should ask their prospective advisers whether or not they wish to see the scores. For more information on the GRE, visit www.ets.org/gre. The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is not English. This requirement is waived only for applicants who, prior to matriculation at Yale, will have received a baccalaureate degree or its international equivalent from a college or university where English is the primary language of instruction. The applicant must have studied in residence at the baccalaureate institution for at least three years to receive a waiver. If you do not qualify for a waiver but have taken the TOEFL within the past two years, you will need to have your TOEFL scores released to the Yale Graduate School of Arts and Sciences (code 3987). The International English Language Testing System (IELTS) may be substituted for the TOEFL. For more information and the latest updates on the TOEFL and IELTS, visit www.ets.org/toefl and www.ielts.org.

TUITION, FEES, AND OTHER EXPENSES

Master's Program Tuition and Fees

The 2023–2024 tuition for master's degrees (M.E.M., M.F.S., M.E.Sc., and M.F.) is \$49,500. Tuition for special students is based on the number of courses taken. The School reserves the right to revise tuition as it deems appropriate. Tuition does not include hospitalization/specialty insurance as required by the University, or materials fees charged by other schools and departments in the University.

Two-year master's students must pay full tuition for two years, regardless of the number of courses taken.

For 2023–2024, a single student should also anticipate for the nine-month academic year estimated expenses of \$500 for books, course materials, supplies, and equipment; \$1,575 for transportation; \$2,894 for medical insurance; \$14,552 for living expenses; \$4,423 for personal expenses; \$375 for the mandatory Student Activity Fee; and \$135 for the mandatory Student IT Fee.

Ph.D. Program Tuition and Fees

The 2023–2024 tuition for the Ph.D. program is \$48,300. Most doctoral students receive a School fellowship that covers the cost of their tuition and provides a 12-month stipend for the first five years of their program. For 2023–2024, the stipend is \$40,530. Doctoral students must pay a nominal continuous registration fee (CRF) for no more than three years thereafter. The continuous registration fee is \$790 per term.

Registration

All students in the master's programs must register for courses using the online registration system (the Yale Hub, <https://yub.yale.edu>) within the registration period for the fall and spring terms. If a student withdraws from a course by midterm, then the transcript does not show that the student has been enrolled in the course. If a student withdraws from a course after midterm but before the first day of reading period (whether or not that particular course observes reading period), the transcript records the course and shows the designation "W" (Withdrawn). International students should be aware that their visa status requires them to maintain 12 credits per term, with the exception of their last term at YSE. See the academic calendar for specific dates.

International students are required to complete a nonacademic registration at the Office of International Students and Scholars prior to their regular academic registration.

Tuition Fees for Special Students

The tuition charge for special students is 25 percent of tuition for one course, 50 percent for two courses, 75 percent for three courses, and full tuition for four or more courses for each term of attendance.

Continuous Registration

Master's degree students who wish to pursue their research through a six-month or one-year internship are permitted to do so and are considered enrolled on a full-time basis (student is entitled to continue membership in Yale Health and defer student loans). Upon return, the student will be enrolled as a full-time student and pay tuition for the period needed to complete the degree requirements. Students can not register for regular course work, or work as a teaching assistant, while on continuous registration status. The fee for continuous registration is \$3,250 per term. Students are permitted to be on continuous registration for a maximum of two terms.

Tuition Deposit

Upon acceptance of admission, a deposit of \$500 payable directly to the Yale School of the Environment is required to hold a place in the entering class. If a decision is made not to matriculate, the deposit will not be refunded.

Tuition Rebate and Financial Aid Refund Policy

On the basis of the federal regulations governing the return of federal student aid (Title IV) funds for withdrawn students, the rebate and refund of tuition are subject to the following policy.

1. For purposes of determining the refund of Title IV funds, any student who withdraws from the School of the Environment 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 2023–2024, the last days for refunding Title IV funds will be November 7, 2023, in the fall term and March 31, 2024, 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: September 10, 2023, in the fall term and January 26, 2024, 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: September 26, 2023, in the fall term and February 10, 2024, 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 a term but on or before the day of midterm: October 23, 2023, in the fall term and March 5, 2024, 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, funds will be returned in the order prescribed by federal regulations; namely, first to Federal Direct Unsubsidized Loans, if any; then to Federal Direct Graduate PLUS Loans; next to any other federal, state, private, or institutional scholarships and loans; and, finally, any remaining balance to the student.
5. Recipients of federal and/or institutional loans who withdraw are required to have an exit interview before leaving Yale. Students leaving Yale receive instructions on completing this process from Yale Student Financial Services.

Student Accounts and Billing

Student accounts, billing, and related services are administered through the Office of Student Accounts, which is located at 246 Church Street. The office's website is <http://student-accounts.yale.edu>.

The Student Account is a record of all the direct charges for a student's Yale education such as tuition, room, board, fees, and other academically related items assessed by offices throughout the University. It is also a record of all payments, financial aid, and other credits applied toward these charges.

Students and student-designated proxies can view all activity posted to their Student Account in real time through the University's online billing and payment system, YalePay (<https://student-accounts.yale.edu/yalepay>). At the beginning of each month, email reminders to log in to YalePay to review the Student Account activity are sent to all students at their official Yale email address and to all student-designated YalePay proxies. Payment is due by 4 p.m. Eastern Time on the last day of the month.

Yale does not mail paper bills or generate monthly statements. Students and their authorized proxies can generate their own account statements in YalePay in pdf form to print or save. The statements can be generated by term or for a date range and can be submitted to employers, 401K plans, 529/College Savings Plans, scholarship agencies, or other organizations for documentation of the charges.

Students can grant others proxy access to YalePay to view student account activity, set up payment plans, and make online payments. For more information, see [Proxy Access and Authorization](https://student-accounts.yale.edu/understanding-your-bill/your-student-account) (<https://student-accounts.yale.edu/understanding-your-bill/your-student-account>).

The Office of Student Accounts will impose late fees of \$125 per month (up to a total of \$375 per term) if any part of the term bill, less Yale-administered loans and scholarships that have been applied for on a timely basis, is not paid when due. Students who have not paid their student account term charges by the due date will also be placed on Financial Hold. The hold will remain until the term charges have been paid in full. While on Financial Hold, the University will not fulfill requests for transcripts or provide diplomas and reserves the right to withhold registration or withdraw the student for financial reasons.

PAYMENT OPTIONS

There are a variety of options offered for making payments toward a student's Student Account. Please note:

- All bills must be paid in U.S. currency.
- Yale does *not* accept credit or debit cards for Student Account payments.
- Payments made to a Student Account in excess of the balance due (net of pending financial aid credits) are not allowed on the Student Account. Yale reserves the right to return any overpayments.

Online Payments through YalePay

Yale's recommended method of payment is online through YalePay (<https://student-accounts.yale.edu/yalepay>). Online payments are easy and convenient and can be made by anyone with a U.S. checking or savings account. There is no charge to use this service. Bank information is password-protected and secure, and there is a printable confirmation receipt. Payments are immediately posted to the Student Account, which allows students to make payments at any time up to 4 p.m. Eastern Time on the due date of the bill, from any location, and avoid late fees.

For those who choose to pay by check, a remittance advice and mailing instructions are available on YalePay. Checks should be made payable to Yale University, in U.S. dollars, and drawn on a U.S. bank. To avoid late fees, please allow for adequate mailing time to ensure that payment is received by 4 p.m. Eastern Time on the due date.

Cash and check payments are also accepted at the Office of Student Accounts, located at 246 Church Street. The Cashier's Office is open Monday through Friday from 8:30 a.m. to 4:30 p.m.

Yale University partners with Flywire, a leading provider of international payment solutions, to provide a fast and secure way to make international payments to a Student Account within YalePay. Students and authorized proxies can initiate international payments from the Make Payment tab in YalePay by selecting "International Payment via Flywire" as the payment method, and then selecting the country from which payment will be made to see available payment methods. International payment via Flywire allows students and authorized proxies to save on bank fees and exchange rates, track the payment online from start to finish, and have access to 24/7 multilingual customer support. For more information on making international payments via Flywire, see International Payments Made Easy at <https://student-accounts.yale.edu/yalepay>.

A processing charge of \$25 will be assessed for payments rejected for any reason by the bank on which they were drawn. In addition, for every returned ACH payment due to insufficient funds made through YalePay, Flywire will charge a penalty fee of \$30 per occurrence. Furthermore, the following penalties may apply if a payment is rejected:

1. If the payment was for a term bill, late fees of \$125 per month will be charged for the period the bill was unpaid, as noted above.
2. If the payment was for a term bill to permit registration, the student's registration may be revoked.

3. If the payment was given to settle an unpaid balance in order to receive a diploma, the University may refer the account to an attorney for collection.

YALE PAYMENT PLAN

A Yale Payment Plan provides parents and students with the option to pay education expenses monthly. It is designed to relieve the pressure of lump-sum payments by allowing families to spread payments over a period of months without incurring any interest charges. Participation is optional and elected on a term basis. The cost to sign up is \$50 per term.

Depending on the date of enrollment, students may be eligible for up to five installments for the fall and spring terms. Payment Plan installments will be automatically deducted on the 5th of each month from the bank account specified when enrolling in the plan. For enrollment deadlines and additional details concerning the Yale Payment Plan, see <https://student-accounts.yale.edu/yppl>.

BILL PAYMENT AND PENDING MILITARY BENEFITS

Yale will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other facilities, or the requirement that a student borrow additional funds, on any student because of the student's inability to meet their financial obligations to the institution, when the delay is due to the delayed disbursement of funding from VA under chapter 31 or 33.

Yale will permit a student to attend or participate in their course of education during the period beginning on the date on which the student provides to Yale a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 and ending on the earlier of the following dates: (1) the date on which payment from VA is made to Yale; (2) ninety days after the date Yale certifies tuition and fees following the receipt of the certificate of eligibility.

Interruption or Temporary Suspension of University Services or Programs

Certain events that are beyond the University's control may cause or require the interruption or temporary suspension of some or all services and programs customarily furnished by the University. These events include, but are not limited to, epidemics or other public health emergencies; storms, floods, earthquakes, or other natural disasters; war, terrorism, rioting, or other acts of violence; loss of power, water, or other utility services; and strikes, work stoppages, or job actions. In the face of such events, the University may, at its sole discretion, provide substitute services and programs, suspend services and programs, or issue appropriate refunds. Such decisions shall be made at the sole discretion of the University.

Master's Program Financial Aid

POLICIES AND PROCEDURES

In general, students must apply for financial aid in order to be considered for a YSE scholarship. Since financial aid awards are based primarily on financial need, information about student finances that is not available in the application for admission

is required. YSE is need-blind. Therefore, applying for financial aid and having financial need in no way affect the decision to offer admission.

The deadline for prospective students to apply for need-based financial aid is February 1. If that deadline is missed, the student will not be considered for need-based financial aid. This can be a costly oversight, as what is received in the second year is generally the same as what is received in the first year. The deadline for current students to apply for financial aid is March 31.

If a student is a U.S. citizen or permanent resident, three forms must be submitted, the YSE Financial Aid Application, the Free Application for Federal Student Aid (FAFSA), and the CSS Profile. If a student is an international student, two forms must be submitted, the YSE Financial Aid Application and the CSS Profile. Students must reapply for financial aid for the second year, although the amount of the YSE scholarship in most cases will remain the same as in the first year.

A limited number of merit-based scholarships are available, for which no separate financial aid application is required. Examples include merit awards to the top applicants to the Master of Environmental Science and Master of Forest Science programs and the Paul D. Coverdell Fellowships for qualifying Returned Peace Corps Volunteers.

YSE scholarships, work study, and federal loans (Direct Stafford and Grad PLUS) are available to U.S. citizens and permanent residents. YSE scholarships, work study, and Yale International Loans are available to international students.

The primary factor in determining the amount of a need-based YSE scholarship is financial need as determined by the review of the student's (and spouse's, if applicable) income and assets and any third-party funding that the student expects to receive. Merit is a secondary factor.

Students are considered to be financially independent of their parents. Therefore, information about parent income and assets is not required. Students have the option of providing that information, which may yield a higher need-based scholarship award. On the other hand, students must report any direct financial support that they expect to receive from their parents, such as money for tuition or rent.

Approximately three-quarters of YSE students receive scholarships in any given year from an annual scholarship budget in excess of \$6 million.

Satisfactory Academic Progress

To be eligible for financial aid, a student must be making Satisfactory Academic Progress (SAP) in the degree program. Financial aid includes all federal student aid funds (Federal Direct Stafford Loan, Federal Direct Grad PLUS Loan, and/or Federal Work Study) as well as institutional funds. For a complete explanation of the YSE SAP policy, please see the YSE Student Handbook, chapter Rules & Regulations, section Academic Regulations and Policies.

Less Than Half-Time Enrollment, Including Continuous Registration

Students enrolled less than half-time (i.e., for less than 6 credits in a term) and students who are not actively working toward a degree, such as those in continuous registration status, are not eligible for federal or institutional financial aid. Furthermore, financial aid awards are based on an assumption of full-time enrollment and will be revised proportionately should a student choose to enroll less than full-time. Students considering enrolling less than full-time should first consult with the registrar and the associate director of financial aid to understand the academic and financial consequences, respectively, of that decision.

Joint-Degree Students

In most joint-degree programs, students split their time between the two joint schools, spending one and one-half years at each school for a total program length of three years.

Each school at Yale is financially independent, which means that the financial aid award a student receives at one school is not transferable to the joint school. The joint-degree student should follow the financial aid application procedures of the school to which the student will be paying tuition. If the student is paying tuition at YSE, the student should apply for financial aid through YSE. If the student is paying tuition at the joint school, the student should apply for financial aid through that school.

If the joint-degree student is applying for admission to two schools simultaneously, the student should apply for financial aid at both schools, also simultaneously.

Fifth-Year Students

During their senior year at Yale College, students may apply for admission to the YSE Five-Year Program. These students sometimes defer their enrollment in the YSE master's program for a year of outside volunteer work or employment. To be considered for financial aid for their enrollment at YSE, these students must submit their financial aid application materials by the February 1 deadline prior to their matriculation into the program. This could mean that the student submits the financial aid application materials during the student's deferral or "gap" year. It is the student's responsibility to submit all documents by the February 1 deadline.

Scholarships

Most of the School's scholarship budget is funded by private donors. Scholarship recipients are automatically considered for all named scholarships. The named scholarships listed below are *not* in addition to any generic scholarship a student receives in the financial aid award notification but may be matched to a scholarship recipient once the student matriculates.

The School is delighted to recognize the generosity of the donors who have helped make the following scholarships possible:

Adelaide Hixon Scholarship
Alan N. Mann (1908) Memorial Fellowship
Andrew Sabin International Environmental Fellowship
Anne Armstrong-Colaccino Scholarship
Bataua Scholarship
Beinecke/YSE Scholarships
Berkley Scholarship
Boyd Evison Scholarship Fund
Burt-Pfeiffer Fund
Cameron and Gus Speth Scholarship
Carl F. Norden Family Scholarship
Carl W. Knobloch, Jr. Fellowship
Charles Boughton Wood Fund
Charles Chacey Kuehn (M.F. 1934) Fund
Charles F. Wilson (B.A. 1939) Memorial Fund
Charles W. Goodyear Memorial Fund
Class of 1980 Scholarship
Coleman P. Burke Scholarship
Crane Family Scholarship
Crown Zellerbach Foundation Fund
David and Karen Sobotka Joint YSE-SOM Scholarship
David M. Smith, Morris K. Jesup Professor of Silviculture Scholarship
Dorothy S. McCluskey Scholarship
Drs. Poh Shien and Judy Young International Scholarship
Edith and Johannes Frondt Scholarship
Enid Storm Dwyer Scholarship
Environmental Scholars Fund
Flora and John Berbee Scholarship Fund
Forestry YAF Scholarship Fund
Frank & Lynne Wisneski YSE Scholarship
Fred Krupp Scholarship in Environmental Studies
Frederick V. Ernst (1960) Gift Fund

George Brett Memorial Fund

Gillian and Stuart W. Staley '95 M.P.P.M., '95 M.E.S. Scholarship

Gilman Ordway (B.A. 1947) Family Scholarship

Gonzalez Family Scholarship

H. Stuart Harrison (B.A. 1932) Fellowship

Heather L. Ross and Edward L. Strohbehn, Jr. Scholarship

Hubert Coffing Williams (Ph.D. 1906, M.F. 1908)

Jacqueline C. and John P. Hullar Scholarship

James Lippincott Goodwin (B.A. 1905, M.F. 1910)

Jiang, Kevin '21 MESc Memorial Scholarship

John A. MacLean '27S Scholarship

John and Catha Hesse Fund

John M. Musser Fellowship

John S. Griswold (B.A. 1937) Scholarship

Jonah Meadows Adels Memorial Scholarship

Joseph H. Williams Scholarship

Joseph Hixon YSE Scholarship

Katharine Preston Scholarship

Kroon Environmental Studies Scholarship

Kushok Bakula Rimpoche Scholarship

Leadership Scholars Fund

Leah Hair Scholarship

Leland H. Burt ('30 B.S.) Endowed Scholarship

Leonard G. Carpenter (B.A. 1924) Scholarship

Marvin Klemme (M.F. 1935) Fellowship

MK McCarthy-RW Worth Scholarship (Leadership in Conservation Science Scholarship)

Mr. and Mrs. James Wiley Endowed Scholarship for Conservation Biology

Nelson C. Brown (B.A. 1906, M.F. 1908) Scholarship

Obernauer Family Scholarship

Parklands Scholarship

Paul Douglas Camp Memorial Scholarship

Peggy King Memorial Scholarship
PETAL Foundation Scholarship
Philip Laurance Buttrick (M.F. 1911) Scholarship
Polayes Scholarship
Preston R. Miller, Jr. '71 YSE Scholarship
Ralph C. Schmidt and Susan M. Babcock Scholarship
Ray L. Wilson Scholarship
Robert Charles Rooke, Jr. Broad Arrow Scholarship Fund
Robert Charles Rooke, Jr. Broad Arrow Scholarship Fund
Robert H. Kuehn, Jr. '64 B.A., '68 M.U.S., '68 M.Arch. Scholarship
Rockefeller-Underhill Scholarship for Tropical Conservation
Rodney B. Wagner Class of 1954 International Scholarship
Sara Shallenberger Brown Scholarship
Simeone Entomology Scholarship
Stapleton Scholarship
Stephen and Betty Kahn Scholarship
Strachan and Vivian Donnelley Scholarship
Student Conservation Association Fellowship in honor of John R. Twiss '60
Ted Weyerhaeuser Scholarship Fund
The David and Karen Sobotka Joint YSE-Jackson Institute Fellowship
The di Bonaventura Family Scholarship
The LeBlanc '98 Family Scholarship Fund
Thomas McHenry Scholarship
Three Cairns Scholarship
Trammell S. Crow (1974) Scholarship
Urey Lisiansky Scholarship Fund
Vira I. Heinz Endowment Scholarship
William D. Waxter III Fellowship
William Egbert Wheeler Fund
William Henry Sage Memorial Fund
Yale Club of New Haven

YSE Alumni Association Board Scholarship

YSE Class of 2005 Laurie B Cuoco Memorial Scholarship Fund

Employment Opportunities

YSE work study These positions vary from clerical to research to editorial work. Eligible students must have financial need, as confirmed by the YSE Office of Admissions and Financial Aid. Applications are available on the Yale Student Employment Office website (www.yalestudentjobs.org) beginning in August. The pay rate is fixed at \$15.75 per hour. At least eighty positions are available annually and only to students with a YSE affiliation.

