

# Sustainable Food Systems at the University of Michigan

PROGRESS REPORT  
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# TABLE OF CONTENTS



**01**  
Research and Teaching (Sustainable Food Systems Initiative)

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p. 3-14

**02**  
Student Leadership (UM Sustainable Food Program)

---

p. 15-23

**03**  
UM Campus Farm

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p. 21-24

**04**  
Dining and Operations

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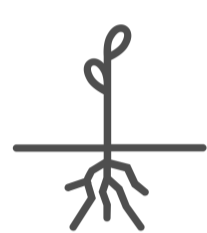
p. 25-27



# Why Food?

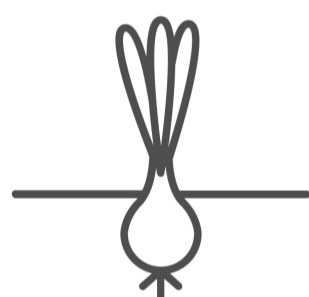
Sustainability in food systems sits at the nexus of some of the most pressing issues of our time. The way the world produces, distributes and consumes food poses some of the most complex challenges and opportunities for sustainability, as food systems have large-scale impacts on climate change, environmental quality, biodiversity, economies, human health, and social equity.

The University of Michigan is in a unique position as a non-land-grant, tier-1 research institution with a strong and growing foundation in transdisciplinary sustainable food systems work. This report highlights the impacts from the collaboration of several different campus partners:



## SUSTAINABLE FOOD SYSTEMS INITIATIVE (SFSI)

is a group of over 50 affiliated faculty and staff who research and teach courses related to Sustainable Food Systems. This interdisciplinary group represents over 24 units across campus, and was catalyzed by a cluster hire of five interdisciplinary junior faculty specializing in sustainable food systems.



## UNIVERSITY OF MICHIGAN SUSTAINABLE FOOD PROGRAM (UMSFP)

is a student-led umbrella group for over ten different student organizations on campus that focus on developing innovative solutions to food system problems and hands-on opportunities for students across campus. Member groups include: Food Recovery Network, UM Bees, Maize and Blue Cupboard food pantry, Food Industry Student Association, and more. The UMSFP leverages its impact through internal collaborations with groups such as SFSI, MDining, the Office of Campus Sustainability, and the Graham Sustainability Institute.



## CAMPUS FARM

is a multi-stakeholder living learning laboratory located at Matthaei Botanical Gardens. The farm engages faculty, researchers, and student leaders in sustainable agriculture while producing food year-round for MDining and creating opportunities for the scholarship and practice of sustainability across campus.

Together, these efforts are making the University of Michigan a world-class hub for cutting edge scholarly research and teaching on sustainable food systems and are generating knowledge and future leaders who will transform our food system. Curricular efforts are strengthened by highly motivated student groups, which are further buoyed by meaningful efforts on behalf of Dining and Operations to make sustainable food a campus-wide priority.



# 01. Sustainable Food Systems Initiative (SFSI)

The University of Michigan Sustainable Food Systems Initiative engages an interdisciplinary mix of students, faculty, and communities at local and global levels to learn from and build food systems that are health-promoting, economically viable, equitable, and ecologically sound.



**60 Affiliates**  
**24 interdisciplinary units**

SFSI is a group of fifty faculty from nine schools and colleges, as well as a number of staff members at the University of Michigan. As the demand for interdisciplinary food systems research and pedagogy grows, SFSI is making the University of Michigan a destination for faculty, students, and visiting scholars to analyze and transform the food system.



**Research**

SFSI conducts research, teaches, and bridges academia and the community in analyzing the global food system. The initiative became formalized in 2012, when a core group of faculty was successful in receiving support for a cluster hire for five new faculty on the topic of sustainable food systems. The fifth junior faculty member joined UM during the Fall of 2016, completing all hires in the cluster.



**61+ food systems courses**

SFSI faculty affiliates have launched an academic minor, a graduate certificate in Sustainable Food Systems, developed and taught innovative new courses, applied for and received grants from federal agencies and private foundations, sponsored outreach events, increased connections with community partners, and attracted strong undergraduate and graduate students.



