

Welcome to SEAS!

Admitted Student Visit Day

Specialization

Presenter

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Coordinator

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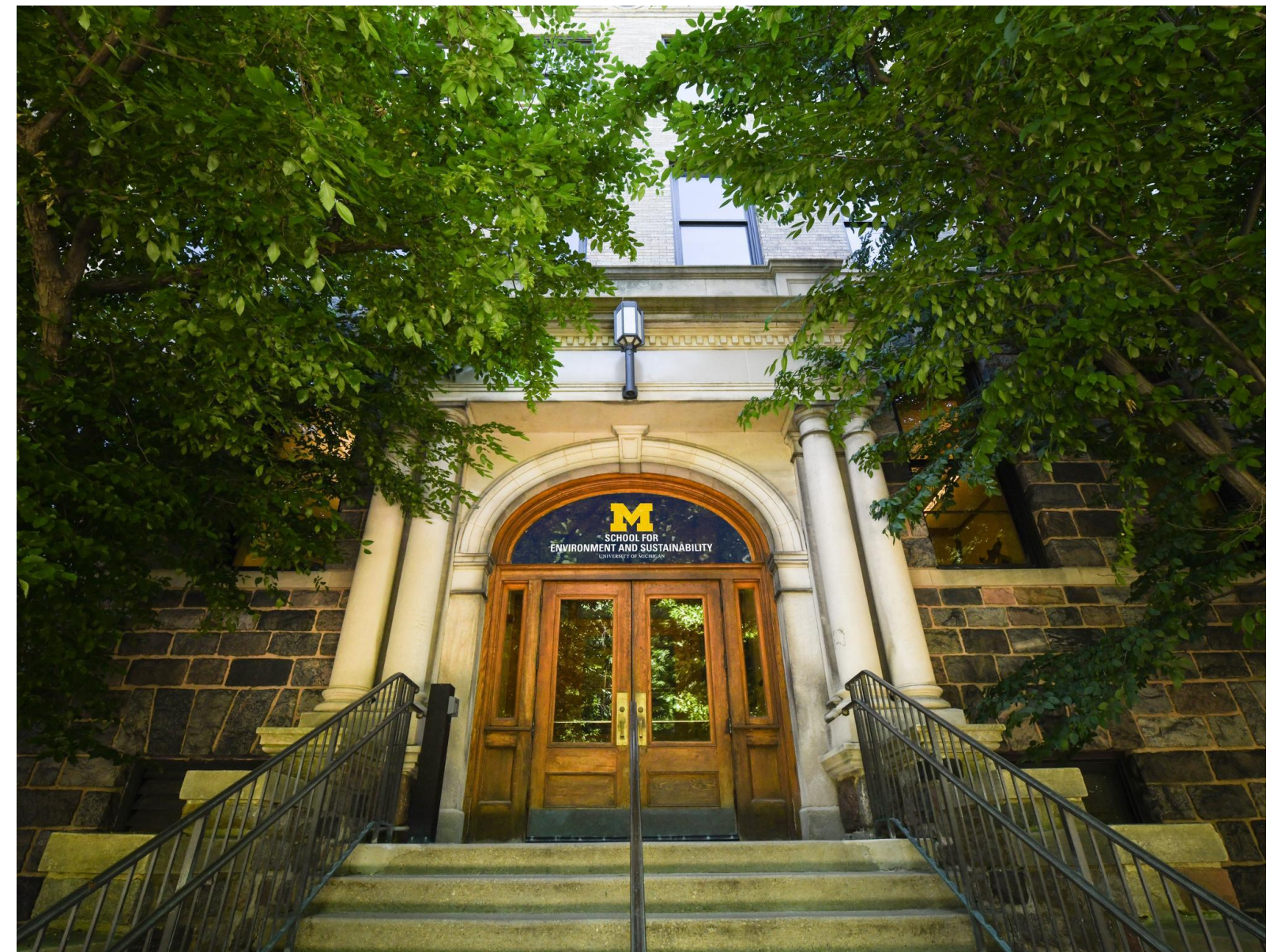
seas.umich.edu