Regular student jobs Financial need is not required. Applications are available on the Yale Student Employment Office website (<https://yalestudentjobs.org>) beginning in August. Pay rates begin at \$14.25 per hour. At least forty positions are available annually.

Teaching fellowships and research assistantships Financial need is not required. Interested students should contact centers, departments, professors, and programs directly beginning in late spring or summer. Pay rates are either \$4,000 or \$8,000 per term, depending on the effort level and hours worked. At least thirty positions are available annually.

Community service jobs Eligible students must be U.S. citizens or permanent residents and have financial need, as confirmed by the YSE Office of Admissions and Financial Aid. Applications are available on the Yale Student Employment Office website beginning in August. Pay rates begin at \$14.25 per hour. At least one hundred positions are available annually to students across the University.

Other on-campus jobs Financial need is not required. Applications are available on the Yale Student Employment Office website beginning in August. Pay rates begin at \$14.25 per hour. At least four hundred positions are available annually to students across the University.

Loans

Federal Direct Stafford Loan (U.S. citizens and permanent residents only) In general, the maximum annual loan amount is \$20,500 for interest rates and origination fees; for more information, visit www.studentaid.gov. There is no credit check required. The standard repayment term is ten years. A six-month grace period immediately follows separation from school or otherwise dropping below half-time enrollment status, at which time repayment is required. The loan is requested by completing and returning a loan request form available on the School's financial aid webpage, <https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans>. After initial processing, the loan will be assigned to a servicer contracted with the U.S. Department of Education, such as FedLoan, Great Lakes, Navient, or Nelnet.

Federal Direct Grad PLUS Loan (U.S. citizens and permanent residents only) In general, the maximum annual loan amount is the cost of attendance less all other resources. For interest rates and origination fees, visit www.studentaid.gov. A credit check is required. Repayment terms are similar to Federal Direct Stafford Loans. The loan is requested by completing and returning a loan request form available on the

School's financial aid webpage, <https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans>. After initial processing, the loan will be assigned to a servicer contracted with the U.S. Department of Education, such as FedLoan, Great Lakes, Navient, or Nelnet.

Yale International Loan (international students only) In general, the maximum annual loan amount is \$30,000 or the cost of attendance less all other resources, whichever is less. The interest rate is fixed at 7.75% with an origination fee of 5%. There is no credit check required. Repayment terms are similar to Federal Direct Stafford Loans. The loan is requested by completing and returning a loan request form and self-certification form available on the School's financial aid webpage, <https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans>, and YaleHub. The Yale Student Loan Accounting and Collection Office is responsible for the management and collection of the loan.

Private education loan (U.S. citizens and permanent residents as primary borrowers or co-borrowers only) In general, the maximum annual loan amount is the cost of attendance less all other resources. The interest rate is fixed or variable and dependent on the credit rating of the primary borrower and co-borrower, if applicable. Origination fees range, repayment terms, and servicing are dependent on the lender. A credit check is required. The loan is requested by applying directly to a lender. A list of lenders from whom students have borrowed recently is available at www.elmselect.com/?schoolid=156#/results.

International Students—Certification of Finances for Visa

International students must certify full funding for their entire two-year course of study before visa documents can be issued. Instructions and forms are mailed after an admitted student accepts the offer of admission (deadline May 15). More information is available from Yale's Office of International Students and Scholars website, <https://oiss.yale.edu>.

Veterans

Eligible students are strongly encouraged to seek specific information about Veterans Administration (VA) benefits from their local Veterans Administration office by calling 800.827.1000 or visiting <https://benefits.va.gov/gibill>. The School also participates in the Yellow Ribbon Program, which covers the remaining tuition for qualifying Post-9/11 GI Bill students. The Director of Academic Affairs, in partnership with the associate director of financial aid, coordinates the administration of Veterans Administration benefits at YSE.

Institutional policy confirming compliance with 38 USC 3679

The Yale School of the Environment (YSE) permits any *covered* individual to attend or participate in the course of education during the period beginning on the date on which the individual provides to YSE a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' website or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to YSE.
2. Ninety days after the date that YSE certified tuition and fees following the receipt of the certificate of eligibility.

YSE will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a *covered* individual borrow additional funds, on any *covered* individual because of the individual's inability to meet his or her financial obligations to YSE due to the delayed disbursement funding from VA under chapter 31 or 33. NOTE: A *covered* individual is any individual who is entitled to educational assistance under chapter 31, Vocational Rehabilitation and Employment, or chapter 33, Post-9/11 GI Bill benefits.

LIFE AT THE SCHOOL OF THE ENVIRONMENT

Educational Facilities

Kroon Hall, the ultra-green home of the Yale School of the Environment, expresses in physical form the School's best traditions, values, and aspirations. The building, which opened in January 2009, achieves its remarkable energy savings from a host of design elements and technical strategies molded to fit the weather and climate of its New England location. Situated in the area of the University known as Science Hill, Kroon Hall is named for the family of benefactor and Yale College alumnus Richard Kroon, B.A. 1964. With its high barrel-vaulted gable ends, simple lines, and curved rooftop, Kroon Hall is a modernist blend of cathedral nave and Connecticut barn.

Kroon Hall provides office space for fifty faculty and staff members and has three classrooms. The 175-seat Burke Auditorium is used for lectures and classes, and commands beautiful views of West Rock and the David S. Ingalls Rink across the street. The Knobloch Environment Center is meant for socializing, but students have also embraced it as a study space. The Ordway Learning Center on the ground floor also has ample space for quiet study. The \$43.5-million building was designed by Hopkins Architects of Great Britain in partnership with Connecticut-based Centerbrook Architects and Planners and holds the highest rating—platinum—in the green-building certification program, Leadership in Energy and Environmental Design (LEED). Kroon Hall provides 56,467 square feet and is designed to use 67 percent less energy than a typical building of its size. Its tall, thin shape and east-west orientation play a big role in heating and cooling. The lowest floor is set into a hillside, with only its south side exposed, providing thermal insulation, minimizing northern exposure, and increasing the amount of natural light that enters the building from adjacent courtyards. The south facade maximizes solar gain during the winter, and Douglas fir louvers covering glass facades on the east and west ends keep out unwanted heat and glare. The building's shape, combined with the glass facades, enables daylight to provide much of the interior's illumination. Light and occupancy sensors dim artificial lighting when it is not needed.

A 100-kilowatt rooftop array of photovoltaic panels is designed to provide 25 percent of the building's electricity. Four 1,500-foot-deep wells are designed to use the relatively constant 55° (F) temperature of underground water for heating and cooling, replacing the need for conventional boilers and air conditioning. Four solar panels embedded in the southern facade are designed to provide hot water. Exposed concrete walls and ceilings provide thermal stability by retaining heat in winter and cold in summer. Instead of air being forced through overhead ducts, an energy-saving displacement ventilation system moves warm and cool air through an air plenum and multiple diffusers in elevated floors. Low-velocity fans in the basement keep the air circulating throughout the building. In winter, the ventilation system also transfers the heat from exhaust to incoming fresh air; in summer, air handling units spray water on incoming fresh air, reducing its temperature by up to 18° through evaporation.

In mild weather, Kroon's occupants assist in the energy savings by opening windows in response to an electronic, color-coded prompt system. A pair of green and amber lights in each hallway indicate whether it's a "Green Day": i.e., when the green indicator light is on, the ventilation and cooling/heating systems shut down, and the windows should be opened for natural ventilation.

A rainwater-harvesting system channels water from the roof and grounds to a garden in the south courtyard, where aquatic plants filter out sediment and contaminants. The gray water, held in underground storage tanks, is used for irrigation and pumped back into Kroon for flushing toilets. The system is designed to save 300,000 gallons of potable city water annually and to reduce the burden on city sewers by lessening the amount of storm runoff. Half of Kroon Hall's red oak paneling—15,000 board feet—came from the 7,840-acre Yale-Myers Forest in northern Connecticut, which is managed by the School. The building's pale yellow exterior, composed of sandstone from Ohio, echoes other Yale buildings. The north and south courtyards were constructed to create a community among disparate buildings on Science Hill. The south courtyard, landscaped by Olin Studio of Philadelphia, is a raised platform, with a green roof of soil one-foot deep and surrounded by twenty-five varieties of native plantings. Underneath the courtyard is a service node, centralizing all trash and recycling pickups as well as deliveries for the southwest corner of Science Hill and accessible by a single driveway off Sachem Street.

Sage Hall, a four-story building located at 205 Prospect Street and a gift of William H. Sage, B.A. 1865, in memory of his son, DeWitt Linn Sage, B.A. 1897, was completed in 1923. Administrative, development, alumni, and program offices of the School are housed in Sage Hall, along with four classrooms. Sage Hall is home to a computer cluster with twenty-four computers for student use. Sage also houses a 490-square-foot student lounge, appointed with a large table and comfortable couches, which students use for studying, special events, and weekly social events. Bowers Auditorium is designed to handle large lectures and seminars as well as small group projects. Bowers, which has a seating capacity of one hundred with tables and chairs, was built onto Sage Hall in 1931 with funds provided by the bequest of Edward A. Bowers, B.A. 1879. In 2011 the original Bowers floor was replaced using beautiful red oak flooring harvested from Yale-Myers Forest, and in 2016 energy-efficient LED lights were installed.

Facilities for research and instruction in silviculture, natural resource and forest economics, forest policy, and biometry are in Marsh Hall at 360 Prospect Street in the Marsh Botanical Garden. A classroom, meeting space, kitchen, and accessible bathroom are available on the first floor. This large, four-story mansion was originally the residence of Professor Othniel C. Marsh, B.A. 1860, a distinguished paleontologist and Western explorer of the nineteenth century. He bequeathed the building to the University in 1899, and for twenty-five years it housed the entire Forest School. Marsh Hall was designated a National Historic Landmark by the United States Department of the Interior in 1965.

The William B. Greeley Memorial Laboratory at 370 Prospect Street, named in honor of William Buckhout Greeley, M.F. 1904, houses a recently renovated social space in the main lobby; laboratories for research into the ecology and management of landscapes and ecosystems, urban sustainability, the biology of trees, and environmental chemistry; and doctoral program spaces. The building was designed by renowned

architect Paul Rudolph and is a classic example of “Brutalist” architecture. Adjacent to the Greeley lab is a 3,800-square-foot greenhouse, which is used for hands-on learning and research. Greeley Laboratory and its greenhouse were built in 1959 with funds from the forest industries, the John A. Hartford Foundation, and other benefactors.

The Class of 1954 Environmental Science Center at 21 Sachem Street is dedicated to the Class of 1954 in honor of the \$70 million the class donated in 2000 to support new science buildings and other major University priorities. It is an interdisciplinary facility built by the University with the aim of further fostering leadership in teaching of and research in science and engineering. The building was designed to encourage collaboration among faculty and students pursuing environmental studies. Four natural science faculty members from YSE have their laboratories in the Environmental Science Center, which also houses research laboratories for the Yale Science Departments of Ecology and Evolutionary Biology, Earth and Planetary Sciences, and Anthropology as well as the Yale Institute for Biospheric Studies.

The restored former residences at 301 Prospect Street and 380 Edwards Street house the offices of many of the School’s programs, as well as doctoral student offices; each building has a classroom.

The mansion at 300 Prospect Street houses the School’s Admissions, Financial Aid, Communications, and Research offices.

Osborn Memorial Laboratories at the corner of Prospect Street and Sachem Street houses one YSE faculty member’s lab and office in addition to many other Yale laboratories.

YALE FORESTS AND THE QUIET CORNER INITIATIVE

North of New Haven, the Yale Forests Program manages 10,852 acres of forestland in Connecticut, New Hampshire, and Vermont that are part of the Forest School at the Yale School of the Environment. The seven discrete forests, donated to the School between 1913 and 1986, range in size from the seventy-five-acre Crowell Ravine in Vermont to the 7,840-acre Yale-Myers Forest in northeast Connecticut. The composition of the Yale Forests reflects a latitudinal gradient ranging from a central hardwood cover type in Connecticut to a northern hardwood cover type in New Hampshire and Vermont, with extensive mixed-wood stands of pine and hemlock in both regions. The area encompassed by the forests includes almost all of the topographical and soil conditions, site classifications, and cover types found in New England.

The Yale Forests Program provides educational, research, and professional opportunities to the Yale community and beyond through a sustainably managed and ecologically sound working forest. Faculty and students use the Yale Forests as a laboratory for teaching, management, demonstration, and research. Students working at the Yale Forests receive training that covers aspects of hydrology and soils, taxonomy, forest and community ecology, silviculture, forest operations, forest finance and policy, and sociology in order to prepare them for careers as foresters and natural resource managers. Every summer ten to twelve students are chosen for the apprentice forester program at the Yale Forests, which includes hands-on training in maintenance of infrastructure, property boundary research and delineation, geographic information systems (GIS), mapping and classification, sampling and inventory, managing forest

operations, and the design and implementation of silvicultural prescriptions. Several students from the apprentice program are selected to work for the Yale Forests Program the following academic year as assistant forest managers, where they receive additional training in forest administration and management.

Research performed at the Yale Forests is conducted under the supervision of faculty members of the School and by academic institutions across the region and encompasses a broad range of topics that include forest ecology, silviculture, aquatic and wildlife community ecology, hydrology, and economic, legal, and social studies. The forest is used for both doctoral and master's student research, the latter performed either as an independent project or in conjunction with student involvement with existing forest management. The forests also serve as a platform for collaborative research with other universities. Many breakthroughs in human understanding of ecological function began with research conducted at the Yale Forests.

The Yale Forests are used for both academic field trips and workshops held for professional or community organizations. Field trip and workshop topics are wide-ranging and include silviculture and forest dynamics, hydrology, wildlife habitat, carbon dynamics, and forest management.

Faculty and staff oversee management of the forests in partnership with three postgraduate fellows. Graduate professional students working as management fellows or coordinators carry out the bulk of the on-the-ground management. The forests are maintained as working forests, and outputs of management include commercial timber and non-timber forest products. The Yale-Myers Forest is the largest and most actively utilized parcel managed by the Yale Forests Program and is certified by the Forest Stewardship Council. Facilities at Yale-Myers Forest include 8,000 total square feet of living space within five buildings, including rustic bunkhouses that accommodate forty-eight, a classroom and library, kitchen and dining hall, communal living space, a research lab, and an open-air pavilion.

The Quiet Corner Initiative (QCI) engages with the communities and working landscape that surround Yale-Myers Forest. QCI works by developing programs that connect master's-level courses and University research to real environmental assessment and management challenges on private lands surrounding the forest. Current programs focus on forest and open space conservation and management; watersheds and rivers; renewable energy; and sustainable agriculture. The initiative seeks to advance three separate but related sets of goals: (1) to enrich the applied curriculum for professional students at the School of the Environment, providing reliable and consistent opportunities to bring learned skills to tangible problems that are in easy reach of the classroom and that contribute to a vibrant rural economy based on sustainable natural resource management; (2) to provide and cultivate a high-quality natural and social science research environment for students and faculty to investigate and analyze the drivers of environmental change and adaptive management at a landscape scale; and (3) to leverage the traditional strengths of Yale University in research, education, and leadership in working toward landscape-scale sustainability goals in our own backyard.

In addition to the forestland managed by the Yale Forests Program, close working relationships exist with non-Yale forests that faculty and students use for education and research. Yale has a long history of collaboration with the 6,800-acre Great Mountain

Forest in northwestern Connecticut. The program manages the Yale Camp there, on about eight acres deeded to Yale in 1940 by Edward C. Childs, 1928 B.A., 1932 M.F., and his family. The camp can accommodate fifty-four visitors overnight in the main lodge, four cabins, and a director's cottage. Sleeping tents in two large fields can accommodate visitors as well. The camp is mostly used by MODs, with sixty-five people visiting each week. It is powered by a new ground-based solar array. The kitchen in the main lodge is a communal kitchen licensed by the State of Connecticut.