## 3rd annual Fast Food for Thought

In October of 2016, SFSI presented the 3rd annual "Fast Food for Thought." Each year, this high-energy speaker series brings together 10 interdisciplinary faculty members from across campus to give a series of fast-paced talks (5 minutes each) related to food and/or agriculture. Sharing snapshots of their perspective of the food system, faculty spoke about their research including topics of eating and self-regulation for children, using satellite imagery to measure sustainable agriculture, and the viability of farming as a career.

Left: Lesli Hoey (Taubman) presented community-based research strategies at the Michigan Good Food Summit in East Lansing in October 2016.  
Center: Meha Jain (SEAS) shared her research methods at the 2016 Fast Food for Thought.  
Right: Tim Crews, Research Director and Lead Scientist for The Land Institute, discussed perennial grain production in Food Literacy for All session.  
Bottom: Julia Wolfson (SPH) presented at Fast Food for Thought 2016.



# Updates from the Food Systems Cluster Hire

## Jennifer Blesh, PhD School for Environment and Sustainability

Blesh's study investigated the potential for cover crops (non-harvested crops) to provide ecosystem functions on 8 farms in southeastern Michigan, in order to support farmers' interest to reduce use of external inputs and associated environmental costs. In particular, Blesh investigated the relationship between the functional trait diversity of cover crop mixtures and the enhancement of multiple ecosystem functions at once (i.e., "multifunctionality") across farms. Results from this research inform ecological understanding of biological nitrogen fixation and the development of more sustainable soil fertility management practices using legume nitrogen sources.



Blesh, J. In Press. Functional traits in cover crop mixtures: biological N fixation and multifunctionality. *Journal of Applied Ecology*.

## Regina Baucom, PhD College of Literature Science and Arts, Department of Ecology and Evolutionary Biology

Baucom studies the long-term evolutionary consequences of herbicide on agricultural weeds. In this study, she and her colleagues found that the mating system of *Ipomoea purpurea* (an agricultural weed) co-evolves with resistance. Specifically, populations of this species that are highly resistant tend to self-fertilize more often than susceptible populations. The lab's findings highlight human impact on natural populations of agricultural weed, and may likewise apply to other scenarios of strong selection such as climate change or populations that are mate limited.



Kuester, A., Fall, E., Chang, S.-M. and Baucom, R. S. 2017. Shifts in outcrossing rates and changes to floral traits are associated with the evolution of herbicide resistance in the common morning glory. *Ecology Letters*.

## Lesi Hoey, PhD Urban and Regional Planning

Hoey and colleagues examine six case studies of educational programs across North and Latin America to better understand the diverse origins of and approaches to teaching about food sovereignty. The authors highlight the financial and political constraints to starting and maintaining these educational programs, the common pedagogies they each employ, and how each responds to local food systems, concluding that the spread of food sovereignty education reflects a growing movement to raise more critical consciousness about the global food system.

Meek, D., Bradley, K., Ferguson, B., Hoey, L., Morales, H., Rosset, P., & Tarlau, R. (March 2017). Food sovereignty education across the Americas: multiple origins, converging movements. *Agriculture and Human Values*

## Andrew Jones, PhD School of Public Health

Jones' study utilized longitudinal methods to investigate the association between the diversity of crops grown by smallholder farmers and the quality and diversity of household diets. His findings indicate on-farm crop species richness in Malawi is positively associated with enhanced diet quality and diversity. Growing a greater variety of crops may allow farming households to diversify their diets both by consuming a greater diversity of own-produced foods, but also by facilitating new market opportunities through the sale of diverse crops which may allow families to purchase more diverse foods.



Jones, Andrew D. 2017. On-farm crop species richness is associated with household diet diversity and quality in subsistence- and market-oriented farming households in Malawi. *The Journal of Nutrition* 147.1: 86-96.