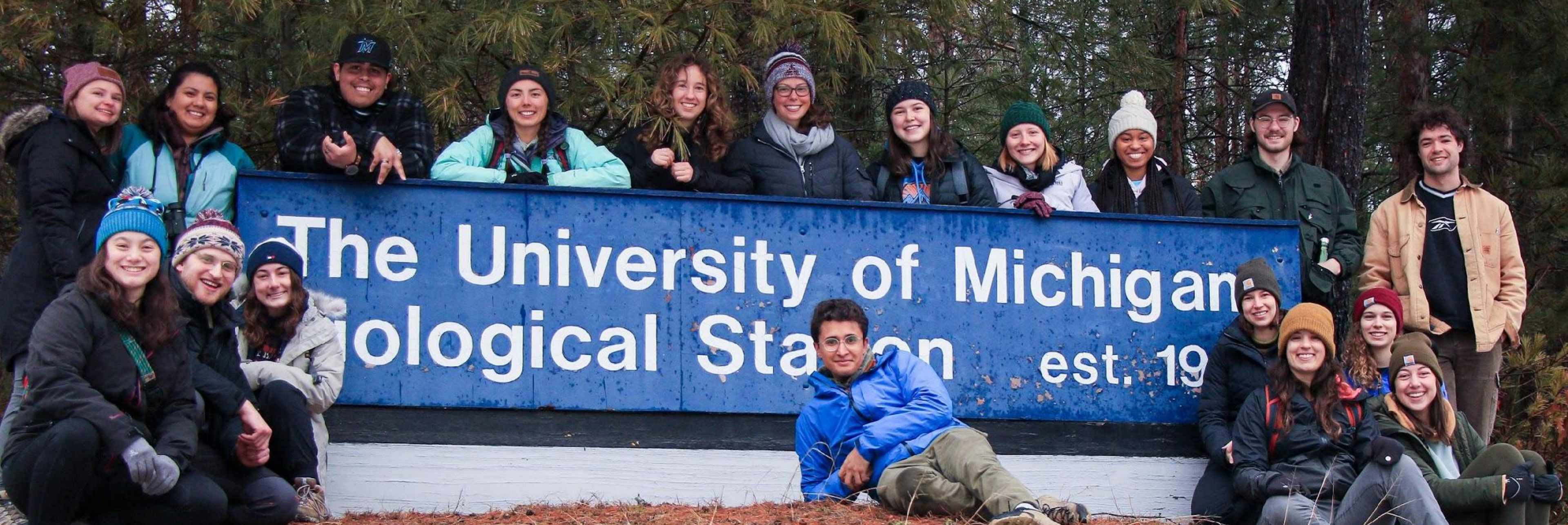
Agenda

01 Specialization Overview

02 Q & A

**03 Small group discussions by
research topic**





Ecosystem Science & Management

As a student in this interdisciplinary field of study, you will become a **change-driven scientist** capable of developing **informed and novel approaches** to the sustainable management of a full range of **aquatic and terrestrial ecosystems** and settings, from parks and protected areas to urbanized and agricultural landscapes and watersheds.

ESM Program Goal

Informed solutions to environmental challenges

Develop skills & knowledge to understand and preserve biodiversity, restore and transform ecosystems, and sustain natural resources in the face of global to local change



Advising team: Faculty - Lecturers - Research Scientists



Sara Adlerstein

Associate Research Scientist



Stella Cousins

Research Scientist,
Lecturer



Karen Alofs

Associate Professor



Allen Burton

Professor



Gregory Dick

CIGLR Director,
Professor



Kristy Ferraro

Presidential Postdoctoral
Fellow



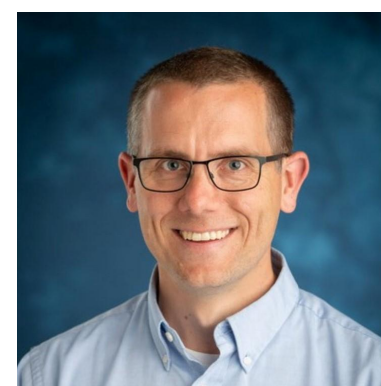
**Ayumi
Fujisaki-Manome**

Research Scientist



**Johannes
Foufopoulos**

Professor



Casey Godwin

Research Scientist



Inés Ibáñez

Professor



Michael Kost

Lecturer



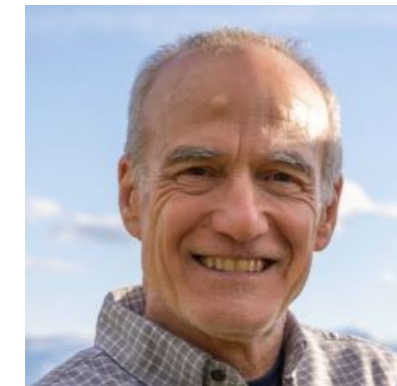
Silvia Newell

Michigan Sea Grant Dir.,
Professor



Ivette Perfecto

Professor



Peter Reich

Professor, IGCB Director



Sheila Schueller

Lecturer & Academic
Program Specialist



Brian Weeks

Associate Professor

Systems: lakes/streams/wetlands, forests, prairies, global

Research areas: Biodiversity & ecosystem services, land use change, sustainable food systems, invasive species, drought impacts, extreme events, water resources, ecosystem change, climate change, stressors/chemicals.

Fields: population/community/ecosystem ecology, ecosystem management, conservation, restoration, risk assessment, sustainable systems.

ESM CURRICULUM



- SEAS Core (2): Ecological (509) and Social (510) Systems
- Ecosystem Science and Management Core (4)
 - EAS 507- Interpreting Research in ESM
- Analytics (2)