Additionally, the 20,000-acre forestland owned and managed by the South Central Connecticut Regional Water Authority in New Haven County is one of the oldest managed forests in the western hemisphere and easily accessible from Yale's campus. Connecticut state forests and Yale's long history with the Connecticut Forest & Park Association serve as resources for student and faculty engagement as well.

LIBRARY COLLECTION

YSE students have access to the enormous holdings of the Yale University Library (YUL), which comprises fifteen million print and electronic volumes in more than a dozen different libraries and locations. The YUL is committed to acquiring whatever books and journals are needed to support Yale's teaching and research activities. The bulk of YSE materials are located online and in the Marx Science and Social Science Library, while smaller, more specialized collections, such as the Henry Solon Graves Papers and the Rachel Carson Papers, are housed in Manuscripts and Archives (in Sterling Memorial Library) and the Beinecke Rare Book and Manuscript Library. The librarian for environmental studies has an office in Marx Library (Rm. C44) and is available most weekday hours to provide assistance to students. Reference and information services are provided by experienced staff in the Marx Library. For electronic retrieval, the library has a network of databases accessible via its website, covering general environmental topics as well as the specific subject areas of forestry, soils, fish and wildlife, and water resources. Overall, Yale University Library subscribes to more than one thousand databases. Library resources outside of Yale are accessed through the Borrow Direct service as well as Interlibrary Loan. The YUL supports both EndNote and Zotero bibliographic data management tools, and the librarian for environmental studies provides instruction in both.

The YSE Library Research Guide is located at <https://guides.library.yale.edu/yse>. There are links to Orbis, Yale's main online catalog; direct links to several of the most frequently used bibliographic databases, such as BIOSIS, Web of Science, ProQuest Natural Science Collection, Environment Complete, and CAB Direct; and information ranging from instruction opportunities to online full-text journals. In-house bibliographic instruction begins during MODs and continues throughout the term. Notification of tours and group instruction sessions is posted via email; students may also contact the librarian directly (203.432.5912) to set up an individual session.

For additional information, please visit <https://web.library.yale.edu>.

COMPUTER RESOURCES

The mission of the YSE Information Technology Department (YSE-IT) is to support all aspects of computing for every member of the Yale School of the Environment community. We use and support multiple platforms, including Windows and Macintosh operating systems. Students are strongly encouraged, but not required, to

bring their own computers. Admitted students may contact the YSE-IT Helpdesk by emailing helpdesk.yse@yale.edu for advice on the selection of appropriate hardware and software. We strongly encourage the purchase of Apple Macbook Pro or Lenovo ThinkPad (T or X series) laptop computers. A robust campus network provides wireless access within all YSE buildings and throughout the Yale campus.

YSE-IT and trained student technicians from Yale's Student Technology Collaborative provide drop-in technical support for students to assist with any academic or research computer needs they may have while on campus. Weekend and after-hours student support is also available at Bass Library, within easy walking distance of the School. YSE-IT provides secure, centralized backup services for all YSE faculty, staff, and students, as well as a YSE-provisioned Dropbox account.

YSE-IT maintains a computer lab in Sage Hall, Rm. 39, with sixteen computer workstations that feature dual 24-inch displays, 3 GHz Intel i5 (quad-core) and 2.2 Xeon (10-core) processors, and at least 16 GB of RAM that were updated in the summer of 2018. The lab also features four 27-inch high-definition monitors for students who would like to utilize their own laptops.

The computer lab houses a multifunction copy/scan/fax/print device. Additional wireless student printing is available in each YSE building and throughout the Yale campus via the BluePrint (PaperCut) Printing System. Three-dimensional and wide-format printing is also available at the Yale Center for Engineering Innovation & Design (CEID) and the Yale School of Architecture.

YSE-IT maintains an inventory of equipment that students may borrow for short periods of time through an online equipment checkout system (<https://reservations.yale.edu/yse>). Equipment may be borrowed at no charge (late and replacement fees apply if equipment is returned late, lost, or damaged). Included are iPads, GPS units, digital cameras, walkie-talkies, compact audio recorders, and other equipment.

The Yale University Library is also very active in the integration of information resources in digital format. Students and faculty have online access to an extensive variety of journals and databases as well as innovative research resources such as the Digital Humanities Lab (<https://dhlabs.yale.edu>).

The Marx Science and Social Science Library (<https://marx.library.yale.edu>) offers an array of digital media technologies and operates several important digital resources, including the Statistical Classroom ("StatLab"), featuring thirty machines with dual monitors, and a variety of software and databases, such as a Bloomberg Terminal. The Marx Library is also home to a full-time GIS librarian who assists students in obtaining and working with GIS datasets to support their work in any part of the globe, and to a data librarian who is available for questions or consultation about finding, using, and managing research data in the sciences and social sciences.

Faculty members have also developed many special computer applications for their projects, and some of these are available for student use in the Sage Hall computer lab.

Communications

The Office of Communications promotes the work of the Yale School of the Environment, sharing stories about its innovativeness and excellence in teaching and scholarship to a wide range of audiences. We also provide a variety of services to members of the community to help them more effectively tell their own stories.

We aim to strengthen the understanding of and deepen the discourse on environmental issues, inform the public about the ways the School is contributing to achieving a more sustainable future, and encourage the integration of those issues into strategies for business, international development, government, and nongovernmental organizations.

The communications team publicizes original research by our faculty, fellows, and students through traditional and digital media.

School news, including School-sponsored events, alumni profiles, and other community updates are regularly published on YSE's website, (<https://environment.yale.edu>) and distributed through our newsletter YSE 3, (<https://yse.to/subscribe>) and on our social media platforms, including Facebook (<https://www.facebook.com/YaleEnvironment>), Twitter (<https://twitter.com/YaleEnvironment>), Instagram (<https://www.instagram.com/environmentyale>), and LinkedIn (<https://www.linkedin.com/school/environmentyale>).

The communications office publishes *Canopy* magazine in print and online, (<https://environment.yale.edu/canopy>), which showcases how the YSE community—including its highly engaged alumni network—is providing innovative leadership in addressing environmental challenges across the planet. It also publishes the annual report, which highlights the progress the School has made in achieving the goals defined in its Strategic Plan and the many ways the YSE community is working to address today's urgent environmental challenges.

Other communication platforms at YSE include:

- *Yale Environment 360* (<https://e360.yale.edu>) features reporting, analysis, and opinion on global environmental issues from leading writers, scientists, policy makers, and journalists in the field. Launched in 2008, this online magazine has established a broad global audience and received numerous awards and honors.
- *Sage Magazine* (<https://sagemagazine.org>) is a student-run environmental arts and journalism publication. Through creative and informative journalism, *Sage* seeks to expand popular notions of environmentalism and bring depth and focus to the debate around pressing environmental issues.
- *Yale Environment Review* (<https://environment-review.yale.edu>) is a student-run online publication that provides concise summaries of peer-reviewed research from around the world, with a focus on topics of general interest to those engaged in environmental and natural resource management.
- The annual Environmental Film Festival at Yale (<https://effy.yale.edu>), held each spring in New Haven, is one of America's premier student-run environmental film festivals.
- Reports and newsletters from the School's centers and programs, listed online at <https://environment.yale.edu/research/centers>.

RECORDING POLICY ACKNOWLEDGMENT

In order to capture the breadth of activities that occur at YSE—and integrate the expertise of our faculty, students, and visitors into the broader environmental dialogue—Yale University frequently photographs, videotapes, and/or records events, lectures, and activities (including during alumni events) at YSE. By attending and/or participating in classes and in other YSE and University activities, those in attendance agree to the University’s use and distribution of their image and/or voice in photographs, audio, and video capture, or in electronic reproductions of such classes and activities. These images, recordings, or excerpts may be included, for example, in Yale University websites, publications, and online courses, and otherwise used to support the University’s mission.

Student Organizations

The School has many student-run interest groups. Current student interest groups include:

- Africa SIG
- Birding SIG
- Carbon Removal SIG
- Climate Change
- ConBio (Society for Conservation Biology)
- DocComm (Ph.D. Advisory Committee)
- Economic Considerations of Nature (ECON)
- Energy SIG (ESIG)
- Empowerment Through Movement
- Environmental Data Science at Yale (EDSY)
- Environmental Justice at Yale (EJAY)
- Fire SIG
- First-Generation, Low-Income (FGLI)
- FOOD (FKA CAFÉ)
- Fresh & Salty (Water SIG)
- Green Chemistry SIG
- GROUNDED
- Industrial Ecology and Environmental Management (IEME)
- International SIG
- International Society of Tropical Foresters student chapter
- Latin American SIG (LA SIG)
- Middle Eastern and North African SIG (MENA)
- Out in the Woods (OIW)
- Outdoor Rec Industry SIG
- Political Ecology SIG
- Resilience, Adaptation, & Disaster SIG
- Roots

- SAGE Magazine
- SCOPE SIG
- Society for Ecological Restoration (SER)
- Sustainable Development in Latin America and the Caribbean (SDLAC)
- Sustainable Fashion SIG (SFAY)
- Sustainable Finance
- URBAN Environment
- Westies
- Woodworking SIG
- Yale Environment Women (YEW)
- Yale Environmental Law Association (YELA)
- Yale Ethnobotany and Mycology Society (YEMS)
- Yale Temperate Forestry

The activities of these groups include sponsoring guest and student lectures, organizing field trips, sponsoring workshops, organizing social events, holding conferences, and interacting with regional divisions of their respective societies. If a student is interested in starting a new SIG they should contact SAC and the Office of Student Affairs at studentaffairs.yse@yale.edu.

Funding for Master's Student Projects and Activities

Master's students often seek funding for research, professional activities, and social events. Sometimes the request is for an individual activity, sometimes it is on behalf of a group. Students can apply to several funds at Yale University and the Yale School of the Environment. The following are some of the more useful opportunities:

- Master's Student Travel Fund to support attendance at a conference or symposium for networking.
- The Carpenter-Sperry Fund for attendance at a conference or symposium at which a student is giving a research talk.
- MacMillan Center for International and Area Studies, which can help bring international visitors to Yale for a lecture or a conference.
- Student Affairs Committee (SAC), which supports activities by our many student interest groups (SIGs).
- YSE Community Events Fund, administered by the Dean's Office, which supports student events and conferences.
- Class of '80 Student Project Fund, administered by the School's Office of Development and Alumni Services, to enrich the quality of life of the student body.
- Graduate Student Assembly Conference Travel Fund which awards travel funds to graduate students.

Alumni Association

The YSE Alumni Association is led by an elected Alumni Association Board (AAB) of twenty to twenty five alumni who represent the School's more than 5,000 alumni around the world. The AAB meets monthly: in-person two times per year and remotely throughout the rest of the academic year, in addition to various committee meetings as needed. The AAB is supported by staff in the YSE Office of Development and Alumni Services.

AAB members lead a number of initiatives focused on alumni-to-alumni, alumni-to-student, and alumni-to-University engagement. The AAB supports and generates efforts around diversity, equity, and inclusion at the School and among alumni; organizes field-based learning programs, educational opportunities, and volunteer opportunities for alumni; and communicates with the alumni body.

The Alumni Association Board also oversees the annual AAB nominations/elections process as well as the selection of the Distinguished Alumni and Prospect Street award recipients named at Reunion weekend each year. The YSE Alumni Association Board Scholarship is awarded annually to two current students who demonstrate outstanding community engagement and volunteer leadership. Alumni events and e-newsletters, along with the YSE magazine *Canopy*, keep alumni throughout the world in touch with each other and the School.

The YSE Alumni Association is also affiliated with the Yale Alumni Association (YAA), which serves all alumni of Yale University.

Alumni may contact the Office of Development and Alumni Services at alumni.yse@yale.edu.

Office of Career and Professional Development

<http://environment.yale.edu/careers>

The Office of Career and Professional Development (CPD) seeks to inspire and prepare all students to pursue high-impact environmental careers aligned with their individual abilities, experience, and interests. Its mission is to proactively educate students to maximize their entire YSE experience for impactful careers and lives; cultivate strong relationships with leading domestic and international environmental employers; and support career-related initiatives across YSE.

The CPD's diverse resources, programs, and services enable users to develop key skills needed to present themselves professionally on the job market, develop and refine meaningful career goals, and chart a strategy for conducting effective job and internship searches. We work with students on an ongoing basis through individual advising appointments as well as through workshops conducted by staff and other career development and environmental professionals.

CAREER AND PROFESSIONAL DEVELOPMENT RESOURCES

Career Advising and Peer Advising

Through individual career advising appointments with our professional team, and drop-in hours with trained peer reviewers, students work with CPD on:

- General career advising (strategy, focus, vision)
- LinkedIn profile development and reviews
- Résumé reviews
- Cover letter reviews
- CV reviews
- Converting a CV to a résumé and converting a résumé to a CV
- Personal statement reviews for Ph.D. program and fellowship applications
- Networking advice at Yale and beyond
- Online tools orientation (YSE Next, LinkedIn, Yale Cross Campus, AlumniFire)
- Interview skills and preparation coaching
- Mock interviews
- Summer experience planning guidance and funding opportunities
- Salary negotiation strategies

YSE Next Online Career Development System

- Access more than 150 YSE-focused jobs and internships added each month
- Publish your résumé for review by alumni and employers
- Create job and internship alerts
- Apply directly online for jobs/internships of interest
- Schedule career counseling appointments
- RSVP for upcoming events
- Access exclusive career development resources

YSE Résumé

We work with students individually and through workshops to write and design a targeted professional résumé. We provide an official *YSE Résumé Template and Résumé Content, Style, and Format Guidelines*.

Workshops and Information Sessions

These programs are designed to guide students through phases of career readiness in line with internship, job, and further-study timelines. Sample programs:

- Building Your LinkedIn Profile
- Résumé Workshop with Peer Review
- Hive Mind: Networking
- Getting Better on Video

- Leveraging Social Media for the Job Search
- Applying for EDF Climate Corps Fellowships
- Cover Letter Writing and Peer Review
- LinkedIn Photobooth
- Interview Skills Workshop: Behavioral and Traditional Interview Questions
- Federal Job Applications
- U.S. Presidential Management Fellowship Information Session
- Applying for the Ph.D.
- How to Work a Career Fair
- Salary and Job Offer Negotiations

Career Fairs and Regional Events

YSEinDC: Approximately 100 students attend this annual program based on employers in the Washington, D.C. area, home to the largest YSE alumni population. The event has been held both in person and virtually.

All Ivy Environmental and Sustainable Development Career Fair: Up to eighty employers in a range of fields and more than 1,000 students participate in this annual fair jointly sponsored by the eight Ivy League institutions, which is open to all graduate students, undergraduate students, and alumni from partner schools. The fair has been held both virtually and in person at Columbia University in New York.

On-Campus Recruiting: Connect with employers during in-person and virtual on-campus information sessions.

Alumni Connections

YSE LinkedIn Group: The Office of Development and Alumni Services maintains the Yale School of the Environment LinkedIn group.

AlumniFire: A platform that blends professional networking provided by services like LinkedIn with event sharing and discussion opportunities on platforms like Facebook and the functions of a job search site.

Yale Cross Campus: A platform connecting Yale alumni to students, and alumni to alumni for networking and career development.

Professional Skills Modules (PSMs)

All Master of Environmental Management (MEM) students at YSE are required to complete four (4) Professional Skills Modules (PSMs) in order to graduate. Professional Skills Modules provide students with opportunities to strengthen their proficiency in core areas considered essential for all environmental professionals.

We have designed a suite of intensive, interactive workshops that are designed to help students thrive in their work at YSE and in their future careers. The workshops are held on Fridays throughout the year and usually run from 9am until 2pm. Each workshop is open to all YSE students, although if space is limited, MEM students will be given preference, given their graduation requirement.

PROFESSIONAL SKILLS MODULE SAMPLE TOPICS & OBJECTIVES

- 1. Verbal Communication** This workshop is designed to teach students how to give clear and compelling oral presentations. Facilitators introduce participants to best practices and useful frameworks and then give students the chance to practice, providing iterative feedback on individual presentations.
- 2. Visual Communication of Data** Through the Visual Communication workshop, students learn core principles for visually conveying data and other complex information. Students explore different ways to use charts, graphs, tables, infographics, and other methods of creating visual representations of data to engage with different audiences. Using pre-work exercises and interactive group activities, participants emerge ready to communicate better visually.
- 3. Negotiation** This module provides an introduction to general negotiation topics through a variety of exercises. Content includes the concept of negotiation, strategies for preparing to negotiate, positions/interests, best alternatives to negotiated agreements, and more.
- 4. Cultural Competence** The goals of this workshop are to cultivate an understanding of why cultural competence across differences—including those based on experience, expertise, values and other factors—is important and to understand how each of us can work across differences and develop skills for interrupting bias effectively in the workplace.
- 5. Fundraising** This workshop uses a mix of lectures, discussions, and role-plays to demystify the fundraising process and share key approaches for attracting people to invest in your work. Students leave with an understanding of how to develop and steward relationships with funders, how to assess funding landscapes, and how to make funding asks.
- 6. Project Management** Rather than review an existing guide to project management, this workshop explores a number of key questions that practitioners use when tackling and managing environmental challenges. The instructors draw examples and lessons learned from their work across scales, sectors, cultures and continents, as well as from experiences of workshop participants.
- 7. Stakeholder Engagement** This module introduces students to using stakeholder engagement processes, beginning with the conceptual basics: why, how, when, and what form of engagement to use. They then learn the practical steps of how to design, govern, fund, manage, evaluate, and end a successful stakeholder process.
- 8. Facilitation** This session provides an overview of key strategies and best practices to help participants make the most of their time with project partners and colleagues. It focuses on how to design and manage well-run, collaborative meetings to accomplish shared goals.
- 9. Environmental Career Strategies** This interactive workshop guides participants through a series of conversations and exercises designed to help students develop personal career strategies that will assist them in identifying, joining, and participating in environmental professional communities of practice to improve participants' chance of launching and advancing in a high impact career that also meets personal goals and preferences.