## Meha Jain, PhD School for Environment and Sustainability

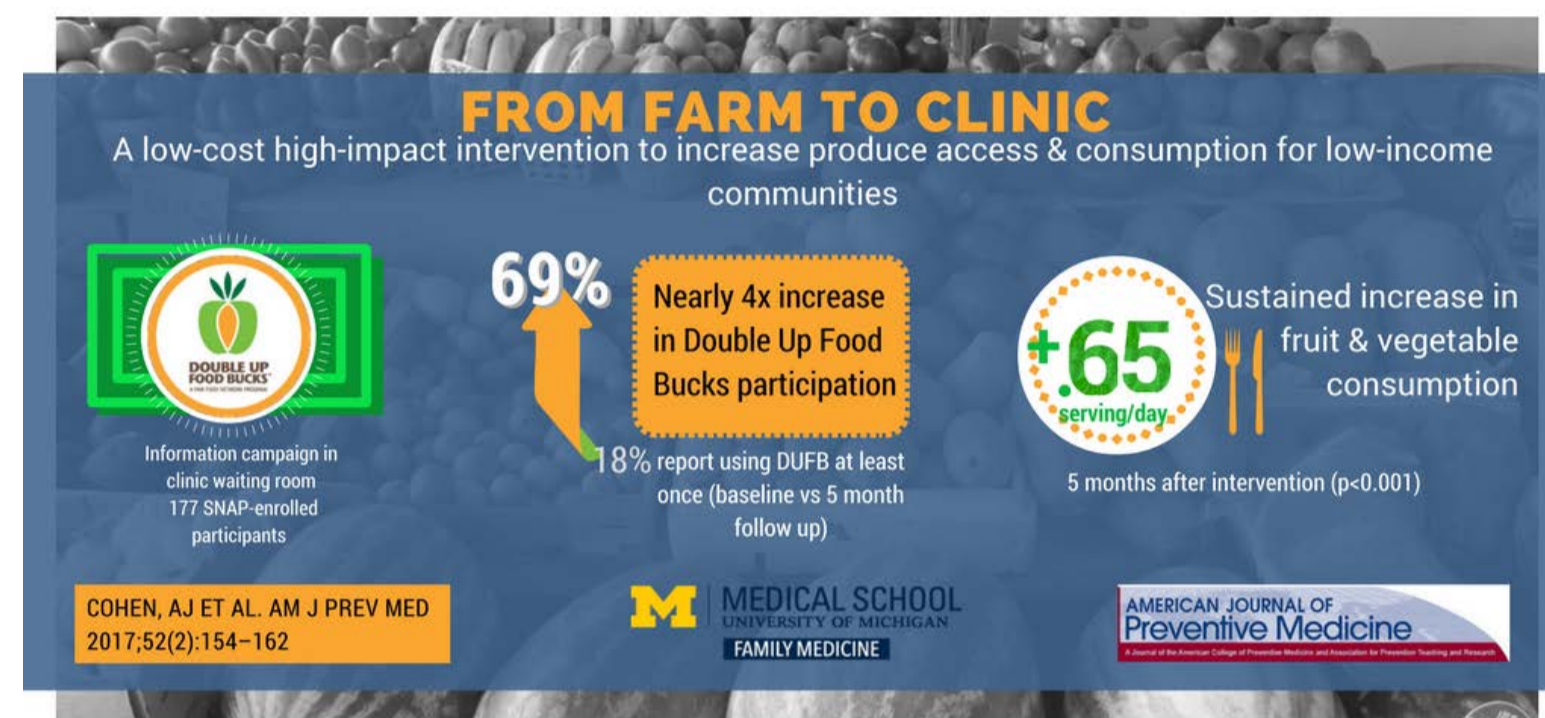
Jain and colleagues are developing new algorithms to map smallholder farm characteristics, like cropped area, yield, and irrigation use, from space using satellite data. These methods are automated and require no on-the-ground calibration data, which is important since these data rarely exist in smallholder systems. Jain and her lab are using these datasets to understand the factors that are limiting production across India and to identify sustainable ways to enhance production and food security.

Jain, M., P. Mondal, G.L. Galford, G. Fiske, R.S. DeFries (2017). An Automated Approach to Mapping Cropped Area of Smallholder Farms Across Large Scales. *Remote Sensing*. 9:566



**Alicia Cohen, M.D., MSc**  
 Department of Family Medicine  
 Institute for Healthcare Policy and Innovation

Cohen and colleagues found that a five minute chat in the waiting room of health clinics may catalyze low-income populations to eat more fruits and vegetables. Families learned that SNAP dollars spent at farmers markets can be doubled on fruit and vegetable purchases through the Michigan-based Double Up Food Bucks program, which led to both a fourfold increase in program participation and sustained increase in fruit and vegetable consumption.