- Electives (1+)
- Capstone
- 42 credit hr minimum

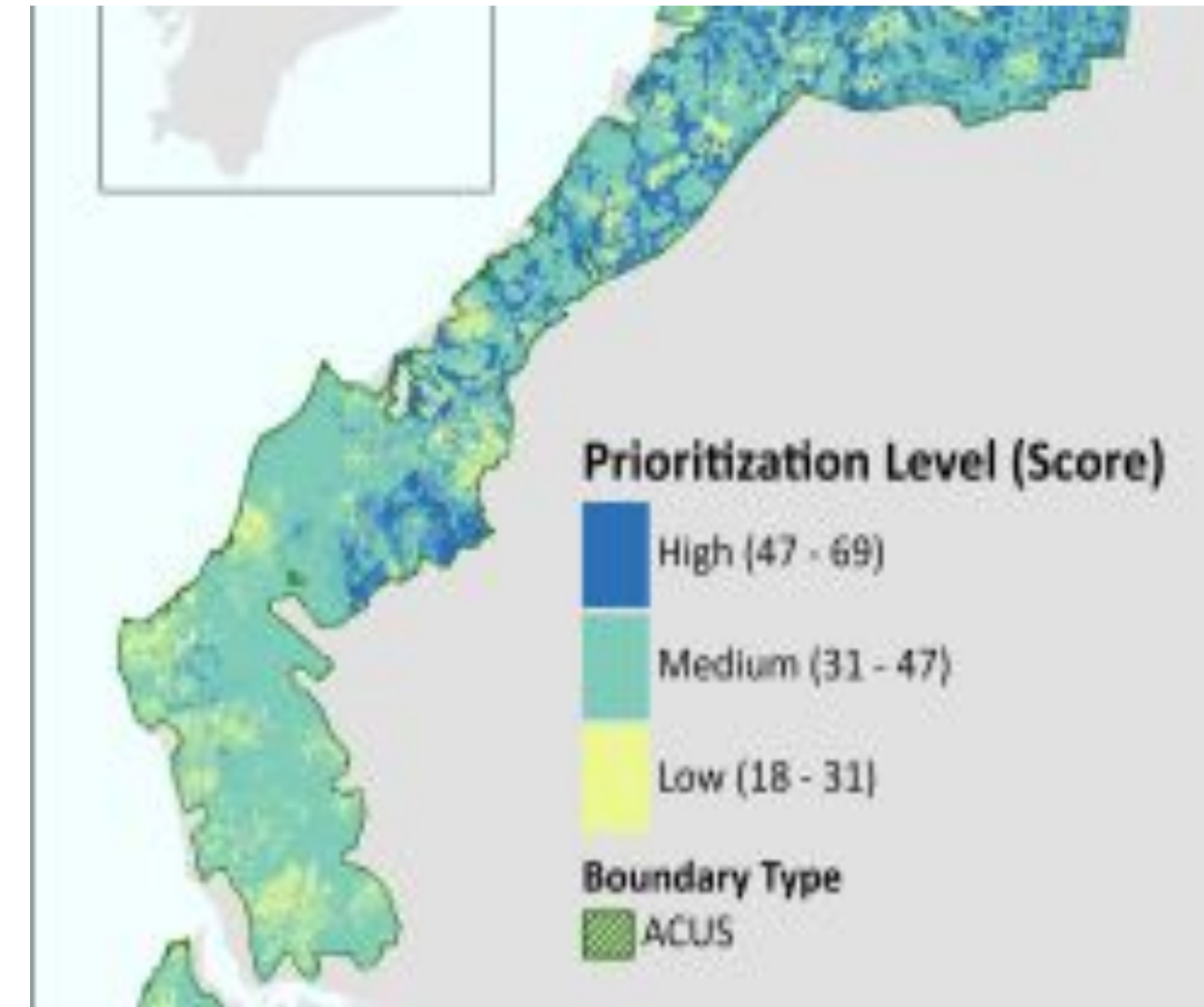
Field-Based Courses

University Biological Station, SEAS Field Properties



Lab-Based Courses

Wet Labs, Computer Labs, Greenhouse



ESM Course Categories

knowledge of a
specific
ecosystem,
organism

Organismal/Ecosystem

- Soil Ecology
- Fish Biology/Ecology
- Woody Plants
- Fluvial Ecosystems
- Biogeochemical Cycling
-

ESM Course Categories

management,
project
implementation
/assessment

Management

- Wildlife Ecology and Mag.
- Conservation Biology
- Restoration Ecology
- Farming systems
- Ecological Risk Assessment
- Water resources
-

ESM Course Categories

analytical,
technical,
other skills

Beyond ESM

- GIS & Remote Sensing
- Analysis and Modeling of Env Data
- Applied Ecosystem Modeling
- Negotiations
- Environmental Policy, Politics and Organizations

Course Mapping for the Job Market



Land management
and conservation



Boundary
organizations/non-
profits



Wildlife
management



Aquatic resources
management



Environmental
consulting



Conservation
policy and planning

Course Mapping for the Job Market



Aquatic resources management

- Biogeochemical cycling
- Ecology of fishes
- Conservation biology
- Fluvial ecosystems
- Science and Management of the Great Lakes
- Fisheries Science and Management



M.S. Capstone Options

Project

- Interdisciplinary team (3 to 7 students)
- Help client solve a real-world issue (research + practice)
- Report and presentation

Thesis

- Individually with Faculty Advisor
- Conduct research to answer a scientific question
- Peer-reviewed publication(s)

Practicum

- Individually with Faculty Advisor
- Help client solve a real-world issue
- Report and presentation

Non-opus

- For students with ample professional experience
- Only coursework, take additional classes



ESM Examples

Make your choice first semester

Project

- *Designing and Implementing Novel Reforestation Agroforestry Systems in Nicaragua's Tropical Dry Forest*

Thesis

- *Plant-mycorrhizal fungi associations along an urbanization gradient: implications for tree seedlings survival*

Practicum

- *Conservation and Management Planning for Livingston Land Conservancy*

ESM Resources:

Coursework, Research & Beyond

- **Institute for Global Change Biology**
- **Great Lakes**
 - **Cooperative Institute for Great Lakes Research**
 - **Michigan Sea Grant**
- **SEAS Field Properties**
- **Certificates, Specializations, Dual Degree**



Institute for Global Change Biology



Mission

- Build community and critical mass
- Train the current and next generation of global change scholars
- Do good science
- Help find solutions to our global crises



Working Groups

- Pollen-associated health effects in a changing climate
- Global change and migratory birds
- Soil-fungal community responses to climate change
- Effects of human-mediated habitat loss on functional biodiversity



Research Themes

- Biodiversity & Function
- Climate Change & Ecosystem Health
- Climate Change & Human Health
- Natural-Human Systems
- Sustainable Food Systems
- Climate - Ecosystem Feedbacks



Get Involved

- Spans a range of schools (e.g., SEAS, EEB, ENS, SPH, CLaSP, EES) and institutions (e.g., Michigan, Minnesota, Colorado State)
- Students receive small research grants, travel grants and summer fellowships



The Great Lakes University



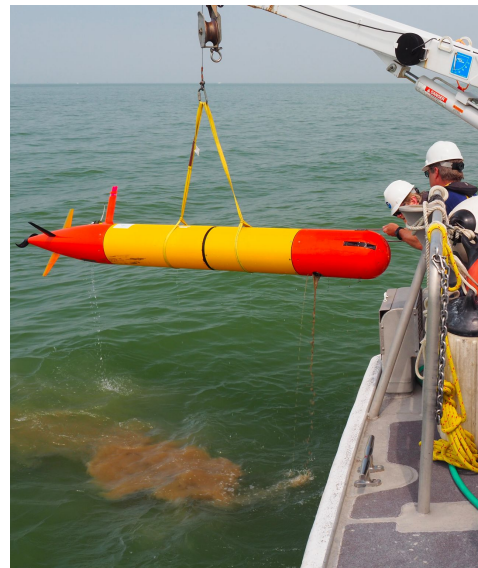
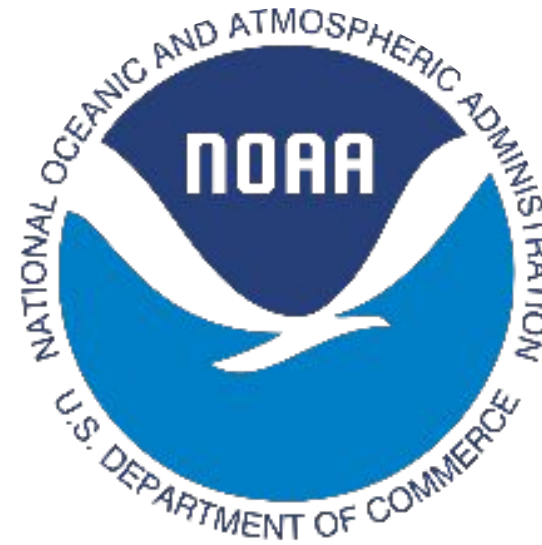
Casey Godwin
Research Scientist

Research topics

- Climate change
- Hydrodynamics, ice
- Hydrology, water levels
- Harmful algal blooms
- Food web, invasive species
- Oil spills
- Hypoxia

Training opportunities

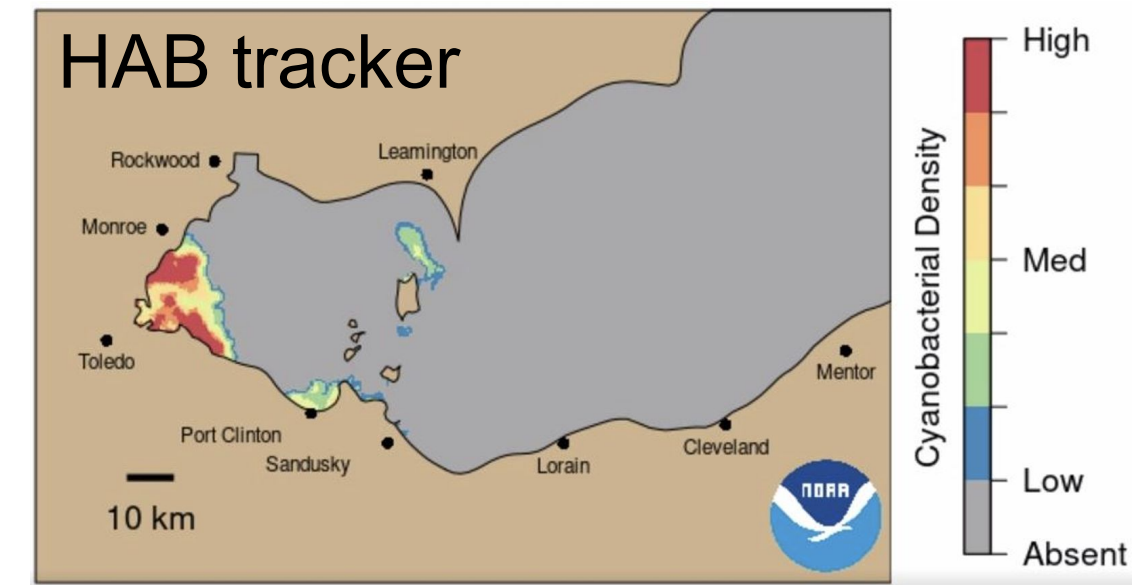
- Coastal & climate modeling
- Lab & field work
- Artificial intelligence & ML
- Interdisciplinary science
- Work with federal agencies, companies, NGOs.
- Research engagement



