CURRENT ESPP ENROLLMENT BY COLLEGE

2018

- EGR
- CANR
- CAL
- CSS
- CNS
- CAS

2018
ESPP GRADUATES BY COLLEGE AND YEAR
GRADUATE CERTIFICATE IN ENVIRONMENTAL AND SOCIAL SYSTEMS MODELING STUDENTS

Completed and Current Certificate Students by College

Completed | Current
---|---
EGR | CANR | CNS | CSS
ESPP AND MSU AGBIO RESEARCH’S INTERDISCIPLINARY TEAM BUILDING INITIATIVE

ITBI grant disbursement (by college)

- CANR
- CSS
- CAL
- EGR

2014, 2015, 2016, 2017
WATER SCIENCE NETWORK
UPDATE
WATER SCIENCE NETWORK COMMITTEE ACTIVITIES

• Developing graduate water curriculum
• Evaluating WaterCube program
• Updating water.msu.edu
• Developing proposal for future water organization and activities
GRADUATE WATER CURRICULUM

• Goal: create a dual major program in water at MSU
  • Models: EEBB, ESPP

• Committee working with Drs. Kelly Millenbah (CANR Associate Dean and Director for Academic and Student Affairs) and James Lucas (Assistant Dean of Global Education and Curriculum)
DRAFT LEARNING OUTCOMES

• Integrate concepts from multiple disciplines to address water-related issues and ideas
• Create appropriate inquiry protocols to investigate water-related issues and ideas
• Employ a systems perspective to understand the scale & scope of water-related issues and ideas
• Generate new insights & recommendations related to water issues and ideas
• Evaluate the disciplinary, cultural, and contextual uses and bias of data, methods, and solutions
• Analyze the purpose, role, & influence across a range of water-related organizations (e.g., governmental, non-profit, profit)
• Approach water-related issues, ideas and decision-making, including trade-offs, with an eye for power and equity
• Model conflict management and dialogue skills as means of engaging with diverse people & perspectives
• Design communications appropriate for academic, professional, lay, and student audiences & contexts
• Interpret common data related to water-related issues and ideas
POTENTIAL CROSS- AND SUB-THEMES

Water Security
Water Science
Water Technology
Water Diplomacy

Water Use – Climate Change – Resource Management
DRAFT STRUCTURE

- Pro-Seminar (3 cr.)
- Middle 6 cr. + 6 cr.
- Capstone Course (3 cr.)
- Comp. Exam
- Defense
- Dissertation
TIMELINE

- **Spring-Summer 2018**
  - Develop curriculum
  - Engage faculty for feedback

- **Fall 2018**
  - Start approval process

- **Fall 2019**
  - First cohort starts
WATERCUBE OVERVIEW

- 13 WaterCube teams funded in May 2015
- All teams are multidisciplinary & include members from multiple colleges
WATERCUBE HIGHLIGHTS

• Over $6.6 million in external funding

• 38 peer-reviewed publications

• 33 students and post-docs supported

• New advancements in water science
VALUE OF THE PROGRAM

“The WaterCube program clearly afforded an opportunity for the three PI’s to collaborate that would not likely have happened otherwise.”

“The WaterCube funding has been instrumental in the fruition of this exploratory research. It is likely that [our] research would have never happened without it.”

“The WaterCube funding provided a valuable resource for our team in that it served to create an environment where geomicrobiologists, public health microbiologists, hydrogeologists, and bioinformaticists could bring to bear their unique expertise on a focused research problem.”

“We feel that the WaterCube made it possible to obtain data for successful proposals that our team members have received, and will continue to help with future funding and successful research programs of the project participants. In addition, the WaterCube helped join 5 PIs that had not worked together as a group before - a group spanning terrestrial and aquatic science across scales.”
SLIDES AFTER THIS ONE ARE FROM LAST YEAR, BUT STILL MAY BE HELPFUL
FOSTERING COLLABORATIONS

Global Water Initiative hires Garnache, Lupi, Herriges, Stevenson.

WaterCube 8

WaterCube 1

Basso, Hyndman

USDA Grant:
Linking agricultural nutrient pollution to the value of freshwater ecosystem services, $499,875
FOSTERING COLLABORATIONS

NSF INFEWS
Moran, Urquhart, Pokhrel, Mueller, Moore, Lopez, Lu, and Hyndman
Rethinking Dams: Innovative hydropower solutions to achieve sustainable food and energy production, and sustainable communities
$2,618,490
ENABLING INNOVATION

• WaterCube 10: Pollutant-degrading Multifunctional Soft Microbots
  • Junghoon Yeom, Mechanical Engineering
  • Wei Zhang in Plant, Soil, Microbial Sciences
  • Hui Li in Plant, Soil, Microbial Sciences
FATE OF THE EARTH SYMPOSIUM

- The 2018 Fate of the Earth Symposium changed format to become more accessible to the general public. The all-day Saturday program featured a performance by folk duo Magpie and plenary talks by Dr. William Lynn and Christy George. Interspersed with the plenary talks were workshops focusing on immediate environmental issues relevant to mid-Michigan. Also, there was well-received art show featuring artists ranging from elementary school to MSU faculty and a student research poster exhibition.

257 registered to attend
122 from MSU
61 students

Other affiliations include:
Michigan Department of Environmental Quality, The Nature Conservancy, Flint Center for Health Equity Solutions, University of Michigan, The Moyer Group, Red Cedar Fly Fishers, and a wide range of private citizens and MSU alumni.
The 2017 ESPP Research Symposium focused on the Urban Environment, bringing in 121 students (undergraduate and graduate), faculty and researchers. Nine doctoral students presented their research orally while another group of graduate and undergraduate students from multiple universities presented research posters.
ESPP RESEARCH COLLOQUIA SERIES

• ESPP hosts a Research Colloquia Series that includes student and expert panel discussions, faculty roundtables, guest lectures and debates. The 2017-2018 Colloquia series include presentations on:
  • Urbanization and Sustainability
  • The Battle for Michigan’s Fish: Using a Novel Interview Technique to Quantify Risk Perception and Inform Outreach
  • Social Inequality and Environmental Justice
  • Sustainable Food Systems in Developing Countries
  • Perceptions of Emerging Biotechnologies
  • Freshwater Security in the Great Lakes Region
  • Local and Global Interfaces-Why the Environment Matters
ESPP is pleased to offer multiple doctoral recruiting fellowships each year. Our most recent 2017 fellows include 10 students from around the world and across disciplines. The current breakdown of ESPP fellows is:

- CANR: 20
- EGR: 15
- CSS: 10
- CNS: 5
- CAS: 3
- CAL: 2

**Current Doctoral Recruitment Fellows**
ESPP is currently funding 12 students who are undertaking summer research in the areas of the Climate-Food-Energy-Water Nexus.
ESPP STUDENT TRAVEL GRANTS

ESPP is pleased to provide grants for doctoral students to present their environmental research at interdisciplinary conferences throughout the world.

Travel grants awarded (by college)