Cohen AJ, Richardson CR, Heisler M, Sen A, Murphy EC, Hesterman OB, Davis MM, Zick SM. Increasing Use of a Healthy Food Incentive: A Waiting Room Intervention Among Low-Income Patients. *American Journal of Preventive Medicine*. 2017 Feb 1;52(2):154-62.



**Alicia Alvarez, J.D.**  
 Law School

**In what ways does your work relate to sustainable food systems?**

We work with organizations involved in the sustainable food movement. My clients have brought sustainable food systems work to me, and I have discovered the field through their eyes.

We work with an urban farm. We have worked with a farmer's market and a group that represents restaurant workers. Having diverse clients helps us consider: What does justice mean at all levels of the food system? Some of the issues we've worked on include access to land, protecting names, and risk management. We worked with the Detroit People's Food Cooperative in creating their entity. They are also exploring a physically owned grocery store in Detroit.

**John Vandermeer, PhD and Ivette Perfecto, PhD**  
 Ecology and Evolutionary Biology  
 School for Environment and Sustainability

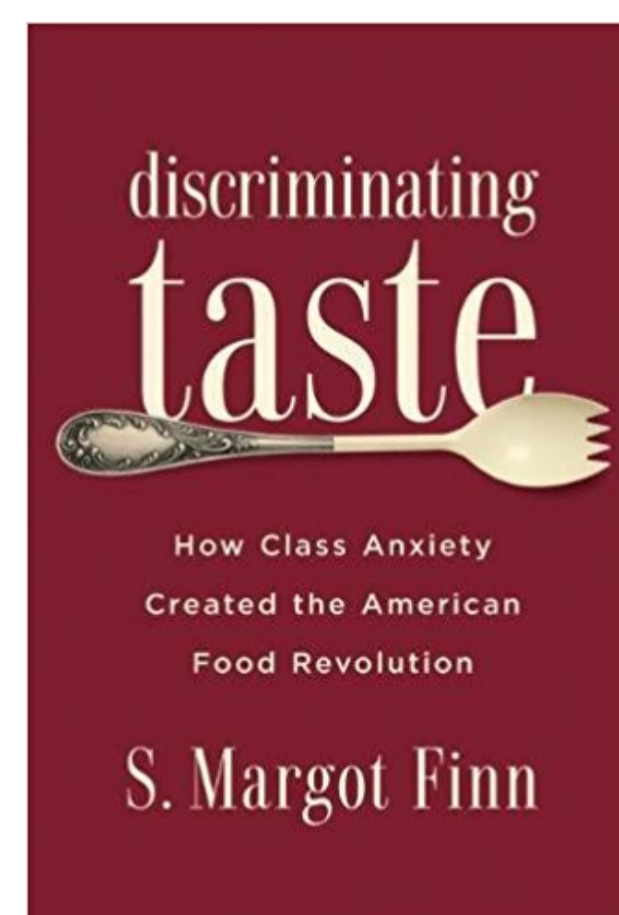


SFSI affiliates Vandermeer and Perfecto collaborated with colleagues in Mexico to develop a chess-like board game to help small-scale Mexican coffee farmers better understand the complex interactions between the insects and fungi that live on their plants—and how some of those creatures can help provide agroecological pest control.

García-Barrios, L., J. Cruz-Morales, J. Vandermeer, and I. Perfecto. 2017. The Azteca Chess experience: learning how to share concepts of ecological complexity with small coffee farmers. *Ecology and Society* 22(2):37.

**Margot Finn, PhD**  
 College of Literature, Science, and the Arts

In her 2017 book, Finn argues that 'good food' has become conflated with high status. She presents the historical contexts of food fads such as gourmet, ethnic, diet, and organic foods, and examines "taste hierarchies" within the broader context of class, culture, and the economy.



Finn, S. M. (2017). *Discriminating Taste: How Class Anxiety Created the American Food Revolution*. New Brunswick: Rutgers University Press.