monitoring



experiments



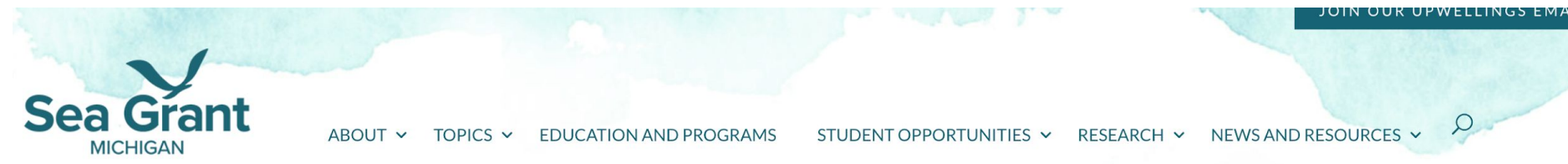
modeling and forecasting

Michigan Sea Grant



Silvia Newell

**Michigan Sea Grant
Dir., Professor**

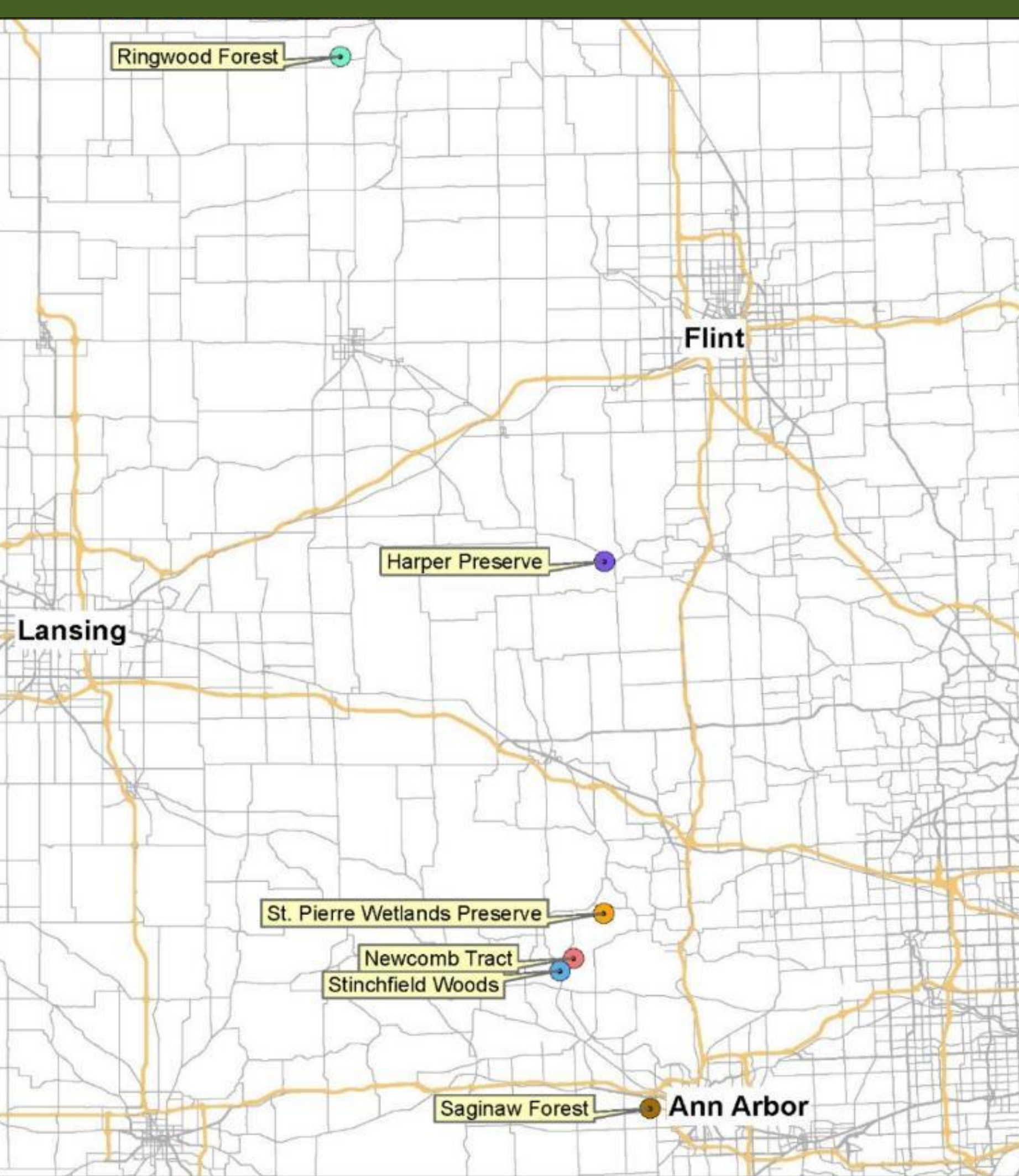


**Dedicated to the protection and sustainable use of the
Great Lakes and coastal resources.**

Michigan Sea Grant is a cooperative program of the University of Michigan, Michigan State University, and the National Oceanic and Atmospheric Administration. We fund research, education, and outreach projects designed to foster science-based decisions about the use and conservation of Great Lakes resources.