Summer Experience Program

A ten- to twelve-week summer experience is required of all master's candidates at YSE. Summer experiences provide the opportunity to align research and practice, enhance

professional and technical skills, and gain professional confidence and experience. Students are assisted by the CPD, faculty, and alumni in locating or designing opportunities that meet their individual needs and interests.

Given the School's strong ties with natural resource, environmental, business/ environment, and conservation employers worldwide, the possibilities are vast. The summer experience typically occurs between the first and second years of the program; occasionally, however, it lasts for longer periods. Opportunities include thesis-related fieldwork, traditional work experiences, structured internship programs, and independent or entrepreneurial projects.

ENV 006, Summer Internship/Research The summer experience is an important opportunity for students to apply knowledge and skills gained during their first year of study, gain professional experience and build networks, and investigate potential career paths. Experiences are ten and twelve weeks in duration, typically in the summer between the first and second years of the program. Students have latitude in designing an experience aligned with individual academic and career goals. Students are responsible for securing or creating their summer experience with appropriate faculty supervision, applying for and securing summer funding, and completing appropriate online forms before and after in order to receive course credit. Required of all master's candidates. 0 credits.

2022 Summer Experiences

The following list, compiled by the CPD, shows the rich and diverse experiences that YSE students had during a recent summer. Data for other years is available online at <http://environment.yale.edu/careers/data>. For more information, please contact Senior Associate Director Kathryn Douglas at 203.436.4830 or kathryn.douglas@yale.edu. The School and its students thank donors, host organizations, and supervisors for making these valuable professional experiences possible.

EXPERIENCES BY DEGREE DESIGNATION

Master of Environmental Management

- Business and the Environment Contractor with Metric in Chicago, IL
- Business and the Environment Fellow with Sanergy in Nairobi, Kenya
- Business and the Environment Intern with ThredUP in Dallas, TX
- Business and the Environment Intern with World Business Council for Sustainable Development in New Haven, CT
- Business and the Environment Intern with World Business Council for Sustainable Development in San Jose, CA
- Business and the Environment Researcher with Yunus Environment Hub in Berlin, Germany
- Carbon and Forest Finance Researcher with Yale School of the Environment in New Haven, CT
- Climate Change Mitigation and Adaptation Consultant with City of New Haven in New Haven, CT
- Climate Change Mitigation and Adaptation Fellow with Groundwork USA in Yonkers, NY

- Climate Change Mitigation and Adaptation Fellow with Natural Resources Defense Council (NRDC) in New Haven, CT
- Climate Change Mitigation and Adaptation Intern with Buy-In Community Planning in Providence, RI
- Climate Change Mitigation and Adaptation Intern with World Resources Institute (WRI) in Kampala, Uganda
- Climate Change Mitigation and Adaptation Intern with Yale School of the Environment in New Haven, CT
- Corporate Sustainability Associate with World Business Council for Sustainable Development in New Haven, CT
- Corporate Sustainability Intern with Ahold Delhaize USA in Hyattsville, MD
- Corporate Sustainability Intern with Helen of Troy in White Plains, NY
- Corporate Sustainability Intern with National Geographic in Washington, DC
- Corporate Sustainability Intern with Ocean Spray Cranberries in Lakeville, MA
- Disaster Risk Management Intern with Visayas State University Institute of Tropical Ecology and Environmental Management (VSU-ITEEM) in Baybay City, Philippines
- Ecosystem and Wildlife Conservation Fellow with National Forest Foundation in Hayfork, CA
- Ecosystem and Wildlife Conservation Intern with Brazilian Forests Dialogue in Curitiba, Brazil
- Ecosystem and Wildlife Conservation Intern with SORALO in Kirimatian, Kenya
- Ecosystem and Wildlife Conservation Intern with Yellowstone to Yukon Conservation Initiative in Missoula, MT
- Ecosystem and Wildlife Conservation Researcher with Sitka Sound Science Center in Sitka, AK
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Kanchanaburi, Thailand
- EDF Climate Corps Fellow with CME Group in New York, NY
- EDF Climate Corps Fellow with Equity Lifestyle Properties (MHC Property Management Limited Partnership) in Chicago, IL
- EDF Climate Corps Fellow with Etsy in Brooklyn, NY
- EDF Climate Corps Fellow with Indeed.com in Austin, TX
- EDF Climate Corps Fellow with Pfizer, Inc. in New York, NY
- EDF Climate Corps Fellow with Warner Music Group in New York, NY
- Energy Analysis and Strategy Fellow with CT Public Utilities Regulatory Authority (PURA) in New Britain, CT
- Energy Analysis and Strategy Intern with American Clean Power Association in Washington, DC
- Energy Analysis and Strategy Intern with Apple in Cupertino, CA
- Energy Analysis and Strategy Intern with Ascend Analytics in Golden, CO
- Energy Analysis and Strategy Intern with AVANGRID in New Haven, CT
- Energy Analysis and Strategy Intern with Marathon Capital in Chicago, IL

- Energy Analysis and Strategy Intern with New York State Energy Research and Development Authority (NYSERDA) in Albany, NY
- Energy Analysis and Strategy Intern with RMI in New Haven, CT
- Energy Analysis and Strategy Intern with World Resources Institute (WRI) in New Haven, CT
- Energy Efficiency Researcher with Environmental Change Institute at Oxford University in Oxford, United Kingdom
- Environmental Health and Safety Fellow with Air Alliance Houston in New Haven, CT
- Environmental Investing Associate with Ecosystem Integrity Fund in New York, NY
- Environmental Justice Fellow with the Yurok Tribe in Berkeley, CA
- Environmental Justice Forester with Urban Resources Initiative in New Haven, CT
- Environmental Justice Intern with Trust for Public Land in New Haven, CT
- Environmental Justice Intern with United States Department of Energy in Washington, DC
- Environmental Justice Researcher with Yale School of the Environment in New Haven, CT
- Environmental Law & Policy Associate with Beveridge & Diamond, PC in Washington, DC
- Environmental Law & Policy Intern with Appalachian Mountain Advocates in Johnson City, TN
- Environmental Law & Policy Intern with Bolivia Department of International Affairs and Climate Change in Santa Cruz, Bolivia
- Environmental Law & Policy Intern with Conservation Law Foundation in Concord, NH
- Environmental Law & Policy Intern with Ocean Conservancy in Anchorage, AK
- Environmental Policy Analysis Intern with United States Environmental Protection Agency in Washington, DC
- Food and Agriculture / Food Security Intern with City of New Haven in New Haven, CT
- Food and Agriculture / Food Security Intern with Renewable Resources Group in Los Angeles, CA
- Food and Agriculture / Food Security Intern with Tanka Fund in Kyle, SD
- Food and Agriculture / Food Security Researcher with Sri Lanka Program for Forest Conservation (SLPFC) in Pitekele, Sri Lanka
- Global Climate Change Science and Policy Intern with Pacific Northwest National Laboratory in College Park, MD
- Global Climate Change Science and Policy Intern with United Nations Environment Programme in Paris, France
- Green Design and the Built Environment Intern with Someplace Studio in Berlin, Germany
- Green Infrastructure Fellow with Cary Institute of Ecosystem Studies in Millbrook, NY

- Green Infrastructure Intern with RMI in Oakland, CA
- Green Manufacturing Co-Founder with Mango Leather in Mumbai, India
- Industrial Ecology Intern with World Business Council for Sustainable Development in New Haven, CT
- Industrial Ecology Intern with Yale School of the Environment in New Haven, CT
- Land Management and Land-Use Planning Intern with The Wilderness Society in Denver, CO
- Media & Communication Associate with Carbon Direct in New Haven, CT
- Media & Communication Intern with American Forest Foundation in State College, PA
- Renewable Energy Development Associate with Amp Energy in Denver, CO
- Renewable Energy Development Associate with BlocPower in Brooklyn, NY
- Renewable Energy Development Fellow with Yale School of the Environment in New Haven, CT
- Renewable Energy Development Intern with Clean Energy States Alliance in New Haven, CT
- Renewable Energy Development Intern with Modern Electron in Steamboat Springs, CO
- Renewable Energy Development Intern with UGE International in New York, NY
- Resilient Local Food Systems Researcher with University of Oslo in Copenhagen, Denmark
- Tropical Resources Associate with Yale School of the Environment in Banda, Rwanda
- Urban & Regional Planning Intern with Atlanta Regional Commission in Atlanta, GA
- Urban Ecology Intern with Urban Resources Initiative in New Haven, CT
- Urban Ecology Intern with Yale School of the Environment in New Haven, CT
- Water Resources Management Researcher with Yale School of the Environment in Lancaster, PA

Master of Forestry

- Ecosystem and Wildlife Conservation Intern with CSIR - Centre for Cellular and Molecular Biology in Hyderabad, India
- Ecosystem and Wildlife Conservation Intern with Kageno Worldwide in Banda, Rwanda
- Environmental Law & Policy Intern with Conservation Law Foundation in Boston, MA
- Food and Agriculture / Food Security Researcher with Yale School of the Environment in Pitakele, Sri Lanka
- Forestry Management Apprentice with Yale School of the Environment in North Ashford, CT
- Forestry Management Apprentice with Yale School of the Environment in Union, CT
- Forestry Management Intern with COMACO in Chipata, Zambia

- Forestry Management Intern with Hama Hama Company in Liliwaup, WA
- Forestry Management Intern with Yale School of the Environment in Eastford, CT
- Forestry Sustainability Intern with Yale School of the Environment in Eastford, CT
- Media & Communication Writer with Yale School of the Environment in New Haven, CT
- Tropical Resources Researcher with Yale School of the Environment in Ayanfuri, Ghana

Master of Environmental Science

- Business and the Environment Researcher with Yale School of the Environment in Seattle, WA
- Climate Change Mitigation and Adaptation Researcher with Okavango Research Institute, University of Botswana in Maun, Botswana
- Climate Change Mitigation and Adaptation Researcher with University of Minnesota Twin Cities in Saint Paul, Minnesota
- Climate Change Mitigation and Adaptation Researcher with Yale School of the Environment in Seocho-Gu, South Korea
- Coastal and Watershed Systems Researcher with Yale School of the Environment in Auburn, NY
- Coastal and Watershed Systems Researcher with Yale School of the Environment in Boston, MA
- Coastal and Watershed Systems Researcher with Yale School of the Environment in Fishers Island, NY
- Disaster Risk Management Researcher with Yale School of the Environment in San Juan, Puerto Rico
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Eastford, CT
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Madison, CT
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Maun, Botswana
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in New Haven, CT
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Okanogan, WA
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Pinedale, WY
- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Yasuni National Park, Ecuador
- Energy Analysis and Strategy Fellow with Yale School of the Environment in New Haven, CT
- Energy Analysis and Strategy Researcher with Yale School of the Environment in New Haven, CT

- Energy Analysis and Strategy Researcher with Yale School of the Environment in Perrysburg, OH
- Environmental Education and Training Intern with Esri in Boston, MA
- Environmental Education and Training Researcher with Yale School of the Environment in New Haven, CT
- Environmental Health and Safety Researcher with Yale School of the Environment in Kashgar, China
- Environmental Justice Researcher with Yale School of the Environment in Hopi, AZ
- Environmental Justice Researcher with Yale School of the Environment in New York, NY
- Environmental Justice Researcher with Yale School of the Environment in Pune, India
- Environmental Law & Policy Clerk with Schute Mihaly & Weinberger LLP in San Francisco, CA
- Environmental Policy Analysis Researcher with Yale School of the Environment in Southbury, CT
- Food and Agriculture / Food Security Researcher with Columbia University in Long Xuyen, Vietnam
- Food and Agriculture / Food Security Researcher with Yale School of the Environment in Brooklyn, NY
- Food and Agriculture / Food Security Researcher with Yale School of the Environment in Hialeah, FL
- Green Chemistry Researcher with Yale School of the Environment in New Haven, CT
- Land Management and Land-Use Planning Researcher with Yale School of the Environment in Montpelier, VT
- Parks & Recreation Researcher with Yale School of the Environment in Durango, CO
- Urban & Regional Planning Fellow with Yale School of the Environment in Forestville, MD
- Urban & Regional Planning Researcher with Yale School of the Environment in Accra, Ghana
- Urban Ecology Researcher with Yale School of the Environment in Beijing, China
- Water Resources Management Researcher with Yale School of the Environment in St. Johnsbury, VT

Master of Forest Science

- Ecosystem and Wildlife Conservation Researcher with Yale School of the Environment in Utuado, Puerto Rico
- Forestry Sustainability Researcher with Santa Fe National Park in Santa Fe, Panama

IMMEDIATELY FOLLOWING GRADUATION

Each year YSE graduates enjoy employment success in environmental science, policy, and management within the United States and around the world; pursue entrepreneurial ventures; and continue their education with further study. Details

including salary information on the most recent as well as previous classes can be found at <http://environment.yale.edu/careers/data>.

Summary data from the class of 2022 master's graduates six months after graduation :

Academic (K–Higher Education)	4%
Further Study	8%
Government/Intergovernmental/Public Sector	17%
Nonprofit/Nongovernmental	26%
Private (Business/Consulting/Law)	45%

SIX MONTHS AFTER GRADUATION

2022 Master's Degree Graduates, First Destination Employment by Sector

ACADEMICS (K–HIGHER EDUCATION)

Agroforestry Fellow, Yale School of the Environmental, New Haven, CT
 Equitable Energy Program Manager, Yale Center for Business and the Environment,
 New Haven, CT
 Postgraduate Associate, Yale University, New Haven, CT
 Postgraduate Fellow, Yale School of the Environment, New Haven, CT
 Science Teacher, Kelly Education, Bridgeport, CT

FURTHER STUDY

Fox International Fellow, Copenhagen Business School, Copenhagen, Denmark
 Fulbright Scholar, Rabat, Morocco
 Fulbright Scholar, Tetiaroa, French Polynesia
 M.B.A. Student, Stanford Graduate School of Business, Stanford, CA
 Ph.D. Student, Recreation, Parks, and Tourism Management; Pennsylvania State
 University, State College, PA
 Ph.D. Student, Environmental Science, University of California, Berkeley, Berkeley,
 CA
 Ph.D. Student, Environmental Science, Policy, and Management; University of
 California, Berkeley, Berkeley, CA
 Ph.D. Student, University of Michigan School for Environment and Sustainability, Ann
 Arbor, MI
 Ph.D. Student, Yale University School of the Environment, New Haven, CT

GOVERNMENT / INTERGOVERNMENTAL / PUBLIC SECTOR

Adaptive Management Specialist, United States Forest Service, Fort Collins, CO
 Climate Policy Specialist, New York State Division of Homeland Security and
 Emergency Services/Tidal Basin Government Consulting, Albany NY
 Country Desk Officer, United States Agency for International Development,
 Washington, DC
 Energy Justice Management & Program Analyst, United States Department of Energy,
 Washington, DC
 Environmental Protection Specialist, United States Department of Transportation,
 Washington, DC
 Environmental Scientist, California Environmental Protection Agency, Sacramento, CA

Forestry Technician, Sonoma Resource Conservation District, Santa Rosa, CA
 GIS Manager & Natural Resources Planner, Addison County Regional Planning
 Commission, Middlebury, VT
 Governor's Fellow, Connecticut Department of Transportation, Newington, CT
 Impact Fellow for Wildfire and Nature-Based Solutions at the White House Office of
 Management and Budget, Federation of American Scientists, Washington DC
 Judicial Law Clerk, Federal District Court of Vermont, Burlington, VT
 Managing Director, Government of Maharashtra, Haffkine Biopharmaceuticals
 Corporation Ltd., Mumbai, Maharashtra, India
 NOAA Coastal Management Fellow, California Coastal Commission, San Francisco, CA
 ORISE Fellow, United States Forest Service, Seattle, WA
 Program Analyst, National Park Service, Boulder, CO
 Program Analyst, United States Bureau of Reclamation, Water Resources and Planning
 Office, Denver, CO
 Rate Specialist, Connecticut Public Utilities Regulatory Authority, New Britain, CT
 Sustainability Manager, County of Yolo, Woodland, CA
 Urban Soil Conservationist, United States Department of Agriculture Natural
 Resources Conservation Service, Troy, NY

NOT-FOR-PROFIT / NON-GOVERNMENTAL ORGANIZATION

Blue Carbon Specialist, The Nature Conservancy, Nassawadox, VA
 Consultant, World Business Council of Sustainable Development, New York, NY
 Director of Land Conservation, Potomac Conservancy, Silver Spring, MD
 Director of Policy and Network, Coalition for Green Capital, Washington, DC
 Director of the Thain Family Forest, New York Botanical Garden, Bronx, NY
 Energy Democracy Coordinator, UPROSE, Brooklyn, NY
 Environmental Analyst, National Association of Wetland Managers, Portland, ME
 Executive Director, AdkAction, Keeseville, NY
 Faith Outreach Coordinator and Transit Campaign Lead, Virginia Interfaith Power and
 Light, Richmond, VA
 GIS and Forest Analyst, Wildlife Conservation Society, Washington DC
 Gruber Fellow, Restauremos El Colorado, Mexicali, Mexico
 Intern, C40 Cities, New York, NY
 Junior Implementation Strategist, Climate Analytics Inc, New York, NY
 Lead Research Analyst, Ocean Conservancy, Remote
 Marketing and Community Manager, Joules Accelerator, Charlotte, NC
 Methane Policy Fellow, University of California Berkeley, Berkeley, CA
 Power Sector Policy Lead, Evergreen Action, New Haven, CT
 Principal Associate, Pew Charitable Trusts, Washington, DC
 Program Associate, Pan American Development Foundation, Washington, DC
 Program Instructor, Round River Conservation Studies, Maun, Botswana
 Program Manager, Colorado Clean Energy Fund, Denver, CO
 Program Manager, National Association of State Energy Officials, Arlington, VA
 Project Management Fellow, Environmental Defense Fund, San Francisco, CA
 Research Analyst II, Cities4Forests and Natural Infrastructure, World Resources
 Institute, Washington, DC
 Senior ESG Analyst, Environmental Defense Fund, New York, NY
 Senior Program Associate, Winrock International, Arlington, VA
 Senior Research Associate, Ocean Data, World Resources Institute, Washington, DC