**Julia Wolfson, PhD**  
 Department of Health Management and Policy, School of Public Health

In this study, Wolfson and colleagues used surveys and focus groups to examine how perceptions of cooking relate to confidence, attitudes and behaviors towards cooking. The perception of cooking was identified by use of scratch ingredients, convenience foods, and not using heat. Results show that while Cooking frequency is similar among US adults regardless of how they perceive cooking, cooking confidence and enjoyment are lowest among Americans who perceive cooking as including the use of convenience foods. The study has implications about how healthier cooking is portrayed in public health messages.

Wolfson, J., Smith, K., Frattaroli, S., & Bleich, S. (2016). Public perceptions of cooking and the implications for cooking behaviour in the USA. *Public Health Nutrition*, 19(9), 1606-1615. doi:10.1017/S1368980015003778



# Food Systems Research

From food policy to agroecosystems to obesity prevention

Research



**Meha Jain, PhD**  
School for  
Environment and  
Sustainability

My work broadly tries to understand the impacts of environmental change and natural resource degradation on agricultural production and how farmers are responding and adapting to these changes. My goal is to figure out ways to more efficiently use limited natural resources, to increase equity, and to sustain current levels of production.

**How has being a part of the sustainable food systems cluster hire impacted your first year on campus?**

Both personally and research-wise, it has been great to join an existing community of people who are interested in the same sorts of issues and questions.

Jain, Meha, et al. "Using satellite data to identify the causes of and potential solutions for yield gaps in India's Wheat Belt." *Environmental Research Letters* (2017).

**Monica Dus, PhD**  
Molecular, Cellular and  
Developmental Biology

Dr. Monica Dus was awarded the NIH New Innovator Award, a \$2 million, five-year grant to further her research on how nutrients affect the brain and regulate eating behaviors. Her lab examines excess sugar in fruit flies and its effect on the brain.



Park, Jin-Yong, et al. "Drosophila SLC5A11 mediates hunger by regulating K<sup>+</sup> channel activity." *Current Biology* 26.15 (2016): 1965-1974.

**Ashley Gearhardt, PhD**  
Department of Psychology  
Food and Addiction Science and Treatment Lab (FAST)



Burrows, T., Skinner, J., Joyner, M.A., Palmieri, J., Vaughan, K., & Gearhardt, A.N.\*\* (2017). Food addiction in children: Associations with obesity, parental food addiction and feeding practices. *Eating Behaviors*. 26, 114-120.

What factors are associated with addictive-like eating in children? Gearhardt et al. examined links between addictive eating in young children and obesity, parental food addiction patterns and feeding practices of the child. Findings indicate the need for future research on how these links develop through adolescence and adulthood.

**Don Scavia, PhD**  
School for Environment and Sustainability,  
College of Engineering

Scavia examined policy related questions to address hypoxic zones in the Northern Gulf of Mexico. His findings provide policymakers with options to address agriculturally-derived nutrient load and corresponding adaptive management processes. Scavia found that "... a 59% reduction in Mississippi River nitrogen load is required to reduce hypoxic area to 5,000 km." He put this work, and that of other agriculturally-dominated watersheds of Chesapeake Bay and Lake Erie, in the context of US agricultural policy in his most recent blog.



Scavia, Donald, et al. 2017. Ensemble modeling informs hypoxia management in the northern Gulf of Mexico." *Proceedings of the National Academy of Sciences*.

**Aniket Aga, PhD**  
School for Environment and Sustainability



Following the development of genetically modified mustard seed in India, Aga analyzes the government's involvement which limited public access to the agronomic and biosafety assessments. Aga argues that the government has the right to commercialise the new seed but 'this cannot come at the cost of transparency and fidelity to the law.'