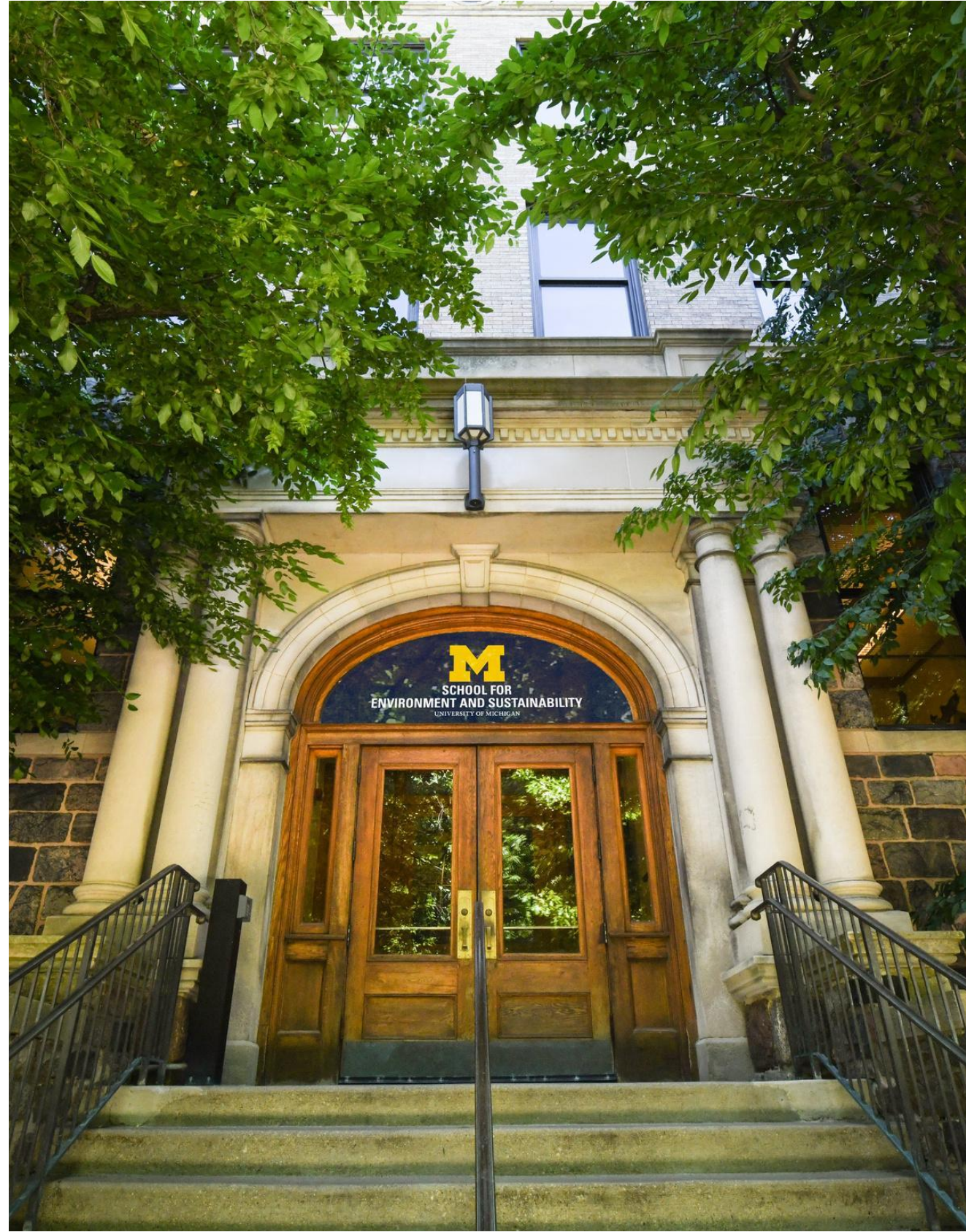
SEAS Field Properties



	Miles to Dana	Time to Dana	Total Acres
Saginaw Forest	4.4 mi	13 min	80
Stinchfield Woods	18.3 mi	26 min	812
Newcomb Tract	18 mi	27 min	207
St. Pierre Wetlands	18 mi	28 min	130
Harper Preserve	42 mi	47 min	373
Ringwood Forest	93.9 mi	1hr 37	160
			1,762 acres

St. Pierre Wetland Drone Imagery





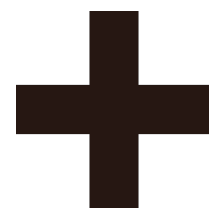
Tailoring your Degree *Beyond* *your Specialization*

Graduate Certificates

- Sustainability (with Focus areas)
- Industrial Ecology
- Spatial Analysis
- Environmental Justice
- Climate Change Solutions

Adding another specialization

**Environment &
Sustainability
MS**



Behavior, Education and Communication

Environmental Policy and Planning

Environmental Justice

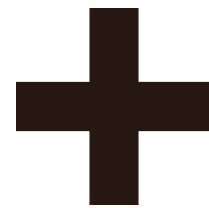
Geospatial Data Sciences

Sustainable Development

Sustainable Systems

Dual Degrees

**Environment &
Sustainability
MS**



Master of science in Engineering (MSE)