Strategic Project Lead, The Rockefeller Foundation, Nairobi, Kenya
 Sustainable Agriculture Specialist, The Nature Conservancy, Remote
 Water Program Manager, Hill Country Alliance, Austin, TX
 Wild Animal Keeper, Wildlife Conservation Society, Brooklyn, NY

PRIVATE (BUSINESS / CONSULTING / LAW)

Analyst, Abt Associates, Cambridge, MA
 Analyst, BlackRock, New York, NY
 Architect, Climate Resiliency, Weston & Sampson, Boston, MA
 Architectural Designer, Hart Howerton, New York, NY
 Asset Management Analyst, Greenskies Clean Energy, New Haven, CT
 Assistant Consultant Environmental Planner, WSP USA, Providence, RI
 Assistant Vice President, Corporate Banking Sustainability and Corporate Transitions,
 Citigroup, New York, NY
 Associate Attorney, Anderson & Kreiger LLP, Boston, MA
 Associate Consultant, WSP USA, Chicago, IL
 Associate, Boston Consulting Group, Shanghai, China
 Associate, Clear Strategy Inc., Toronto, Ontario, Canada
 Associate, Growth Strategy, AES Clean Energy, Arlington, VA
 Associate, Investment Banking, MUFG Bank, Los Angeles, CA
 Associate, Nomura, San Francisco, CA
 Associate, Spring Lane Capital, Boston, MA
 Attorney, Mead, Talerman & Costa, LLC, Newburyport, MA
 Attorney, Stinson LLP, Dallas, TX
 Business Analyst, Cisco Systems, New Haven, CT
 Business Analyst, McKinsey & Company, Shanghai, China
 Business Development Associate, Sol Systems, Washington, DC
 Climate Action Planner, Rincon Consultants, Oakland, CA
 Climate Strategist, Esherick Homsey Dodge and Davis Architecture, San Francisco, CA
 Community Resilience Specialist, Stantec, Laurel, MD
 Digital Content Manager, The Cool Down, Remote
 Energy Efficiency Consultant, Eversource, Berlin, CT
 Energy Operations Manager, Amazon.com, Seattle, WA
 Environmental Compliance Manager, Mill Creek Renewables, Whiting, NJ
 Environmental Protection Specialist, Booz Allen Hamilton, Washington, DC
 Fellow Associate, McKinsey & Company, Berlin, Germany
 Graduate Analyst, Copenhagen Offshore Partners, Boston, MA
 Head of Policy/Sr. Director, DSD Renewables, Washington, DC
 Operational Sustainability Associate, JPMorgan Chase & Co, Washington, DC
 Policy Manager, Carbon Markets, 3Degrees, San Francisco, CA
 Public Affairs Specialist, Stantec, Los Angeles, CA
 Quality Engineer-LCA Specialist, Lumentum, San Jose, CA
 Remote Sensing Associate, Terra Global Capital, Remote
 Renewable Development Associate, ConnectGen LLC, Houston, TX
 Research Analyst II, S&P Global, Washington, DC
 Science Associate, Industrial Economics, Incorporated, Cambridge, MA
 Senior Associate–Sustainability, JPMorgan Chase & Co, New York, NY
 Senior Associate, Boston Consulting Group, New York, NY

Senior Consultant, Corporate Citizenship, New York, NY
 Senior Consultant, Environmental Resource Management, New York, NY
 Senior Consultant, FTI Consulting, Boston, MA
 Senior Manager, Sustainability, Walmart, Bentonville, AR
 State Policy and Regulatory Lead, Utilidata, Providence, RI
 Sustainability Consultant, Schneider Electric Sustainability Business
 Sustainability Manager, PricewaterhouseCoopers, Denver, CO
 Sustainability Senior, Deloitte LLP, Stamford, CT
 Sustainability Specialist, Sealed Air Corporation, Washington, DC
 Technology Innovation Associate, Ulteig, Denver, CO
 Vice President of Strategy, ClearFlame Engines, Denver, CO
 Zero Waste Specialist, Foodprint Group, Remote

Diversity, Equity, and Inclusion

The Office of Diversity, Equity, and Inclusion helps to assure that all members of the School's community can contribute meaningfully and authentically to a sustainable future. To cultivate a sense of Belonging, the Office supports programming that has taken the forms of festivities celebrating holidays from around the world, provocative panel discussions that examine the intersections of environmental and societal issues, and high-spirited events that foster the expansion of professional networks, among others. The Office of DEI also facilitates training sessions aimed at minimizing the kinds of interpersonal interactions that tend to inhibit learning, scholarship, and professional practice. Such activities have included, for example, the following:

- trainings about pronouns and gender identities,
- Lunar New Year celebrations,
- career-path discussions with students and faculty of color, and
- hosting renowned guest speakers.

Newcomers to the School are provided with resources that enable them to build community and find culturally appropriate goods and services at Yale and throughout the New Haven area. In collaboration with colleagues from across the University, members of the DEI team promote civil discourse throughout the School's spaces and activities. The Office may be contacted at yse.dei@yale.edu.

Leave of Absence

Students are expected to follow a continuous course of study at the School of the Environment. However, a student who wishes or needs to interrupt study temporarily may request a leave of absence. There are three types of leave—personal, medical, and parental—all of which are described below. The general policies that apply to a leave of absence are:

1. Any student who is contemplating a leave of absence should see the assistant dean of student affairs to discuss the necessary application procedures.
2. All leaves of absence must be approved by the assistant dean of student affairs or the senior associate dean of academic affairs. Medical leaves also require the written recommendation of a physician on the staff of Yale Health, as described below.

3. A student may be granted a leave of absence of one to two years. Any leave approved by the assistant dean of student affairs or the senior associate dean of academic affairs will be for a specified period.
4. International students who apply for a leave of absence must consult with OISS regarding their visa status.
5. A student on a leave of absence may complete outstanding work in courses for which extensions have been granted. The student may not, however, fulfill any other degree requirements during the time on leave.
6. A student on a leave of absence is not eligible for financial aid, including loans; and in most cases, student loans are not deferred during periods of non-enrollment.
7. A student on a leave of absence is not eligible for the use of any University facilities normally available to enrolled students.
8. A student on leave of absence may continue to be enrolled in Yale Health by purchasing coverage through the Student Affiliate Coverage plan. In order to secure continuous coverage from Yale Health, enrollment in this plan must be requested prior to the beginning of the term in which the student will be on leave. If a leave of absence is granted during the term, the student must request Yale Health Affiliate Coverage enrollment within thirty days of the date the registrar was notified of the leave. Coverage is not automatic; enrollment forms are available from the Member Services Department of Yale Health, 203.432.0246, or can be downloaded from the Yale Health website (<http://yalehealth.yale.edu>).
9. A student on a leave of absence does not have to file a formal application for readmission. However, the student must notify the assistant dean of student affairs or the senior associate dean of academic affairs in writing of the intention to return at least eight weeks prior to the end of the approved leave. In addition, a returning student who wishes to be considered for financial aid must submit appropriate financial aid applications to the School's financial aid office to determine eligibility.
10. A student on a leave of absence who does not return at the end of an approved leave, and does not request and receive an extension from the dean, is automatically dismissed from the School.

Personal leave of absence A student who wishes or needs to interrupt study temporarily because of personal exigencies may request a personal leave of absence. The general policies governing all leaves of absence are described above. A student who is current with degree requirements is eligible for a personal leave after satisfactory completion of at least one term of study. Personal leaves cannot be granted retroactively and normally will not be approved after the tenth day of a term.

To request a personal leave of absence, the student must apply in writing before the beginning of the term for which the leave is requested, explaining the reasons for the proposed leave and stating both the proposed start and end dates of the leave, and the address at which the student can be reached during the period of the leave. If the assistant dean of student affairs and the senior associate dean of academic affairs find the student to be eligible, the leave will be approved. In any case, the student will be informed in writing of the action taken. A student who does not apply for a personal leave of absence, or whose application for a leave is denied, and who does not register for any term, will be considered to have withdrawn from the School.

Medical leave of absence A student who must interrupt study temporarily because of illness or injury may be granted a medical leave of absence with the approval of the assistant dean of student affairs and the senior associate dean of academic affairs, on the written recommendation of a physician on the staff of Yale Health. The general policies governing all leaves of absence are described above. A student who is making satisfactory progress toward degree requirements is eligible for a medical leave any time after matriculation. The final decision concerning a request for a medical leave of absence will be communicated in writing by the assistant dean of student affairs.

The School of the Environment reserves the right to place a student on a mandatory medical leave of absence when, on recommendation of the director of Yale Health or the chief of the Mental Health and Counseling department, the dean of the School determines that, because of a medical condition, the student is a danger to self or others, the student has seriously disrupted others in the student's residential or academic communities, or the student has refused to cooperate with efforts deemed necessary by Yale Health and the dean to make such determinations. Each case will be assessed individually based on all relevant factors, including, but not limited to, the level of risk presented and the availability of reasonable modifications. Reasonable modifications do not include fundamental alterations to the student's academic, residential, or other relevant communities or programs; in addition, reasonable modifications do not include those that unduly burden University resources.

An appeal of such a leave must be made in writing to the dean of the School no later than seven days from the effective date of the leave.

An incident that gives rise to voluntary or mandatory leave of absence may also result in subsequent disciplinary action.

A student who is placed on medical leave during any term will have tuition adjusted according to the same schedule used for withdrawals (see Tuition Rebate and Financial Aid Refund Policy). Before re-registering, a student on medical leave must secure written permission to return from a Yale Health physician.

Leave of absence for parental responsibilities A student who wishes or needs to interrupt study temporarily for reasons of pregnancy, maternity care, or paternity care may be granted a leave of absence for parental responsibilities. The general policies governing all leaves of absence are described above. A student who is making satisfactory progress toward degree requirements is eligible for parental leave any time after matriculation.

Any student planning to have or care for a child is encouraged to meet with the assistant dean of student affairs to discuss leaves and other short-term arrangements. For many students, short-term arrangements rather than a leave of absence are possible. Students living in University housing units are encouraged to review their housing contract and the related policies of the Yale Housing before applying for a parental leave of absence. Students granted a parental leave may continue to reside in University housing to the end of the academic term for which the leave was first granted, but no longer.

U.S. Military Leave Readmissions Policy

Students who wish or need to interrupt their studies to perform U.S. military service are subject to a separate U.S. military leave readmissions policy. In the event a student withdraws or takes a leave of absence from the School of the Environment to serve in the U.S. military, the student will be entitled to guaranteed readmission under the following conditions:

1. The student must have served in the U.S. Armed Forces for a period of more than thirty consecutive days;
2. The student must give advance written or oral notice of such service to the assistant dean of student affairs or the senior associate dean of academic affairs. In providing the advance notice the student does not need to indicate an intention to return. This advance notice need not come directly from the student, but rather, can be made by an appropriate officer of the U.S. Armed Forces or official of the U.S. Department of Defense. Notice is not required if precluded by military necessity. In all cases, this notice requirement can be fulfilled at the time the student seeks readmission, by submitting an attestation that the student performed the service.
3. The student must not be away from the School to perform U.S. military service for a period exceeding five years (this includes all previous absences to perform U.S. military service but does not include any initial period of obligated service). If a student's time away from the School to perform U.S. military service exceeds five years because the student is unable to obtain release orders through no fault of the student or the student was ordered to or retained on active duty, the student should contact the assistant dean of student affairs to determine if the student remains eligible for guaranteed readmission.
4. The student must notify the School within three years of the end of the U.S. military service of the intention to return. However, a student who is hospitalized or recovering from an illness or injury incurred in or aggravated during the U.S. military service has up until two years after recovering from the illness or injury to notify the School of the intent to return.
5. The student cannot have received a dishonorable or bad conduct discharge or have been sentenced in a court-martial.

A student who meets all of these conditions will be readmitted for the next term, unless the student requests a later date of readmission. Any student who fails to meet one of these requirements may still be readmitted under the general readmission policy but is not guaranteed readmission.

Upon returning to the School, the student will resume education without repeating completed course work for courses interrupted by U.S. military service. The student will have the same enrolled status last held and with the same academic standing. For the first academic year in which the student returns, the student will be charged the tuition and fees that would have been assessed for the academic year in which the student left the institution. Yale may charge up to the amount of tuition and fees other students are assessed, however, if veteran's education benefits will cover the difference between the amounts currently charged other students and the amount charged for the academic year in which the student left.

In the case of a student who is not prepared to resume studies with the same academic status at the same point where the student left off or who will not be able to complete the program of study, the School of the Environment will undertake reasonable efforts to help the student become prepared. If after reasonable efforts, the School determines that the student remains unprepared or will be unable to complete the program, or after the School determines that there are no reasonable efforts it can take, the School may deny the student readmission.

Emergency Suspension

The dean of the School of the Environment, or a delegate of the dean, may place a student on an emergency suspension from residence or academic status when (1) the student has been arrested for or charged with serious criminal behavior by law enforcement authorities; or (2) the student allegedly violated a disciplinary rule of the School and the student's presence on campus poses a significant risk to the safety or security of members of the community.

Following an individualized risk and safety analysis, the student will be notified in writing of the emergency suspension. A student who is notified of an emergency suspension will have twenty-four hours to respond to the notice. The emergency suspension will not be imposed prior to an opportunity for the student to respond unless circumstances warrant immediate action for the safety and security of members of the community. In such cases, the student will have an opportunity to respond after the emergency suspension has been imposed.

When a student in the School is placed on an emergency suspension, the matter will be referred for disciplinary action in accordance with school policy. Such a suspension may remain in effect until disciplinary action has been taken with regard to the student; however, it may be lifted earlier by action of the dean or dean's delegate, or by the disciplinary committee after a preliminary review.

Freedom of Expression

The Yale School of the Environment is committed to the protection of free inquiry and expression in the classroom and throughout the School community. In this, the School reflects the University's commitment to and policy on freedom of expression as eloquently stated in the Woodward Report (Report of the Committee on Freedom of Expression at Yale, 1974). See <https://studentlife.yale.edu/guidance-regarding-free-expression-and-peaceable-assembly-students-yale>.

YALE UNIVERSITY RESOURCES AND SERVICES

A Global University

Global engagement is core to Yale's mission as one of the world's great universities. Yale aspires to:

- Be the university that best prepares students for global citizenship and leadership
- Be a worldwide research leader on matters of global import
- Be the university with the most effective global networks

Yale's engagement beyond the United States dates from its earliest years. The University remains committed to attracting the best and brightest from around the world by offering generous international financial aid packages, conducting programs that introduce and acclimate international students to Yale, and fostering a vibrant campus community.

Yale's globalization is guided by the vice provost for global strategy, who is responsible for ensuring that Yale's broader global initiatives serve its academic goals and priorities, and for enhancing Yale's international presence as a leader in liberal arts education and as a world-class research institution. The vice provost works closely with academic colleagues in all of the University's schools and provides support and strategic guidance to the many international programs and activities undertaken by Yale faculty, students, and staff.

Teaching and research at Yale benefit from the many collaborations underway with the University's international partners and the global networks forged by Yale across the globe. International activities across all Yale schools include curricular initiatives that enrich classroom experiences from in-depth study of a particular country to broader comparative studies; faculty research and practice on matters of international importance; the development of online courses and expansion of distance learning; and the many fellowships, internships, and opportunities for international collaborative research projects on campus and abroad. Together these efforts serve to enhance Yale's global educational impact and are encompassed in the University's global strategy.

The Office of International Affairs (<https://world.yale.edu/oia>) provides administrative support for the international activities of all schools, departments, centers, and organizations at Yale; promotes Yale and its faculty to international audiences; and works to increase the visibility of Yale's international activities around the globe. OIA also coordinates Yale's program for hosting scholars at risk.

The Office of International Students and Scholars (<https://oiss.yale.edu>) hosts orientation programs and social activities for the University's international community and is a resource for international students and scholars on immigration matters and other aspects of acclimating to life at Yale.

The Yale Alumni Association (<https://alumni.yale.edu>) provides a channel for communication between the alumni and the University and supports alumni organizations and programs around the world.

Additional information may be found on the “Yale and the World” website (<https://world.yale.edu>), including resources for those conducting international activities abroad and links to international initiatives across the University.

Housing

The Yale Housing Office has dormitory and apartment units available for graduate and professional students. Dormitories are single-occupancy and two-bedroom units of varying sizes and prices. They are located across the campus, from Edward S. Harkness Memorial Hall, serving the medical campus, to Helen Hadley Hall (which will be closing summer of 2024) and the newly built 272 Elm Street, serving the central/science campus. Unfurnished apartments consisting of efficiencies and one-, two-, and three-bedroom apartments for singles and families are also available. Family housing is available in Whitehall and Esplanade Apartments. The Housing website (<https://housing.yale.edu>) is the venue for graduate housing information and includes dates, procedures, facility descriptions, floor plans, and rates. Applications for the new academic year are available beginning April 1 and can be submitted directly from the website with a Yale NetID. Room selection for paired roommates begins April 19. Room selection for all others begins April 20.