Aga, A. (2016, September 29). Seeds of discontent? Retrieved from <http://www.thehindu.com/opinion/columns/Seeds-of-discontent/article15005864.ece>



# Select publications from SFSI affiliates (2016–2017)

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- Bleich, S. N., Wolfson, J. A., & Jarlenski, M. P. (2016). Calorie changes in large chain restaurants: declines in new menu items but room for improvement. *American journal of preventive medicine*, 50(1), e1-e8.
- Brunault, P., Courtois, R., Gearhardt, A. N., Gaillard, P., Journiac, K., Cathelain, S., ... & Ballon, N. (2017). Validation of the French Version of the DSM-5 Yale Food Addiction Scale in a Nonclinical Sample. *The Canadian Journal of Psychiatry*, 62(3), 199-210.
- Cantoral, A., Téllez-Rojo, M. M., Ettinger, A. S., Hu, H., Hernández-Ávila, M., & Peterson, K. (2016). Early introduction and cumulative consumption of sugar-sweetened beverages during the pre-school period and risk of obesity at 8–14 years of age. *Pediatric obesity*, 11(1), 68-74.
- Cohen, A. J., Richardson, C. R., Heisler, M., Sen, A., Murphy, E. C., Hesterman, O. B., ... & Zick, S. M. (2017). Increasing Use of a Healthy Food Incentive: A Waiting Room Intervention Among Low-Income Patients. *American journal of preventive medicine*, 52(2), 154-162.
- Crews, T. E., Blesh, J., Culman, S. W., Hayes, R. C., Jensen, E. S., Mack, M. C., ... & Schipanski, M. E. (2016). Going where no grains have gone before: From early to mid-succession. *Agriculture, Ecosystems & Environment*, 223, 223-238.
- De Young, R., Scheuer, K., Brown, T., Crow, T., & Stewart, J. (2017). *Some psychological benefits of urban nature: Mental vitality from time spent in nearby nature*. Nova Science Publishers.
- Etten, M. L., Kuester, A., Chang, S. M., & Baucom, R. S. (2016). Fitness costs of herbicide resistance across natural populations of the common morning glory, *Ipomoea purpurea*. *Evolution*, 70(10), 2199-2210.
- Finn, S. M. (2017). *Discriminating Taste: How Class Anxiety Created the American Food Revolution*. Rutgers University Press.
- García-Barrios, L., Cruz-Morales, J., Vandermeer, J., & Perfecto, I. (2017). The Azteca Chess experience: learning how to share concepts of ecological complexity with small coffee farmers. *Ecology and Society*, 22(2).
- Goulart, F. F., Perfecto, I., Vandermeer, J., Boucher, D., Chappell, M. J., Fernandes, G. W., ... & Moore, J. (2016). Emissions from cattle farming in Brazil. *Nature Climate Change*, 6(10), 893-894.
- Graham, J. B., Nassauer, J. I., Currie, W. S., Ssegane, H., & Negri, M. C. (2017). Assessing wild bees in perennial bioenergy landscapes: effects of bioenergy crop composition, landscape configuration, and bioenergy crop area. *Landscape Ecology*, 32(5), 1023-1037.
- Hajian-Forooshani, Z., Rivera Salinas, I. S., Jiménez-Soto, E., Perfecto, I., & Vandermeer, J. (2016). Impact of Regionally Distinct Agroecosystem Communities on the Potential for Autonomous Control of the Coffee Leaf Rust. *Journal of Environmental Entomology*, nww125.
- Hardee, J., Gearhardt, A., Cope, L. M., Zucker, R., & Heitzeg, M. (2017). Reduced precuneus activation in adolescents at risk for food addiction. *Drug & Alcohol Dependence*, 171, e82.
- Harrison, K., Moorman, J., Peralta, M., & Fayhee, K. (2017). Food brand recognition and BMI in preschoolers. *Appetite*, 114, 329-337.