Master of Business Administration (MBA) - Erb

Master of Urban and Regional Planning (MURP)

Master of science in Public Policy (MPP)

Law - Juris doctor (JD)

Self-initiated dual degrees

Careers: All Sectors

Academia

- PhD Programs
- Faculty positions

For Profits

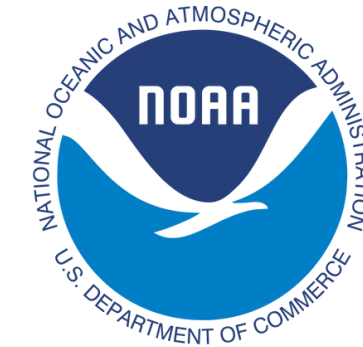
- Businesses
- Consulting firms
- Quantum spatial

Federal & State Agencies

- NASA
- NOAA
- US EPA
- USFWS
- DOE
- State EPAs
- DNRs
- Local governments

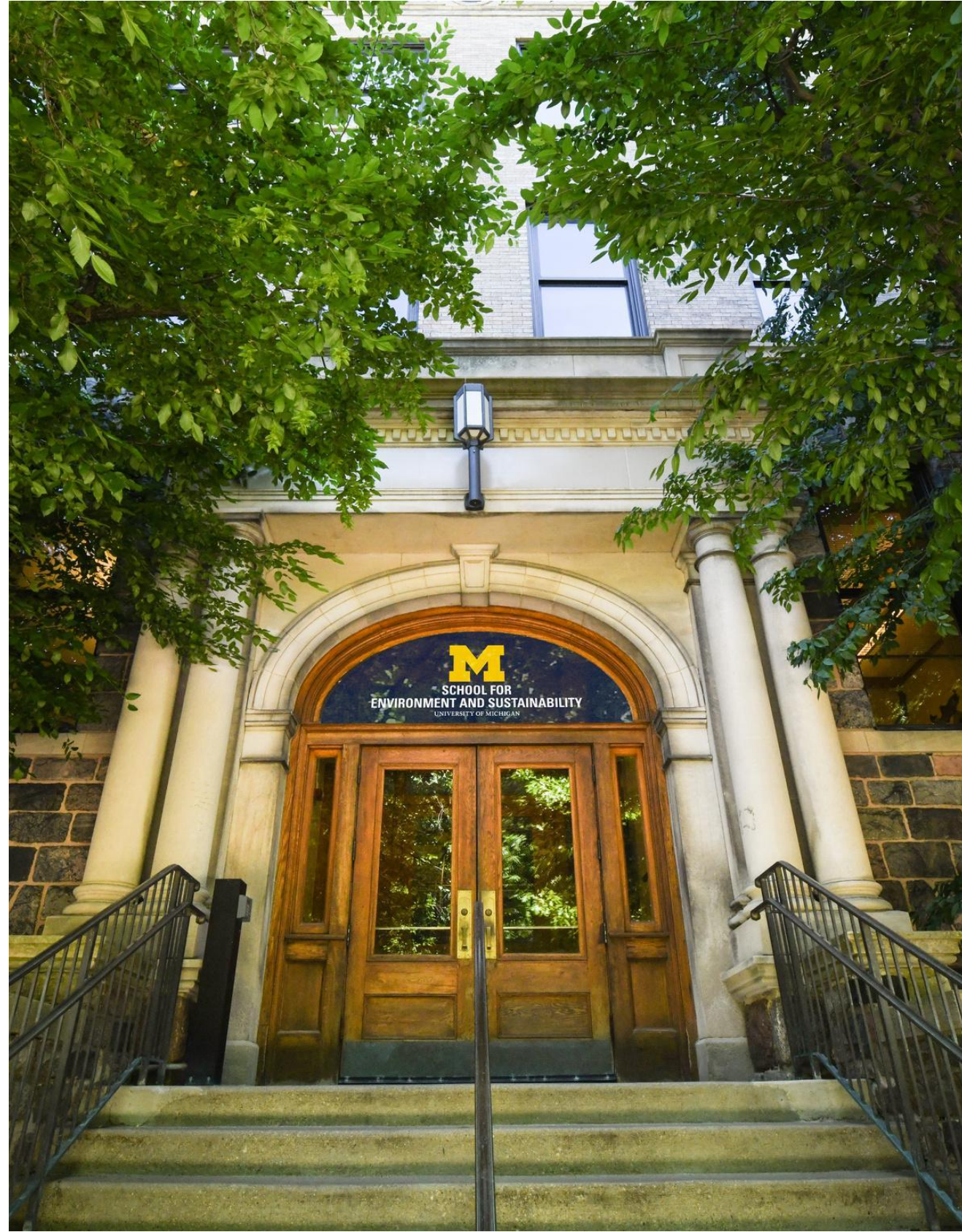
Non Profits

- The Nature Conservancy
- World Resources Institute
- World Wide Fund for Nature
- Ducks Unlimited



WORLD
RESOURCES
INSTITUTE





Alumni

All Sectors

- **Rakhi Kasat**, Southeast Asia Program Manager, US EPA
- **Kesiree Thiamkeelakul**, Michigan Dept Natural Resources
- **Paul Winters**, Presidential Management Fellow, White House
- **Shelly Hudson**, Environmental Scientist, EA Engineering
- **Kat Superfisky**, Executive Director, Grown in L.A.; Adjunct Instructor, UCLA
- **Drew Peltier**, Faculty, University of Nevada



