



Announcements

Problem Solving & Leadership in STEM

College of Science (COS) 400/600 is a 3-credit course that enables students to solve complex scientific problems and learn the effective research techniques required in the 21st century STEM workforce. The course will be offered in the Spring Semester, Thursdays, 4:30pm-7:10pm

Please contact [Dr. Padhu Seshaiyer](#)

SPRING 2020



**An exciting class
for all disciplines**

COS 400/600:

Problem Solving and Leadership in STEAM

Solve complex scientific problems and learn the effective research techniques required in the 21st century STEM workforce. A 3-credit course.

- ➔ Address global challenges
- ➔ Use problem-solving frameworks
- ➔ Understand processes of entrepreneurship and enterprise management.

SPRING SEMESTER

Thursdays, 4:30 p.m. to 7:10 p.m.
Planetary Hall 126

**Optional Study Abroad
Experience**



**SURINAME
SOUTH AMERICA**

Spring Break, March 7-14, 2020

Apply by **NOVEMBER 2019**
studyabroad.gmu.edu

COS 400/600 is a core course for the COS minor,
Scientific Leadership and Practice: cos.gmu.edu/scileadership

Questions? Contact Padhu Seshaiyer, PhD: pseshaiy@gmu.edu



College of Science

Upcoming Mason Events

America in 2020: Mobilizing for a Decade of Sustainable Development

During this two-day event, we will hear from SDSN USA co-chairs Jeffrey Sachs, Dan Esty, and Gordon McCord; dive deep into SDSN USA projects and activities; brainstorm on future projects; learn about SDG-related resources, research, and action from institutions across the US; and, most importantly, meet each other face-to-face!

The meeting will be co-hosted by SDSN USA and the Institute for a Sustainable Earth at George Mason University.

- Date: January 23-24, 2020
- Location: Van Metre Hall, George Mason University, Arlington Campus
- [Registration](#)



Congratulations!



Modeling Strategies for Reflecting Demand Response to Tolled and Priced Lanes Framing Paper

Primary Investigator (PI): Shanjiang Zhu, Volgenau School of Engineering

Funding source: ICF Incorporated, LLC & Federal Highway Administration, \$110,119

Multi-scale Multi-temporal approaches for advancements in the Real-Time Total Water Flood Forecasting

PI: Celso Ferreira, Volgenau School of Engineering

Funding source: Virginia Institute of Marine Science & National Oceanic & Atmospheric Administration (NOAA), \$39,938

Funding Opportunities

PhD Fellowship Opportunity: Food Technologies and Food Security

The Environmental Studies Program (in collaboration with the Sustainability Innovation Lab at Colorado (SILC) and the Global Sustainability Scholars Program at the University of Colorado Boulder has three positions available for new graduate student Fellows, beginning August 2020.

The Food System Technology Fellowships will support three students while pursuing their Ph.D. conducting research to understand the social and economic dimensions of whether and how new food system technologies – such as those involved in cellular agriculture ('clean' meat), precision agriculture, and indoor agriculture – can contribute to food security in the US.

- Funding source: University of Colorado Boulder
- Deadline: December 1, 2019
- Contact: Peter Newton

Long-Term Ecological Research

The Long-Term Ecological Research Program has long recognized the importance of humans in ecological systems and is especially interested in how human activities in urban settings interact with natural processes to determine ecological outcomes. Factors that control urban ecosystems are not only environmental, but also social and economic. These factors and their interactions need to be considered to understand urban ecosystems over long time frames and broad spatial scales.

- Funding source: National Science Foundation
- Amount: \$7,126,200
- Deadline: December 4, 2019
- Submission: grants.gov
- Contact: [Douglas J. Levey](#)

Solid Waste Management Grant Program

The U.S. Department of Agriculture (USDA) established the program to assist communities through free technical assistance and/or training provided by the grant recipients. Qualified organizations will receive SWM grant funds to reduce or eliminate pollution of water resources in rural areas, and improve planning and management of solid waste sites in rural areas.

- Funding source: U.S. Department of Agriculture
- Amount: \$1,000,000
- Deadline: December 31, 2019
- Submission: grants.gov
- Contact: Penny Douglas, 202-253-0504

Smithsonian Institution Fellowship Program

The James Smithsonian Fellowship Program was created to offer early career opportunities for post-doctoral researchers interested in gaining a better understanding about the interplay between scholarship and public policy through a Smithsonian lens.

The fellowship provides an immersion experience working with Smithsonian researchers and relevant collections, while also affording fellows a hands-on opportunity to explore relationships between research and public policy through direct interaction with Smithsonian leaders, and with policy leaders throughout the Washington, DC network.