The Yale Housing Office also manages the Off Campus Living listing service (<http://offcampusliving.yale.edu>; 203.436.9756), which is the exclusive Yale service for providing off-campus rental and sales listings from New Haven landlords. This secure system allows members of the Yale community to search rental listings, review landlord/property ratings, and search for a roommate in the New Haven area. On-campus housing is limited, and members of the community should consider off-campus options. Yale University discourages the use of Craigslist and other third-party nonsecure websites for off-campus housing searches.

The Yale Housing Office is located in Helen Hadley Hall (HHH) at 420 Temple Street and is open from 9 a.m. to 4 p.m., Monday through Friday; 203.432.2167.

Dining

Yale Hospitality has tailored its services to meet the particular needs of graduate and professional school students by offering meal plan options that allow flexibility and value. For up-to-date information on all options, costs, and residential and retail dining locations, visit <https://hospitality.yale.edu>. Inquiries concerning food services should be addressed to Yale Hospitality, 246 Church Street, PO Box 208261, New Haven CT 06520-8261; email, yale.hospitality@yale.edu; tel., 203.432.0420.

Identification Cards

Yale University issues identification (ID) cards to faculty, staff, and students. ID cards support the community’s safety and security by allowing access to many parts of campus: dining halls and cafés, residential housing, libraries, athletic centers,

workspaces, labs, and academic buildings. Cultivating an environment of public safety requires the entire community to work together to ensure appropriate use of our spaces, as well as to foster a sense of belonging for all members of our community.

University policies, regulations, and practice require all students, faculty, and staff to carry their Yale ID card on campus and to show it to university officials on request. Yale ID cards are not transferable. Community members are responsible for their own ID card and should report lost or stolen cards immediately to the Yale ID Center (<https://idcenter.yale.edu>).

Members of the University community may be asked to show identification at various points during their time at Yale. This may include but not be limited to situations such as: where individuals are entering areas with access restrictions, for identification in emergency situations, to record attendance at a particular building or event, or for other academic or work-related reasons related to the safe and effective operation and functioning of Yale's on-campus spaces.

For some members of our community, based on the needs and culture of their program, department, and/or characteristics of their physical spaces, being asked to show an ID card is a regular, even daily, occurrence. However, for others it may be new or infrequent. For some, being asked to produce identification can be experienced negatively, as a contradiction to a sense of belonging or as an affront to dignity. Yale University is committed to enhancing diversity, supporting equity, and promoting an environment that is welcoming, inclusive, and respectful. University officials requesting that a community member show their ID card should remain mindful that the request may raise questions and should be prepared to articulate the reasons for any specific request during the encounter. In addition, individuals requesting identification should also be prepared to present their own identification, if requested.

Security

As with most universities in urban settings, the security of persons and property is a primary concern of the School of the Environment. The University police and the fire marshal, in cooperation with the police and fire services of the City of New Haven, strive constantly to maintain a safe environment for the Yale community. At an orientation session during the summer modules, incoming students receive detailed information on emergency communications, personal safety tips, and other ways to protect themselves, equipment, and buildings.

Health Services

The Yale Health Center is located on campus at 55 Lock Street. The center is home to Yale Health, a not-for-profit, physician-led health coverage option that offers a wide variety of health care services for students and other members of the Yale community. Services include student health, gynecology, mental health, pediatrics, pharmacy, blood draw, radiology, a seventeen-bed inpatient care unit, and an acute care clinic with extended hours and telephone triage/guidance from a registered nurse twenty-four hours a day. Additional specialty services such as allergy, dermatology, orthopedics, and a travel clinic and more are available with added coverage. Yale Health's services are detailed in the *Yale Health Student Handbook*, available through the Yale Health Member

Services Department, 203.432.0246, or online at <https://yalehealth.yale.edu/coverage/student-coverage>.

ELIGIBILITY FOR SERVICES

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

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

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

All students who purchase Yale Health Hospitalization/Specialty Coverage (see below) are welcome to use specialty and ancillary services at Yale Health Center. Upon referral, Yale Health will cover the cost of specialty and ancillary services for these students. Students with an alternate insurance plan should seek specialty services from a provider who accepts their alternate insurance.

HEALTH COVERAGE ENROLLMENT

The University also requires all students eligible for Yale Health Basic Student Health Services to have adequate hospital insurance coverage. Students may choose Yale Health Hospitalization/Specialty Coverage or elect to waive the plan if they have other hospitalization coverage, such as coverage through a spouse or parent. The waiver must be renewed annually, and it is the student's responsibility to confirm receipt of the waiver by the University's deadlines noted below.

Yale Health Hospitalization/Specialty Coverage

For a detailed explanation of this plan, which includes coverage for prescriptions, see the *Yale Health Student Handbook*, available online at <https://yalehealth.yale.edu/coverage/student-coverage>.

Students are automatically enrolled and charged a fee each term on their Student Financial Services bill for Yale Health 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 August 1 through July 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, Yale Health Hospitalization/

Specialty Coverage begins on the first day required to be on campus for program orientation. 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 July 31.

Waiving Yale Health Hospitalization/Specialty Coverage Students are permitted to waive Yale Health Hospitalization/Specialty Coverage by completing an online waiver form at <https://yhpstudentwaiver.yale.edu> that demonstrates proof of alternate coverage. It is the student's responsibility to report any changes in alternate insurance coverage to the Member Services Department within thirty days. Students are encouraged to review their present coverage and compare its benefits to those available under Yale Health. 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.

Revoking the waiver Students who waive Yale Health Hospitalization/Specialty Coverage but later wish to be covered must complete and send a form voiding their waiver to the 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. Yale Health fees will not be prorated.

Yale Health Student Dependent Plans

A student may enroll the student's lawfully married spouse or civil union partner and/or legally dependent child(ren) under the age of twenty-six in one of three student dependent plans: Student + Spouse, Student + Child/Children, or Student Family Plan. These plans include services described in both Yale Health Basic Student Health Services and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment is by application. Applications are available from the Member Services Department or can be downloaded from the website (<https://yalehealth.yale.edu/resources/forms>) 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.

Yale Health Student Affiliate Coverage

Students on leave of absence, on extended study, or enrolled per course per credit; students paying less than half tuition; students enrolled in the EMBA program; students enrolled in the Broad Center MMS program; students enrolled in the PA Online program; and students enrolled in the EMPH program may enroll in Yale Health Student Affiliate Coverage, which includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Applications are available from the Member Services Department or can be downloaded from the website (<https://yalehealth.yale.edu/resources/forms>) and must be received by September 15 for full-year or fall-term coverage, or by January 31 for spring-term coverage only.

ELIGIBILITY CHANGES

Withdrawal A student who withdraws from the University during the first fifteen days of the term will be refunded the fee paid for Yale Health Hospitalization/Specialty

Coverage. The student will not be eligible for any Yale Health benefits, and the student's Yale Health 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. Assistance with identifying and locating alternative sources of medical care may be available from the Care Management Department at Yale Health. At all other times, a student who withdraws from the University will be covered by Yale Health for thirty days following the date of withdrawal. Fees will not be prorated or refunded. Students who withdraw are not eligible to enroll in Yale Health Student Affiliate Coverage. Regardless of enrollment in Yale Health Hospitalization/Specialty Coverage, students who withdraw will have access to services available under Yale Health Basic Student Health Services (including Student Health, Athletic Medicine, Mental Health & Counseling, and Care Management) during these thirty days to the extent necessary for a coordinated transition of care.

Leaves of absence Students who are granted a leave of absence are eligible to purchase Yale Health Student Affiliate Coverage for the term(s) of the leave. If the leave occurs on or *before* the first day of classes, Yale Health Hospitalization/Specialty Coverage will end retroactive to the start of the coverage period for the term. If the leave occurs anytime after the first day of classes, Yale Health Hospitalization/Specialty Coverage will end on the day the registrar is notified of the leave. In either case, students may enroll in Yale Health Student Affiliate Coverage. Students must enroll in Affiliate Coverage prior to the beginning of the term unless the registrar is notified after the first day of classes, in which case, the coverage must be purchased within thirty days of the date the registrar was notified. Fees paid for Yale Health Hospitalization/Specialty Coverage will be applied toward the cost of Affiliate Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (<https://yalehealth.yale.edu/resources/forms>). Fees will not be prorated or refunded.

Extended study or reduced tuition Students who are granted extended study status or pay less than half tuition are not eligible for Yale Health Hospitalization/Specialty Coverage. They may purchase Yale Health Student Affiliate Coverage during the term(s) of extended study. This plan includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (<https://yalehealth.yale.edu/resources/forms>). Students must complete an enrollment application for the plan prior to September 15 for the full year or fall term, or by January 31 for the spring term only.

Per course per credit Students who are enrolled per course per credit are not eligible for Yale Health Hospitalization/Specialty Coverage. They may purchase Yale Health Student Affiliate Coverage during the term(s) of per course per credit enrollment. This plan includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (<https://yalehealth.yale.edu/resources/forms>). Students must complete an enrollment application for the plan prior to September 15 for the full year or fall term or by January 31 for the spring term only.

For a full description of the services and benefits provided by Yale Health, please refer to the *Yale Health Student Handbook*, available from the Member Services Department, 203.432.0246, 55 Lock Street, PO Box 208237, New Haven CT 06520-8237.

REQUIRED IMMUNIZATIONS

Proof of vaccination is a pre-entrance requirement determined by the Connecticut State Department of Public Health. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2023. Please access the Incoming Student Vaccination Record form for graduate and professional students at <https://yalehealth.yale.edu/new-graduate-and-professional-student-forms>. Connecticut state regulation requires that this form be completed and signed, for each student, by a physician, nurse practitioner, or physician's assistant. The form must be completed, independent of any and all health insurance elections or coverage chosen. Once the form has been completed, the information must be entered into the Yale Vaccine Portal, and all supporting documents must be uploaded to <http://yale.medicatconnect.com>. The final deadline is August 1.

COVID-19 As per recommendations from the Centers for Disease Control and Prevention, vaccination against COVID-19 is strongly encouraged, but not required, for incoming (matriculating) students. Students are asked to submit documentation of prior any primary series vaccinations or bivalent boosters that they have received through the Yale Health website, <http://yalehealth.yale.edu>. Vaccination requirements remain in place for healthcare workers and trainees, including students who work in settings where patient care is provided, or those who work with human research subjects in clinical settings. Those individuals must submit documentation of vaccination with a primary series and one booster (or, for those who have not yet received a primary series, one bivalent dose of vaccine) to the university or seek approval for a medical or religious exemption. Yale will accept any combination of COVID-19 vaccines that have received full approval or Emergency Use Authorization (EUA) by the U.S. Food and Drug Administration (FDA) or have been issued Emergency Use Listing (EUL) by the World Health Organization (WHO). International students who do not have access to WHO or FDA authorized or approved vaccines may be vaccinated at Yale Health on request.

Influenza All students are required to have flu vaccination in the fall term when it is made available to them by Yale Health.

Measles, mumps, rubella, and varicella All students are required to provide proof of immunization against measles (rubeola), mumps, German measles (rubella), and varicella. Connecticut state regulation requires two doses of MMR (combined measles, mumps, and rubella) vaccine and two doses of varicella vaccine. The first dose must have been given after the student's first birthday; the second dose must have been given at least twenty-eight (28) days after the first dose. If dates of vaccination are not available, titer results (blood test) demonstrating immunity may be substituted for proof of vaccination. The cost for all vaccinations and/or titers rests with the student, as these vaccinations are considered to be a pre-entrance requirement by the Connecticut State Department of Public Health. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2023.

Quadrivalent meningitis All students living in on-campus dormitory facilities (all undergraduate residential colleges and the following graduate dormitories: 254 Prospect Street, 272 Elm Street, 276 Prospect Street, Baker Hall, Harkness Dormitory, and Helen Hadley Hall) must be vaccinated against meningitis. The only vaccines that will be accepted in satisfaction of the meningitis vaccination requirement are ACWY Vax, Menveo, Nimenrix, Menactra, Mencevax, and Menomune. The vaccine must have been given within five years of the first day of classes at Yale. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2023. The cost for all vaccinations and/or titers rests with the student, as these vaccinations are a pre-entrance requirement by the Connecticut State Department of Public Health. Please note that the State of Connecticut does not require this vaccine for students who intend to reside on campus and are over the age of twenty-nine.

TB screening The University requires tuberculosis screening for all incoming students who have lived or traveled outside of the United States within the past year.

Hepatitis B series The University recommends that incoming students receive a series of three Hepatitis B vaccinations. Students may consult their health care provider for further information.

Student Accessibility Services

<https://sas.yale.edu>
203.432.2324

Student Accessibility Services (SAS) engages in an interactive process with Yale students undergraduate, graduate, and professional- school students with permanent conditions and/or temporary injuries, to determine reasonable and appropriate accommodations on a case-by-case basis. Students may initiate this process by requesting accommodations through the online accommodation request form available at https://yale-accommodate.symplicity.com/public_accommodation.

Engagement with SAS is private, and faculty/staff are notified of approved accommodations on a need-to-know basis only, except when required by law. Students may upload supporting documentation regarding their condition and request for accommodations with their accommodation request form. Documentation guidelines are available at <https://sas.yale.edu/get-started/documentation-guidelines>.

Resources to Address Discrimination and Harassment Concerns, Including Sexual Misconduct

Yale is a community committed to fostering an environment of diversity, mutual respect, and intellectual discovery in which all members of the community can thrive. Acts of discrimination and harassment are contrary to the community standards and ideals of our university. Staff in the following offices work within the Yale community to promote respect, inclusivity, diversity, and equal opportunity, and are available to talk through situations you have witnessed or experienced, as well as to provide guidance.

When you have concerns or questions related to discrimination or harassment, you have a wide range of choices for support. You can reach out to a discrimination and harassment resource coordinator, or you can talk with others, such as a residential college dean, dean of student affairs, or the Office of Institutional Equity and Accessibility.

If you'd like to talk with someone about sexual misconduct or sex-based discrimination, you can reach out directly to the deputy Title IX coordinator of your school or the Title IX Office. The Title IX website (<https://titleix.yale.edu>) is a helpful resource for additional questions or concerns about sex-based discrimination or sexual misconduct. If an individual is unsure of which resource to contact and wants to explore options for addressing sexual misconduct, the SHARE Center is a good place to start.

DISCRIMINATION AND HARASSMENT RESOURCE COORDINATORS

Office hours: 9 a.m.–5 p.m., M–F

<https://dhr.yale.edu/discrimination-and-harassment-resource-coordinators>

Discrimination and harassment resource coordinators (formerly deans' designees) have been identified by the dean of each college and school as community members with the responsibility to receive concerns and offer advice and guidance related to diversity and inclusion, discrimination and harassment, and equal opportunity. Discrimination and harassment resource coordinators may also help facilitate informal resolution. This may be an individual's best "first stop" in discussing a concern related to discrimination, harassment, or retaliation, particularly as discrimination and harassment resource coordinators will be knowledgeable about resources specific to their school or college.

OFFICE OF INSTITUTIONAL EQUITY AND ACCESSIBILITY

Office hours: 9 a.m.–5 p.m., M–F

203.432.0849

<https://oiea.yale.edu>

Any individual who would like to report a concern of discrimination, harassment, and/or retaliation may contact the Office of Institutional Equity and Accessibility (OIEA). OIEA staff are available to discuss concerns, University resources, and options for resolution, including informal resolution. Where appropriate, OIEA staff are also available to conduct investigations into complaints of discrimination, harassment, and/or retaliation committed by faculty or staff members. Talking with someone at OIEA about a concern or making a complaint does not automatically launch an investigation. It can, however, be an important step to alerting the University about a concern and getting assistance to resolve it.

SHARE: INFORMATION, ADVOCACY, AND SUPPORT

55 Lock Street, Lower Level

Appointments and drop-in hours: 9 a.m.–5 p.m., M–F

24/7 on-call service (for time-sensitive matters): 203.432.2000

<https://sharecenter.yale.edu>

SHARE, the Sexual Harassment and Assault Response and Education Center, has trained counselors available to members of the Yale community who wish to discuss

any past or current experience of sexual misconduct involving themselves or someone they care about. SHARE services are confidential and can be anonymous if desired. SHARE can provide professional help with medical and health issues (including accompanying individuals to the hospital or the police), as well as ongoing counseling and support for students. SHARE works closely with the University-Wide Committee on Sexual Misconduct, the Title IX Office, the Yale Police Department, and other campus resources and can provide assistance with initiating a formal or informal complaint.

If you wish to make use of SHARE's services, you can call the SHARE number (203.432.2000) at any time for a phone consultation or to set up an in-person appointment. You may also drop in on weekdays during regular business hours. Some legal and medical options are time-sensitive, so if you have experienced an assault, we encourage you to call SHARE and/or the Yale Police as soon as possible. Counselors can talk with you over the telephone or meet you in person at Acute Care in the Yale Health Center or at the Yale New Haven Emergency Room. If it is not an acute situation, you can also contact the SHARE staff via email at sharecenter@yale.edu.

TITLE IX COORDINATORS

203.432.6854

Office hours: 9 a.m.–5 p.m., M–F

<https://titleix.yale.edu>

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Sex discrimination includes sexual harassment, sexual assault, and other forms of sexual misconduct. The University is committed to providing an environment free from discrimination on the basis of sex or gender.