Career Outcomes



SATISFIED
WITH POST-
GRAD
POSITION



JOB
SEEKERS
FOUND
FULL-TIME
JOBS



FOUND
POSITION
WITHIN 6
MONTHS

UM & SEAS Supportive Community

Largest living alumni body of any university



13,800+

TOTAL SEAS ALUMNI, THE LARGEST GRADUATE POPULATION OF ANY ENVIRONMENTAL DEGREE PROGRAM



33%

OF SEAS ALUMNI HAVE RECEIVED A DUAL DEGREE FROM ANOTHER ONE OF U-M'S NATIONALLY RANKED TOP 10 PROGRAMS



Alumni

ARE REPRESENTED IN ALL 50 STATES AND 80+ COUNTRIES



University of Michigan

- 51,000 students (19,000 grad/prof students)
- 3,100 tenure-track faculty; 6200 total faculty
- 260 degree programs
- 101 Top Ten graduate programs
- 17 professional schools

Ann Arbor





**ENROLLMENT
DEADLINE
APRIL 15**

M | SEAS SCHOOL FOR ENVIRONMENT
AND SUSTAINABILITY
UNIVERSITY OF MICHIGAN



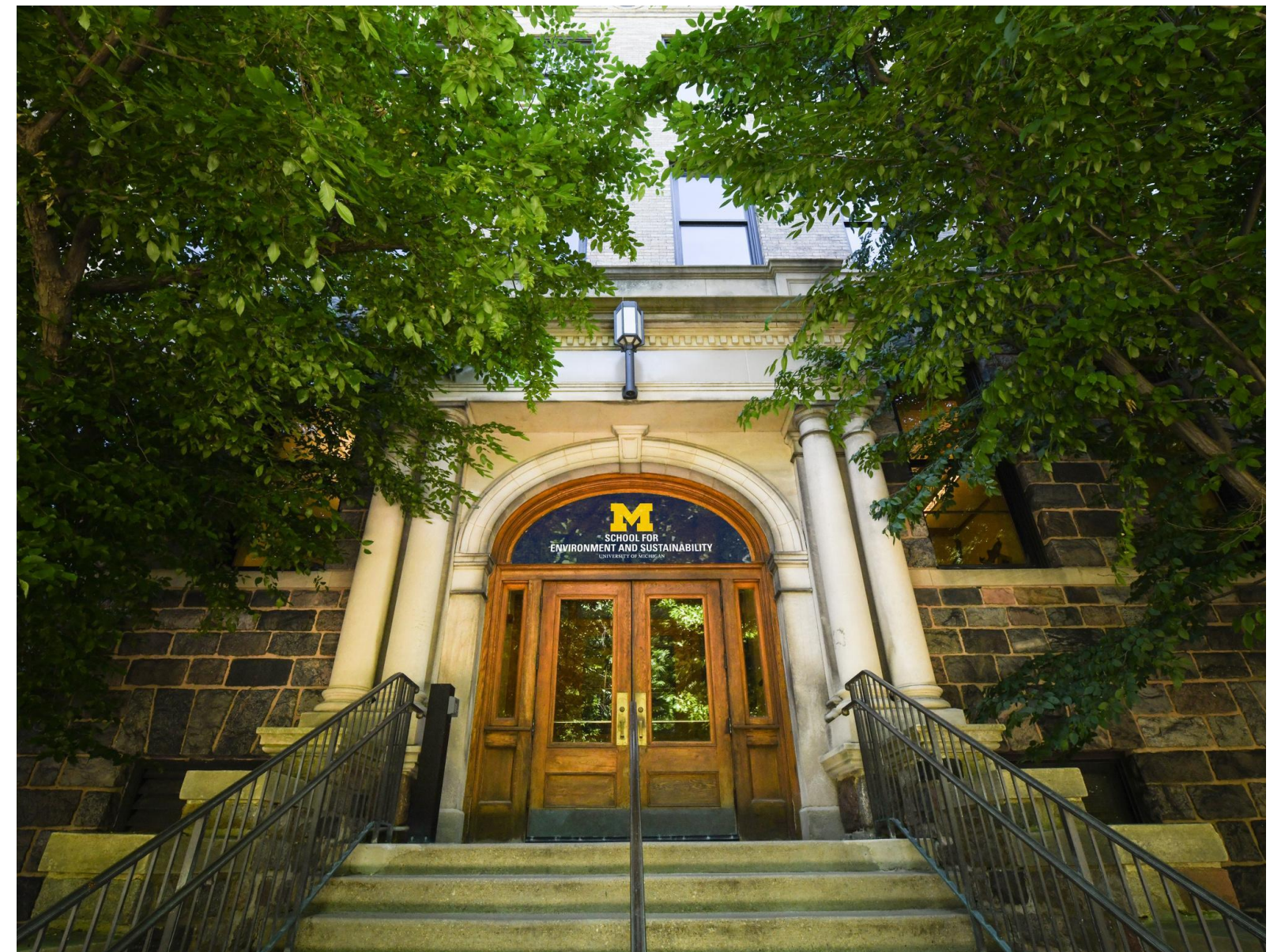
Come join us!

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Questions?

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