



# SUSTAINABLE SYSTEMS (SUSSYS) MASTER OF SCIENCE

**BECAUSE SYSTEMS THINKING, ECOLOGICAL PRINCIPLES, AND TECHNOLOGICAL CAPABILITIES CAN DRIVE A SUSTAINABLE FUTURE**

Depletion of fossil fuels. Global warming. Water scarcity. Loss of biodiversity. Modern environmental challenges like these impact both developed and developing nations, and they are compounded by increasing consumption pressures and a growing global population. The world needs innovative leaders who can help solve these complex problems and address basic human needs such as mobility, shelter, water, food, and communication, in a more sustainable manner.

## WHY SUSSYS?

- Gain expertise in systems-analysis techniques with a wide range of applications, including renewable energy, water infrastructure, green construction, sustainable mobility, and food systems.
- Develop the critical skills of systems thinking and systems-dynamics modeling and apply them to the challenges of global environmental and social change.
- Deepen your understanding of institutions that govern energy use and explore ways in which government and industry policy have succeeded — or failed — in order to transform energy systems and influence consumer choices, and ultimately to reduce carbon emissions.

## FACULTY

- Jose Alfaro
- Rosina Bierbaum
- Ivan Eastin
- Andy Hoffman
- Greg Keoleian
- Thomas Lyon
- Shelie Miller
- Michael Moore
- Joshua Newell
- Tony Reames
- Ming Xu

## GAME CHANGERS

**DEREK MARTIN '17**  
**SUSTAINABILITY COORDINATOR,**  
**SUSQUEHANNA UNIVERSITY**

“As the sustainability coordinator for a small liberal arts college in Pennsylvania, I can say that my time at SEAS perfectly prepared me for this role. I left SEAS with a broad range of knowledge about energy, food, the built environment, social issues, and natural resources that has translated well into my current role.”



**MARYAM ARBABZADEH '17**  
**POSTDOCTORAL ASSOCIATE,**  
**MIT ENERGY INITIATIVE**

“To be good at sustainability, you need to be interdisciplinary. SEAS offers that.”



**MARWAN CHARARA '18**  
**GLOBAL ENERGY AND UTILITIES**  
**ANALYST, PA CONSULTING GROUP**

“I’ve wanted to work in this field because it gives you a purpose. You know that you’re part of something bigger than you.”



# MASTER'S PROJECTS

Part of the culminating experience of your program is a master's project or master's thesis, where you will work with an external client to solve real-world problems. Recent projects include:

***Towards a Global Plastics Protocol: Policy Solutions for Closing the Loop on Plastics***

(Ann Arbor, MI, USA)

**Client:** City of Ann Arbor

**Advisor:** Dr. Shelie Miller



***Meijer Renewable Energy Strategy***

(Grand Rapids, MI, USA)

**Client:** Meijer Inc.

**Advisor:** Dr. Greg Keoleian

***Biomass Residue-Fueled Micro-Grid for a Rural Community in Puerto Rico*** (Adjuntas, Puerto Rico)

**Client:** Sustainability Without Borders

**Advisor:** Dr. Jose Alfaro, Dr. Ivette Perfecto

## COURSE SAMPLING

- Systems Thinking
- Environmental Systems Analysis
- Industrial Ecology
- Urban Sustainability

**APPLY NOW!**  
**SEAS.UMICH.EDU/APPLY**

## CONTACT

**SEAS ADMISSIONS COACHES:**

seas-admissions@umich.edu

(734) 764-6453

**Learn more: [seas.umich.edu](http://seas.umich.edu)**

# CAREERS

In-house career coaches will provide personal guidance while you are a student and continued support after you graduate.



**DTE Energy**



## SEAS SUSTAINABILITY THEMES

Students specializing in Sustainable Systems have the option to focus their studies and deepen their knowledge in one or more sustainability theme.



**CITIES+MOBILITY  
+BUILT ENVIRONMENT**



**CLIMATE  
+ ENERGY**



**CONSERVATION  
+ RESTORATION**



**FOOD  
SYSTEMS**



**WATER**



**CROSS-CUTTING  
EXPERTISE**