Yale College, the Graduate School of Arts and Sciences, and the professional schools have each designated one or more deputy Title IX coordinators, who work closely with the University Title IX Office and University Title IX Coordinator Elizabeth Conklin. Coordinators respond to and address concerns, provide information on available resources and options, track and monitor incidents to identify patterns or systemic issues, deliver prevention and educational programming, and address issues relating to gender-based discrimination and sexual misconduct within their respective schools. Coordinators also work with pregnant and parenting individuals to coordinate needed accommodations and to respond to instances of discrimination. Discussions with a deputy Title IX coordinator are private and information is only shared with other University officials on a need-to-know basis. In the case of imminent threat to an individual or the community, the coordinator may need to consult with other administrators or take action in the interest of safety. The coordinators also work closely with the SHARE Center, the University-Wide Committee on Sexual Misconduct, and the Yale Police Department.

UNIVERSITY-WIDE COMMITTEE ON SEXUAL MISCONDUCT

203.432.4449

Office hours: 9 a.m.–5 p.m., M–F

<https://uwc.yale.edu>

The University-Wide Committee on Sexual Misconduct (UWC) is an internal disciplinary board for complaints of sexual misconduct available to students, faculty, and staff across the University, as described in the committee's procedures. The UWC provides an accessible, representative, and trained body to fairly and expeditiously address formal complaints of sexual misconduct. UWC members can answer inquiries about procedures and the University sexual misconduct policy. The UWC is composed of faculty, senior administrators, and graduate and professional students drawn from throughout the University. UWC members are trained to observe strict confidentiality with respect to all information they receive about a case.

YALE POLICE DEPARTMENT

101 Ashmun Street

24/7 hotline: 203.432.4400

<https://your.yale.edu/community/public-safety/yale-police-department>

The Yale Police Department (YPD) operates 24/7 and is comprised of highly trained, professional officers. The YPD can provide information on available victims' assistance services and also has the capacity to perform full criminal investigations. If you wish to speak with Officer Gabrielle Cotto, the sensitive crimes & support coordinator, she can be reached at 203.432.9547 during business hours or via email at gabrielle.cotto@yale.edu. Informational sessions are available with the Sensitive Crimes & Support coordinator to discuss safety planning, available options, etc. The YPD works closely with the New Haven State's Attorney, the SHARE Center, the Title IX Office, and various other departments within the University. Talking to the YPD does not commit you to submitting evidence or pressing charges; with few exceptions, all decisions about how to proceed are up to you.

Office of International Students and Scholars

The Office of International Students and Scholars (OISS) coordinates services and support for Yale's nearly 6,000 international students, faculty, staff, and their dependents. OISS assists international students and scholars with issues related to employment, immigration, personal and cultural adjustment, and serves as a source of general information about living at Yale and in New Haven. As Yale University's representative for immigration concerns, OISS helps students and scholars obtain and maintain legal nonimmigrant status in the United States.

OISS programs, like daily English conversation groups, the Understanding America series, DEIB workshops, bus trips, and social events, provide an opportunity to meet members of Yale's international community and become acquainted with the many resources of Yale University and New Haven. Spouses and partners of Yale students and scholars will want to get involved with the International Spouses and Partners at Yale (ISPY) community, which organizes a variety of programs and events.

The OISS website (<http://oiss.yale.edu>) provides useful information to students and scholars prior to and upon arrival in New Haven, as well as throughout their stay at Yale. International students, scholars, and their families and partners can connect with OISS and the Yale international community virtually through Facebook.

OISS is a welcoming venue for students and scholars who want to check their email, grab a cup of coffee, and meet up with a friend or colleague. The International Center is OISS's home on Yale campus and is located at 421 Temple Street, across the street from Helen Hadley Hall. The International Center provides meeting space for student groups and a venue for events organized by both student groups and University departments. For more information about our hours, directions, and how to reserve space at OISS, please visit <https://oiss.yale.edu/about/hours-directions-parking>.

Libraries

Yale University Library comprises collections, spaces, technology, and people. The collections contain fifteen million print and electronic volumes in more than a dozen libraries and locations, including Sterling Memorial Library, Beinecke Rare Book and Manuscript Library, and the Anne T. and Robert M. Bass Library. Yale Library's resources also include extensive licensed e-resources and extraordinary special collections that represent the diversity of the human experience in forms ranging from ancient papyri to early printed books, rare film and music recordings, and a growing body of born-digital materials. More than five hundred staff members facilitate teaching, research, and practice with deep subject-area knowledge as well as expertise in digital humanities, geographic information systems, and the use and management of research data. Yale Library's preservation and conservation specialists develop and apply leading-edge technology to maintain collections, providing critical support for increased access to collections, an expanding exhibition program, and Yale's emphasis on teaching with primary sources. For more information, visit <https://library.yale.edu>.

Religious Resources

The religious and spiritual resources of the University serve all students, faculty, and staff of all faiths. These resources are coordinated and/or supported through the Chaplaincy (located on the lower level of Bingham Hall on Old Campus); the University Church in Yale in Battell Chapel, an open and affirming ecumenical Christian congregation; and Yale Religious Ministries, the on-campus association of professionals representing numerous faith traditions. This association includes the Saint Thomas More Catholic Chapel and Center at Yale and the Joseph Slifka Center for Jewish Life at Yale, and it supports Buddhist, Hindu, and Muslim life professionals; several Protestant denominational and nondenominational ministries; and student religious groups such as the Baha'i Association, the Yale Hindu Student Council, the Muslim Student Association, the Sikh Student Association, and many others. Hours for the Chaplain's Office during the academic term are Monday through Thursday from 8:30 a.m. to 11 p.m., Friday from 8:30 a.m. to 5 p.m., and Sunday evenings from 5 to 11. Additional information is available at <http://chaplain.yale.edu>.

Graduate-Professional Student Senate (GPSS)

The Graduate and Professional Student Senate (GPSS) is composed of student-elected representatives from each of the fourteen graduate and professional schools at Yale. Any student enrolled in these schools is eligible to run for a senate seat during fall elections. As a governing body, the GPSS advocates for student concerns and advancement within Yale, represents all graduate and professional students to the outside world, and

facilitates interaction and collaboration among the schools through social gatherings, academic and professional events, and community service. GPSS meetings occur on alternating Thursdays and are open to the entire graduate and professional school community, as well as representatives from the Yale administration. GPSS also oversees the management of the Gryphon, a graduate and professional student center, located at 204 York Street. The center provides office and event space for GPSS and other student organization activities, funds student groups, and houses Gryphon's Pub, open nightly. For more information, please visit <https://gpsenate.yale.edu>.

Cultural and Recreational Opportunities

CULTURAL OPPORTUNITIES

Keep up to date about University news and events by subscribing to the Yale Today e-newsletter, which is published five days a week, and/or the Best of the Week edition, which is published on Saturdays (<https://news.yale.edu/subscribe-e-newsletter>). They feature stories, videos, and photos from YaleNews (<http://news.yale.edu>) and other campus websites. Also visit the Yale Calendar of Events (<http://calendar.yale.edu>) and the University's Facebook, Twitter, Instagram, LinkedIn, and YouTube channels.

The Yale Peabody Museum, founded in 1866, houses more than fourteen million specimens and objects in ten curatorial divisions: Anthropology, Botany, Entomology, History of Science and Technology, Invertebrate Paleontology, Invertebrate Zoology, Mineralogy and Meteoritics, Paleobotany, Vertebrate Paleontology, and Vertebrate Zoology. The renowned collections continue to enrich teaching and learning and to inform groundbreaking new research. The museum's galleries are currently under renovation and will reopen in 2024 to display thousands of objects, including the first *Brontosaurus*, *Stegosaurus*, and *Triceratops* specimens ever discovered.

The Yale University Art Gallery was founded in 1832 as an art museum for Yale and the community. Today it is one of the largest museums in the country, holding nearly 300,000 objects and welcoming visitors from around the world. The museum's encyclopedic collection can engage every interest. Galleries showcase artworks from ancient times to the present, including vessels from Tang-dynasty China, early Italian paintings, textiles from Borneo, treasures of American art, masks from Western Africa, modern and contemporary art, ancient sculptures, masterworks by Degas, van Gogh, and Picasso, and more. Spanning one and a half city blocks, the museum features more than 4,000 works on display, multiple classrooms, a rooftop terrace, a sculpture garden, and dramatic views of New Haven and the Yale campus. The gallery's mission is to encourage an understanding of art and its role in society through direct engagement with original works of art. Programs include exhibition tours, lectures, and performances, all free and open to the public. For more information, please visit <https://artgallery.yale.edu>.

The Yale Center for British Art is a museum that houses the largest collection of British art outside the United Kingdom, encompassing works in a range of media from the fifteenth century to the present. It offers a vibrant program of exhibitions and events both in person and online. Opened to the public in 1977, the YCBA's core collection and landmark building—designed by architect Louis I. Kahn—were a gift to Yale University

from the collector and philanthropist Paul Mellon, '29. For more information, please visit <https://britishart.yale.edu>.

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 five hundred musical events take place at the University during the academic year. In addition to degree recitals by graduate students, the School of Music presents the Ellington Jazz Series, Faculty Artist Series, Horowitz Piano Series, New Music New Haven, Oneppo Chamber Music Series, and Yale in New York, as well as performances by the Yale Opera, Yale Philharmonia, Yale Choral Artists, and various YSM ensembles, along with concerts at the Morris Steinert Collection of Musical Instruments. The Institute of Sacred Music presents Great Organ Music at Yale, the Yale Camerata, the Yale Schola Cantorum, and many other special events. The Norfolk Chamber Music Festival/Yale Summer School of Music presents a six-week Chamber Music Session, along with the New Music Workshop and the Chamber Choir and Choral Conducting Workshop. Many of these concerts stream live on the School's website (<https://music.yale.edu>). Undergraduate organizations include the Yale Bands, Yale Glee Club, Yale Symphony Orchestra, and numerous other singing and instrumental groups. The Department of Music sponsors the Yale Collegium, Yale Baroque Opera Project, productions of new music and opera, and undergraduate recitals.

For theatergoers, Yale and New Haven offer a wide range of dramatic productions at such venues as the University Theatre, Yale Repertory Theatre, Yale Cabaret, Yale Residential College Theaters, Off Broadway Theater, Iseman Theater, Whitney Humanities Center, Collective Consciousness Theatre, A Broken Umbrella Theatre, Elm Shakespeare Company, International Festival of Arts and Ideas, Long Wharf Theatre, and Shubert Performing Arts Center.

RECREATIONAL OPPORTUNITIES

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 varsity basketball, volleyball, and gymnastics competitions; 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; the David Paterson Golf Technology Center; and other rooms devoted to fencing, gymnastics, rowing, wrestling, martial arts, general exercise, and dance. Numerous group exercise classes in dance, martial arts, zumba, yoga, pilates, spinning, HIIT and cardio, and sport skills are offered throughout the year. Yale undergraduates and graduate and professional school students may use the gym at no charge throughout the year. Memberships at reasonable fees are available for faculty, employees, postdocs, visiting associates, alumni, and members of the New Haven community. Memberships are also available for spouses and children of all members. Additional information is available at <https://sportsandrecreation.yale.edu>.

During the year, various recreational opportunities are available at the David S. Ingalls Rink, the McNay Family Sailing Center in Branford, the Yale Outdoor Education Center (OEC) in East Lyme, the Yale Tennis Complex, and the Yale Golf Course. All members of the Yale community and their guests may participate at each of these venues for a modest fee. Up-to-date information on programs, hours, and specific costs is available at <https://myrec.yale.edu>.

Approximately fifty club sports are offered at Yale, organized by the Office of Club Sports and Outdoor Education. Most of the teams are for undergraduates, but a few are available to graduate and professional school students. Yale students, faculty, staff, and alumni may use the OEC, which consists of 1,500 acres surrounding a mile-long lake in East Lyme, Connecticut. The facility includes overnight cabins and campsites, a pavilion and dining hall available for group rental, and a waterfront area with supervised swimming, rowboats, canoes, stand-up paddleboards, and kayaks. Adjacent to the lake, a shaded picnic grove and gazebo are available to visitors. In a more remote area of the facility, hiking trails loop the north end of the property; trail maps and directions are available on-site at the field office. The OEC is open from the third week in June through Labor Day. For more information, including mid-September weekend availability, call 203.432.2492 or visit <https://sportsandrecreation.yale.edu/outdoor-education-center-o>.

Throughout the year, Yale graduate and professional school students have the opportunity to participate in numerous intramural sports activities, including volleyball, soccer, and softball in the fall; basketball and volleyball in the winter; softball, soccer, ultimate, 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 online at <https://myrec.yale.edu>.

CITY AND COUNTRYSIDE

Only a short bike ride away from the center of New Haven lies the countryside of a state that is over one-half forest land. Farms, parks, lakes, trails, beaches, and nature preserves all await students seeking to spend a few hours away from their studies.

The most spectacular local features are the region's traprock ridges, the largest being East Rock, West Rock, and the Sleeping Giant. All three of these have been preserved as parks. East Rock and West Rock actually extend into New Haven, and their rusty-orange cliffs form a dramatic backdrop for the city. Sleeping Giant lies a pleasant ninety-minute bicycle ride from town.

New Haven is also surrounded by water supply forests. For a small annual fee, the Water Authority's twenty thousand acres of woods, traprock ridges, lakes, and streams are open for hiking, cross-country skiing, and fishing.

Tucked away in pockets off the main corridors of development lie some of the country's most fertile farmland. The Central Valley of New England, in which New Haven is situated, was once famous for its tobacco, onions, potatoes, apples, and seed growers. The remaining acres are now mostly in dairy farms and pick-your-own orchards, providing the region with rural scenery and fresh produce.

Farther out from the city, the land gets progressively hillier and less inhabited. The most dramatic region of the state is the Northwest Highlands of Litchfield County, where the School maintains its Great Mountain Forest Camp. Just a two-hour drive from New Haven, the Northwest Highlands boast the Appalachian Trail, New England's largest caves, a portion of the Taconic Mountains, and the vibrant fall colors of the Litchfield Hills.

But there is no need to travel so far to experience nature's bounty. New Haven itself is fortunate to have five major parks, including Edgewood Park, designed by Frederick Law Olmsted, Jr. Seventeen percent of New Haven is parkland, a figure that few cities in the world can match.

With so much nature near at hand and foot, New Haven comes close to maintaining the elusive ideal balance of the convenience and culture of the city with the pleasures of the countryside.

ENROLLMENT

MASTER'S DEGREES CONFERRED, 2023

MASTER OF ENVIRONMENTAL MANAGEMENT

Nisreen Abo-Sido
Ayush Acharya
Chiara Agnello
Jillian Aicher
Dan Alberga
Ananya Singh
Ryan Anderson
Zane Anthony
James Ash
Sidney Axtell
Rong Bao
Allyson Beach
Charlotte Benishek
Isobel Campbell
Molly Charles
Jesse Cohen
DeNeile Cooper
Ajay Culhane-Husain
Joshua De-Anda
Kelly Emery
Ismini Ethridge
Sam Feibel
Ashley Felix
Nishara Fernando
Natasha Feshbach
Colleen Flynn
Charly Frisk
Audra Gale
Adrian Garaycochea Mendoza del Solar
Cicy Geng
Sarah Gledhill
Marcella Hager
Ji-Won Ham
Robin Happel
Alex Healey
Phoebe Hering
Chase Howell
Lydia Jackson
Molly Johnson
Jess Jones
Coral Keegan
Michaela Kerxhalli-Kleinfield

Wyatt Klipa
Christina Kohler
Cameron Kritikos
Sumitra Kumar
Yoanna Lazarova
Gabe LePage
Yulan Lu
Mary Marshall
Ross Martin
Kelly McGlinchey
Isaac Merson
Annie Miller
Joe Miller
Aidan Mock
Jinali Mody
Sophie Morin
Eileen Nakahata
Veronica Nicholson
Nick Nugent
Senna Ohlsson
Justine Phillips-Gallucci
Shannon Pressler
Ub Qiu
Kiera Quigley
Kyle Richmond-Crosset
Elisse Roche
Gabriela Rodriguez
Molly Ryan
Raffaele Saposhnik
Arielle Schacter
Jun Shi
Tabitha Sookdeo
Zack Steigerwald Schnall
Yu Suzuki
Julia Sweatman
Maggie Thompson
Thibault Vermeulen
Mark Voll
Max Wasser
Lauren Wiggins
Kirsten Williams
Te'Yah Wright
Dorje Wu
Angela Xue
Steve Yannacone
Emma Zehner

MASTER OF ENVIRONMENTAL SCIENCE

Frannie Adams
Robert Anderson
Jeffrey Blay
Francis Commercon
Cloe Dickson
Matthew Duyst
Anna Feldman
Dylan Feldmeier
Daivie Ghosh
Emma Grover
Amalta Gupta
Vivian Hawkinson
Delaney Heileman
Neeti Jain
Seung Min Kim
Tessa Lee
Storm Lewis
Janey Lienau
Danning (Leilani) Lu
Mara MacDonell
Urmila Mallick
Tyler Mar
Annli Nakayama
Sydney Nelson
Jessie Peterman
Miriam Remshard
Rob Rioux
Brandon Sanchez
Liana Smale
Gabe Snashall
Tyler Stotland
Destiny Treloar
Jayson Velazquez
Jessie Wainer
Alisa White
Weixi Wu

MASTER OF FOREST SCIENCE

Leah Andino
Cameron McKenzie

MASTER OF FORESTRY

Fredrick Addai
Grace Bachmann
Emma Broderick
Thoko Changufu
Michael Freiburger
Joshua Friedlein

Chomri Khayi
Aaron Troncoso
Raqib Valli

PH.D. DEGREES CONFERRED, DECEMBER 2022

Ethan Teichman Addicott
Cintra Cady Agee
Kathryn Ann McConnell
Julia Monk

PH.D. DEGREES CONFERRED, MAY 2023

Laura Logozzo
Megan Sullivan
Harikrishnan Venugopalan Nair Radhamoni
Elisabeth Ballard (Eli) Ward