- Harrison, K., Peralta, M., Jacobsohn, G. C., Grider, D. T., & STRONG Kids Research Team. (2016). The placemat protocol: Measuring preschoolers' healthy-meal schemas with pretend meals. *Appetite*, 96, 209-218.
- Heinze, K. L., Soderstrom, S., & Heinze, J. E. (2016). Translating Institutional Change to Local Communities: The Role of Linking Organizations. *Organization Studies*, 37(8), 1141-1169.
- Heller, Martin C., Robert Meyer, Amelia Willits-Smith, Gregory Keoleian, and Diego Rose. "Environmental Impacts of Diets: Development of an LCA Database to Link to Individual's Food Choices in the United States." Proceedings of the 10th International Conference LCA of Food. Dublin, Ireland. October 19-21, 2016. Paper No. 169: A705-A719.
- Hoey, L. (2017). Reclaiming the Authority to Plan: How the Legacy of Structural Adjustment Affected Bolivia's Effort to Recentralize Nutrition Planning. *World Development*, 91, 100-112.
- Hoey, L., Colasanti, K., Pirog, R., & Shapiro, L. F. (2017). Implementing Collective Impact for Food Systems Change: Reflections and Adaptations from Michigan. *Journal of Agriculture, Food Systems, and Community Development*, 7(2), 101-115.
- Horst, M., McClintock, N., & Hoey, L. (2017). The Intersection of Planning, Urban Agriculture, and Food Justice: A Review of the Literature. *Journal of the American Planning Association*, 83(3), 277-295.
- Jain, M., Singh, B., Srivastava, A., Malik, R. K., McDonald, A., & Lobell, D. B. (2017). Using satellite data to identify the causes of and potential solutions for yield gaps in India's Wheat Belt. *Environmental Research Letters*.
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- Kwarteng, J. L., Schulz, A. J., Mentz, G. B., Israel, B. A., Shanks, T. R., & Perkins, D. W. (2016). Neighbourhood poverty, perceived discrimination and central adiposity in the usa: Independent associations in a repeated measures analysis. *Journal of biosocial science*, 48(6), 709-722.
- Meek, D., Bradley, K., Ferguson, B., Hoey, L., Morales, H., Rosset, P., & Tarlau, R. (2017). Food sovereignty education across the Americas: multiple origins, converging movements. *Agriculture and Human Values*, 1-16.
- Miller, A. L., Kaciroti, N., Sturza, J., Retzliff, L., Rosenblum, K., Vazquez, D. M., & Lumeng, J. C. (2017). Associations between stress biology indicators and overweight across toddlerhood. *Psychoneuroendocrinology*, 79, 98-106.
- Mondal, P., Jain, M., Zukowski, M., Galford, G., & DeFries, R. (2016). Quantifying fluctuations in winter productive cropped area in the Central Indian Highlands. *Regional Environmental Change*, 16(1), 69-82.
- Park, J. Y., Dus, M., Kim, S., Abu, F., Kanai, M. I., Rudy, B., & Suh, G. S. (2016). *Drosophila* SLC5A11 mediates hunger by regulating K<sup>+</sup> channel activity. *Current Biology*, 26(15), 1965-1974.
- Perfecto, I., & Vandermeer, J. (2016). A LANDSCAPE APPROACH TO INTEGRATING FOOD PRODUCTION AND NATURE CONSERVATION. *Food Production and Nature Conservation: Conflicts and Solutions*, 133.
- Scavia, D., Bertani, I., Obenour, D. R., Turner, R. E., Forrest, D. R., & Katin, A. (2017). Ensemble modeling informs hypoxia management in the northern Gulf of Mexico. *Proceedings of the National Academy of Sciences*, 201705293.
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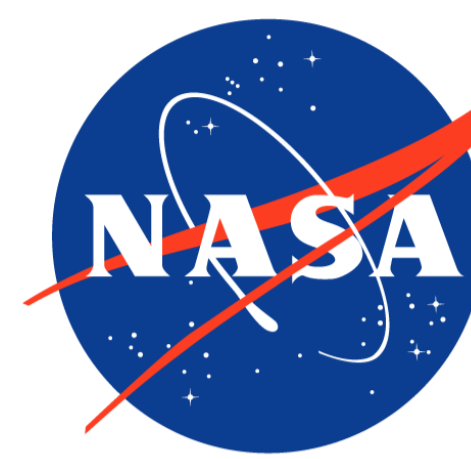
# Select Grants from SFSI affiliates (2016–2017)