- Deadline: January 15, 2020
- [Submission](#)
- [Contact](#): 202-633-7070

Marine Debris Prevention Program

The National Oceanic & Atmospheric Administration (NOAA) Marine Debris Program (MDP) leads national efforts to address marine debris. The mission of the NOAA MDP is to investigate and prevent the adverse impacts of marine debris. This mission is achieved

through research, prevention, and reduction activities that aim to conserve and protect our nation's marine environment, and coastal economy, as well as ensure navigation safety.

- Funding source: NOAA/Department of Commerce
- Amount: \$150,000
- Deadline: February 7, 2020
- Submission: [grants.gov](https://www.grants.gov)
- Contact: [Tom Barry](#)

Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET)

The (ECO-CBET) solicitation will support activities that confront vexing environmental engineering and sustainability problems by uncovering and incorporating fundamental knowledge to design new processes, materials, and devices from a systems-level perspective. Projects should be compelling and reflect sustained, coordinated efforts from interdisciplinary research teams.

A key objective of the solicitation is to encourage conversations and robust collaborations amongst the chemical process, transport phenomena, bioengineering, and environmental and sustainability research communities such that unanticipated solutions may arise.

- Funding source: National Science Foundation
- Amount: \$8,500,000
- Deadline: February 12, 2020
- Submission: [grants.gov](https://www.grants.gov)
- Contact: [Christina Payne](#)

FY 2020 Solicitation for the Office of Science Financial Assistance Program

The Office of Science of the US Department of Energy is providing funding for research in the following program areas: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics.

- Funding source: Office of Science, Department of Energy
- Amount: Up to \$5,000,000
- Deadline: September 30, 2020
- Submission: [grants.gov](https://www.grants.gov)
- Contact: Kimberlie Laing, 301-903-3026

Environmental Biology

The Division of Environmental Biology (DEB) Core Track supports research and training on evolutionary and ecological processes acting at the level of populations, species, communities, and ecosystems.

Proposals should be submitted to the core clusters (Ecosystem Sciences, Evolutionary Processes, Population and Community Ecology, and Systematics and Biodiversity Sciences). DEB also encourages interdisciplinary proposals that cross conceptual boundaries and integrate over levels of biological organization or across multiple spatial and temporal scales.

- Funding source: National Science Foundation
- Awards: 120 awards each year
- Funding amount: \$100,000,000 for new awards each year pending availability of funds
- Deadline: Proposals accepted anytime
- Submission: grants.gov
- Contact: [Division of Environmental Biology](#)

Environmental Engineering Program

[The Environmental Engineering Program](#) supports potentially transformative fundamental research that applies scientific and engineering principles.

Integral to achieving these goals is a fundamental understanding of the transport and biogeochemical reactivity of pollutants in the environment. Research on environmental micro/biology, environmental chemistry, and environmental geophysics may be relevant providing the research has a clear objective of protecting human and ecological health.

- Funding source: National Science Foundation
- Amount: \$10,000,000
- Deadline: Applications accepted at anytime
- Submission: grants.gov
- Contact: [Karl Rockne](#)

Other Upcoming Events



Global Symposium on Soil Biodiversity

[The Global Symposium on Soil Biodiversity](#) is being organized by the United Nations Food and Agriculture Organization (FAO) at its Headquarters in Rome, Italy on March 10-12 2020.

The main objective of the Symposium is to address critical knowledge gaps and promote discussion among policy makers, food producers, scientists, practitioners and other stakeholders on solutions to protect soil biodiversity and increase its sustainable use and management by addressing the underlying causes of soil biodiversity loss and enhancing implementation of sustainable practices.

- Date: March 10-12 2020.
- Location: Rome, Italy
- Contact: [Global Soil Biodiversity Initiative](#)

6th International Symposium on Knowledge and Capacity for the Water Sector

[The African Development Bank](#), the IHE Delft Institute for Water Education, the Asian Development Bank, UN Habitat and other development partners are preparing the 6th International Symposium on Knowledge and Capacity for the Water Sector, themed: From Capacity Development to Implementation Science.

The Symposium will convene key stakeholders to explore the skills, knowledge and attitudes needed by water professionals and institutions. The meeting will also study how new developments in implementation science can strengthen institutional capacity to enhance water security.

- Date: May 27-29, 2020
- Location: Delft, Netherlands
- Deadline for fill papers: February, 29 2020



The Institute for a Sustainable Earth (ISE) aims to connect members of the Mason community with others across the Mason community—and with other communities, policy-makers, businesses and organizations—so that, together, we can more effectively address the world's pressing sustainability and resilience challenges.

The ISE Newsletter provides up-to-date information on conferences, funding opportunities, and research pertaining to environmental science and sustainability. The biweekly newsletter aims to facilitate information sharing among researchers, practitioners, and relevant local, national, and international organization.

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