STUDENTS WORKING TOWARD MASTER'S DEGREES

MASTER OF ENVIRONMENTAL MANAGEMENT

Jennifer Adachi
Samantha Almonacid
Rakan Alonazy
Chloe Ames
Alberto Andrade
Cristina Baily
KhaYr Barry
Jorrit Becking
Cassiane Bohn Au
Liz Bridgwater
Grace Buie
Tanner Burgdorf
Kaley Casenhiser
Monica Charletta
Sirui Chen
Alex Cherry
Justin Chow
Kayleigh Crabb
Colin Custer
MJ Cyr-Ohngemach
Catharina Damrell
Arcadia Davies
Gabe Desmond
Raysico Duakin
Carl Philip Dybwad
Angela Ferguson
Sophie Friedfeld-Gebaide
Nailah Garard
Pratima Garg
Maude Gibbins

Wes Gobar
Lauren Gomez Cullen
Daniel Gonzalez Pena
Danny Haber
Jonathon Haist
Gina Hervey
Tais Idi-Infante
Ayoosh Jadhav
Maria Jiang
Sofia John
Rennie Jones
Clair Jung
Christina Lee
Hwayeon Lee
Anna Lenaker
Angel Li
Xiaoshu Lin
Violet Low-Beinart
Jamie Lowrey
Katie Lund
Brooke Mercaldi
Phoebe Merrick
Harrison Meyer
Gabriella Mickel
Lorena Miranda Guevara
Matias Montaldo Barral
Christy Mueller
Claire Nichols
Jigchen Norbu
Bennett Olupo
August Organschi
Lu Parra Arce
Lauren Phipps
Sophia Ptacek
Jiarong Qi
Jonathan Rak
Jeremy Ravenelle
Anika Reynar
Henry Ritter
Connor Rockett
Anamaria Rodriguez Garcia
Calla Rosenfeld
Eduardo Rotama
Carolina Sanchez Badini
Sydney Savard
Leopold Schwarz Schutte
Rowan Sharkey
Elana Shi

Athena Sofides
Jinsui Song
Anna Stemberger
Sonora Taffa
Alison Thompson
Madeleine Tran
Natalia Turkel
Carlos Velazquez
Stephanie von Ungern Sternberg Prufer
Bisrantee Wagle
Yinhao Wang
Josie Watson
Alex Weyerhaeuser
Jin Wu
Quincy Yangh
Susana Yepes Bernal

MASTER OF ENVIRONMENTAL SCIENCE

Anne Frances Durfee
Phoebe Ferguson
Lily Fillwalk
Xiyao Fu
Allie Garrett
Germar Gonzalez
Vincent Haller
Zachary Herring
Tara Hoda
Junhan Hu
Julia Jacobson
Ayushi Khan
Zoe Lee-Park
Jinyue Li
Jack Markowitz
Esaac Mazengia
Katie Michels
Emil Moldovan
PwintPhyu Nandar
Elizabeth Nowlin
Shannon Regan
Gino Rivera Bulnes
Anastasia Rubio
Erin Shives
Bibek Shrestha
Eliana Stone
Jimena Terrazas Lozano
Joseph Toman
Kathleen Voight
Les Welker
Amanda Wik

Sam Wilson
Cate York
Mingyu Zhang
Nikki Zhang

MASTER OF FOREST SCIENCE

Michael Culbertson
Kenna Ellis
Kumba Jammeh
Amaya Sathurusinghe
Yeim We

MASTER OF FORESTRY

Shaylyn Austin
Jake Barker
Julia Chen
Mary Katherine DeWane
Grace Dominic
Alice Gerow
Tristan Irwin
Jane Jacoby
Jennifer Jung
Sean Mahoney
Amelia Napper
Bernard Nyanzu
Austin Pruitt
Diana Satkauskas
Hayden Stebbins
Zane Weinberger
Brandon Wilson Radcliffe

STUDENTS WORKING TOWARD PH.D. DEGREES

Nadia Batool Ahmad
Yara Abdulrahman Alshwairikh
Kristy Marie Barnes Ferraro
Nadav Bendavid
Aishwarya Bhandari
Logan Billet
Amma Asantewaa Agyei Boakye
Aleca Borsuk
Samara Meade Brock
Sarah Louise Brown
Jesse Bryant
Lachlan Byrnes
Mary Burak
Paul Burow
Scott Matthew Carpenter
Lelin (Eileen) Chen
Damaris Avery Chenoweth

Hayon Michelle Choi
Jacob Hunter Craft
Arun Vinod Dayanandan
Apurva Venkata Naga Sundara Duddu
Logan Mace Emlet
Alicia Renee Entem
Lucas Epstein
Christian Espinosa Schatz
Manuel Romeo Flores III
Yufang Gao
Jonathan Gewirtzman
Leo Maria Goldsmith
Edgardo Gonzalez
Matthew David Gordon
Gracia Hadiwidjaja
Thomas Harris
Chris Hebdon
Momoko Ishii
Kazi Nazrul Islam
Md Saiful Islam
Dylan Robert Judd
Lav Kanoi
Koichi Steven Kanaoka
Aishwarya Kazi
Jocelyn La Fleur
Simon Fridtjof Lang
Manon Lefèvre
Jinge Li
Janey Rose Lienau
Urmila Basu Mallick
Ross Duntley Martin
Katherine Adelle Meier
Sydney Nelson
Laura Obando Cabrera
Lauren Anne Oliver
Katherine Downey (Kaggie) Orrick
Gabriel Simeon Oltean
Jacob Donald James Peters
Alexander Polussa
Meredith Reba
Robert A. Rioux IV
Benjamin Mugtari Saalidong
Raffaele Sindoni Saposhnik
Muhammad Shayan
Karam Sheban
Lauryn Sherman
Helen Siegel
Rohan Daniel Simkin

Evan Singer
Audrey Margarita Smith
Nathalie Sommer
Rory Stewart
Akshay Surendra
Julia Talamo
Wyatt Tatge
Samantha Michelle Tracy
Destiny Treloar
Andres Eduardo Triana Solorzano
Shou En (Samuel) Tsao
Uthara Vengrai
Andrew Johnathan Vogt
Katy Mary Wilson
David J. Woodbury
Youyi Xu
Shoko Yamada
Yichen Yang
Joseph Zailaa
Keer Zhang
Yong Zhao
Wen Zhou
Laura Zwicker

THE WORK OF YALE UNIVERSITY

The work of Yale University is carried on in the following schools:

Yale College Est. 1701. Courses in humanities, social sciences, natural sciences, mathematical and computer sciences, and engineering. Bachelor of Arts (B.A.), Bachelor of Science (B.S.).

For additional information, please visit <https://admissions.yale.edu>, email student.questions@yale.edu, or call 203.432.9300. Postal correspondence should be directed to Office of Undergraduate Admissions, Yale University, PO Box 208234, New Haven CT 06520-8234.

Graduate School of Arts and Sciences Est. 1847. 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 visit <https://gsas.yale.edu>, email graduate.admissions@yale.edu, or call the Office of Graduate Admissions at 203.432.2771. Postal correspondence should be directed to Office of Graduate Admissions, Yale Graduate School of Arts and Sciences, PO Box 208236, New Haven CT 06520-8236.

School of Medicine Est. 1810. 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. Five-year combined program leading to Doctor of Medicine and Master of Health Science (M.D./M.H.S.). Combined program with the Graduate School of Arts and Sciences leading to Doctor of Medicine and Doctor of Philosophy (M.D./Ph.D.). Master of Medical Science (M.M.Sc.) from the Physician Associate Program and the Physician Assistant Online Program.

For additional information, please visit <https://medicine.yale.edu/edu>, email medical.admissions@yale.edu, or call the Office of Admissions at 203.785.2643. Postal correspondence should be directed to Office of Admissions, Yale School of Medicine, 367 Cedar Street, New Haven CT 06510.

Divinity School Est. 1822. 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 visit <https://divinity.yale.edu>, email div.admissions@yale.edu, or call the Admissions Office at 203.432.5360. Postal correspondence should be directed to Admissions Office, Yale Divinity School, 409 Prospect Street, New Haven CT 06511.

Law School Est. 1824. Courses for college graduates. Juris Doctor (J.D.). For additional information, please visit <https://law.yale.edu>, email admissions.law@yale.edu, or call the Admissions Office at 203.432.4995. Postal correspondence should be directed to Admissions Office, Yale Law School, PO Box 208215, New Haven CT 06520-8215.

Graduate Programs: Master of Laws (LL.M.), Doctor of the Science of Law (J.S.D.), Master of Studies in Law (M.S.L.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences. For additional information, please visit <https://law.yale.edu>, email gradpro.law@yale.edu, or call the Graduate Programs Office at 203.432.1696. Postal correspondence should be directed to Graduate Programs, Yale Law School, PO Box 208215, New Haven CT 06520-8215.

School of Engineering & Applied Science Est. 1852. Courses for college graduates. Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://seas.yale.edu>, email grad.engineering@yale.edu, or call 203.432.4252. Postal correspondence should be directed to Office of Graduate Studies, Yale School of Engineering & Applied Science, PO Box 208292, New Haven CT 06520-8292.

School of Art Est. 1869. Professional courses for college and art school graduates. Master of Fine Arts (M.F.A.).

For additional information, please visit <http://art.yale.edu>, email artschool.info@yale.edu, or call the Office of Academic Administration at 203.432.2600. Postal correspondence should be directed to Office of Academic Administration, Yale School of Art, PO Box 208339, New Haven CT 06520-8339.

School of Music Est. 1894. Graduate professional studies in performance and composition. Certificate in Performance (CERT), Master of Music (M.M.), Master of Musical Arts (M.M.A.), Artist Diploma (A.D.), Doctor of Musical Arts (D.M.A.).

For additional information, please visit <https://music.yale.edu>, email gradmusic.admissions@yale.edu, or call the Office of Admissions at 203.432.4155. Postal correspondence should be directed to Yale School of Music, PO Box 208246, New Haven CT 06520-8246.

School of the Environment Est. 1900. 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 Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://environment.yale.edu>, email admissions.yse@yale.edu, or call the Office of Admissions at 800.825.0330. Postal correspondence should be directed to Office of Admissions, Yale School of the Environment, 300 Prospect Street, New Haven CT 06511.

School of Public Health Est. 1915. Courses for college graduates. Master of Public Health (M.P.H.). Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://publichealth.yale.edu>, email ysph.admissions@yale.edu, or call the Admissions Office at 203.785.2844.

School of Architecture Est. 1916. Courses for college graduates. Professional and post-professional degree: Master of Architecture (M.Arch.); nonprofessional degree: Master

of Environmental Design (M.E.D.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://www.architecture.yale.edu>, email gradarch.admissions@yale.edu, or call 203.432.2296. Postal correspondence should be directed to the Yale School of Architecture, PO Box 208242, New Haven CT 06520-8242.

School of Nursing Est. 1923. Courses for college graduates. Master of Science in Nursing (M.S.N.), Post Master's Certificate (P.M.C.), Doctor of Nursing Practice (D.N.P.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://nursing.yale.edu> or call 203.785.2389. Postal correspondence should be directed to Yale School of Nursing, Yale University West Campus, PO Box 27399, West Haven CT 06516-0972.

David Geffen School of Drama Est. 1925. Courses for college graduates and certificate students. Master of Fine Arts (M.F.A.), Certificate in Drama, Doctor of Fine Arts (D.F.A.).

For additional information, please visit <https://drama.yale.edu>, email dgsd.admissions@yale.edu, or call the Registrar/Admissions Office at 203.432.1507. Postal correspondence should be directed to David Geffen School of Drama at Yale University, PO Box 208325, New Haven CT 06520-8325.

School of Management Est. 1976. Courses for college graduates. Master of Business Administration (M.B.A.), Master of Advanced Management (M.A.M.), Master of Management Studies (M.M.S.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit <https://som.yale.edu>. Postal correspondence should be directed to Yale School of Management, PO Box 208200, New Haven CT 06520-8200.

Jackson School of Global Affairs Est. 2022. Courses for college graduates. Master in Public Policy (M.P.P.) and Master of Advanced Study (M.A.S.).

For additional information, please visit <https://jackson.yale.edu>, email jackson.admissions@yale.edu, or call 203.432.6253.

M.E.SC./M.F.S. THESIS RESEARCH NUMBERS

Faculty	ENV Thesis Research Number
Anisfeld, Shimon	3010
Ashton, Mark	3020
Bell, Michelle	3035
Benoit, Gaboury	3040
Bradford, Mark	3054
Brando, Paulo	3060
Brodersen, Craig	3072
Burke, Ingrid	3073
Carpenter, Carol	3110
Chertow, Marian	3130
Comita, Liza	3143
Doolittle, Amity	3158
Dove, Michael	3160
Duguid, Marlyse	3175
Esty, Daniel	3180
Farrell, Justin	3185
Fenichel, Eli	3195
Gillingham, Kenneth	3215
Gregoire, Timothy	3240
Harris, Nyeema	3246
Kotchen, Matthew	3257
Lauenroth, William	3261
Lee, Xuhui	3260
Leiserowitz, Anthony	3263
Malone, Sparkle	3290
Marlon, Jennifer	3300
Mendelsohn, Robert	3320
Orefice, Joseph	3345
Queenborough, Simon	3350
Rao, Narasimha	3363
Raymond, Peter	3364
Saiers, James	3390
Sanford, Luke	3393
Schmitz, Oswald	3400
Seto, Karen	3408
Skelly, David	3420

Taylor, Dorceta	3450
Torres, Gerald	3462
Vedder, Amy	3469
Wargo, John	3470
Yao, Yuan	3488
Zimmerman, Julie	3500

PROJECT COURSES

Faculty	ENV Project Course Number
Anastas, Paul	1008
Anisfeld, Shimon	1010
Ashton, Mark	1020
Bacher, Jessica	1030
Bell, Michelle	1035
Benoit, Gaboury	1040
Berlyn, Graeme	1050
Boyd, Peter	1052
Bradford, Mark	1054
Brando, Paulo	1060
Brodersen, Craig	1072
Carpenter, Carol	1110
Chertow, Marian	1130
Comita, Liza	1143
Cort, Todd	1147
DeCew, Stuart	1153
Decker, Mary Beth	1155
Doolittle, Amity	1158
Dove, Michael	1160
Duguid, Marlyse	1175
Esty, Daniel	1180
Farrell, Justin	1185
Fenichel, Eli	1195
Garen, Eva	1203
Gentry, Bradford	1210
Gillingham, Kenneth	1215
Gregoire, Timothy	1240
Gross, Daniel	1243
Harris, Nyeema	1246
Klee, Robert	1253
Klinkenborg, Verlyn	1256
Kooris, David	1255
Kotchen, Matthew	1257
Kuebbing, Sara	1258
Kysar, Douglas	1259
Lauenroth, William	1261
Lee, Xuhui	1260

Leiserowitz, Anthony	1263
Lifset, Reid	1270
Malone, Sparkle	1290
Marlon, Jennifer	1300
Mendelsohn, Robert	1320
Miatto, Alessio	1325
Montagnini, Florencia	1330
Murphy-Dunning, Colleen	1335
Narasimha, Rao	1363
Orefice, Joseph	1345
Queenborough, Simon	1350
Raymond, Peter	1364
Reuning-Scherer, Jonathan	1380
Saiers, James	1390
Sanford, Luke	1393
Schmitz, Oswald	1400
Schwarz, Andrew	1402
Seto, Karen	1408
Skelly, David	1420
Smiley Smith, Sara	1427
Smith, Ronald	1430
Taylor, Dorceta	1450
Tomlin, Dana	1460
Torres, Gerald	1462
Vedder, Amy	1469
Wargo, John	1470
Weber, Albert William	1473
Wood, Stephen	1475
Yao, Yuan	1488
Zimmerman, Julie	1500

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YALE UNIVERSITY CAMPUS SOUTH & YALE MEDICAL CENTER



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Inquiries concerning these policies may be referred to the Office of Institutional Equity and Accessibility, 203.432.0849; equity@yale.edu. For additional information, please visit <https://oiea.yale.edu>.

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Questions regarding Title IX may be referred to the university's Title IX coordinator, Elizabeth Conklin, at 203.432.6854 or at titleix@yale.edu, or to the U.S. Department of Education, Office for Civil Rights, 8th Floor, 5 Post Office Square, Boston MA 02109-3921; tel. 617.289.0111, TDD 800.877.8339, or ocr.boston@ed.gov. For additional information, including information on Yale's sexual misconduct policies and a list of resources available to Yale community members with concerns about sexual misconduct, please visit <https://titleix.yale.edu>.

In accordance with federal and state law, the University maintains information on security policies and procedures and prepares an annual campus security and fire safety report containing three years' worth of campus crime statistics and security policy statements, fire safety information, and a description of where students, faculty, and staff should go to report crimes. The fire safety section of the annual report contains information on current fire safety practices and any fires that occurred within on-campus student housing facilities. Upon request to the Yale Police Department at 203.432.4400, the University will provide this information to any applicant for admission, or to prospective students and employees. The report is also posted on Yale's Public Safety website; please visit <http://your.yale.edu/community/public-safety>.

In accordance with federal law, the University prepares an annual report on participation rates, financial support, and other information regarding men's and women's intercollegiate athletic programs. Upon request to the Director of Athletics, PO Box 208216, New Haven CT 06520-8216, 203.432.1414, the University will provide its annual report to any student or prospective student. The Equity in Athletics Disclosure Act (EADA) report is also available online at <http://ope.ed.gov/athletics>.

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