Grants

Ivette Perfecto (SEAS) and John Vandermeer (EEB) joined forces with Javier Lugo (University of Puerto Rico) for a \$500,000 USDA research grant to study the ecosystems services in coffee production in the central coffee-producing region of Puerto Rico. The project aims to evaluate the role of shade in the promotion of the ecosystem services of pest control, pollination, production, biodiversity preservation, and carbon storage.

**\$500,000**

USDA research grant



Meha Jain (SEAS) received two grants from NASA, the New Investigator Program Award (\$262,612) and the Land Use Land Cover Change Award (\$751,707), to understand the impacts of changing weather patterns and groundwater depletion on agricultural production in India and whether farmers are able to adapt to these changes. She is collaborating with David Lobell (Stanford University), Ram Fishman (Tel Aviv University), Ashwini Chhatre (Indian School of Business), and Balwinder Singh (CIMMYT-India) on this work. They will use a combination of remote sensing, household surveys, and census datasets to understand these questions from the household to regional scales.

**\$262,612**

New Investigator Program Award

**\$751,707**

Land Use Land Cover Change Award

Andrew Jones (SPH) is leading a Bill and Melinda Gates Foundation funded project (\$339,467) in three regions of Ghana studying how animal husbandry may have impacts on anemia among women. In collaboration with colleagues in the School of Public Health, the University of Ghana, Innovations for Poverty Action, and Michigan State University, Jones and team are using a mixed-methods approach to examine diverse linkages between livestock and anemia including nutrition, infectious disease, and gender related pathways.

**\$339,467**

Bill and Melinda Gate Foundation funded project



Alison Miller (SPH), continued her NIH-funded work on childhood obesity with an intervention study focused on improving self-regulation in children as a possible mechanism for obesity prevention interventions (\$14 million across 3 years), as well as research focused on family processes related to food parenting (\$100,000) and child eating behavior (\$100,000).

**\$1.4 million**

3-year NIH grant



She also completed a research review on child stress and obesity for the Robert Wood Johnson Foundation Healthy Eating Research Initiative.



**\$8 million**

7-year NIH funded project

Mark Wilson (SPH and EEB) is part of a multi-university, NIH-funded, collaboration coordinated by colleagues at Michigan State University to evaluate how social and environmental factors affect risk of malaria in southern Malawi. Among the major hypothesized drivers of elevated exposure are agricultural activities near dwellings, particularly proximity to irrigated rice cultivation and smaller maize and vegetable plots nearby households. One goal of this 7-year, \$8 million project aims to understand how to balance food production benefits with risk and prevention of malaria.

In May 2017, The interdisciplinary team of SFSI affiliates Andrew Jones (SPH), Lesli Hoey (Taubman) and Marty Heller (Center for Sustainable Systems) received a three year Transformation Grant of \$450,000 from the Graham Sustainability Institute to research links between diet, human health and the environment in Kenya and Vietnam. Through their work, the team hopes 'to accelerate progress toward achieving sustainable diets in the global south.' The long term impact of the project will 'safeguard human health, mitigate climate change, and sustainably use the planet's natural resources.'



**\$450,000**

3-year Graham Sustainability Initiative Transformation Grant



# Food Systems Coursework

The University of Michigan now offers both an undergraduate food and environment minor and a graduate certificate in sustainable food systems.



Students in Margot Finn's ENVIRON139 tour Horning Dairy Farms in Manchester, MI. Photo: Lilly Fink Shapiro

## Undergraduate Course Spotlight

### Environment 139

Exploring the Food System: Farm, Factory, Market, Kitchen, Table & Trash

Dr. Margot Finn, Fall 2016

This course explores how the food we eat is shaped by and helps shape the environment, the economy, social identities like race and gender, labor conditions and inequality, and cultural institutions, like families and schools. A diverse range of perspectives on the food system with a series of hands-on experiences, readings and documentaries. Students visited farms and factories, large and small, where the food we eat is grown and processed. This course applied different definitions of “food deserts” to maps and census data from Washtenaw County to study the issue of food access. Students keep a diary of all the food they throw away in a week and they meet with people in the UM Dining system to explore the issue of food waste.



Alexandra Weber  
Food & Environment Minor  
Class of 2017

Is there a specific class or professor that sparked your interest in food systems?

Doug Kelbaugh's course, Architecture 357: “Architecture, Sustainability and the City”, really sparked and solidified my interest in what role urbanity can play in the food system. As a component of the course, a few students and I visited urban farms around Detroit. Seeing those operations in action structured most of the rest of my college experience.

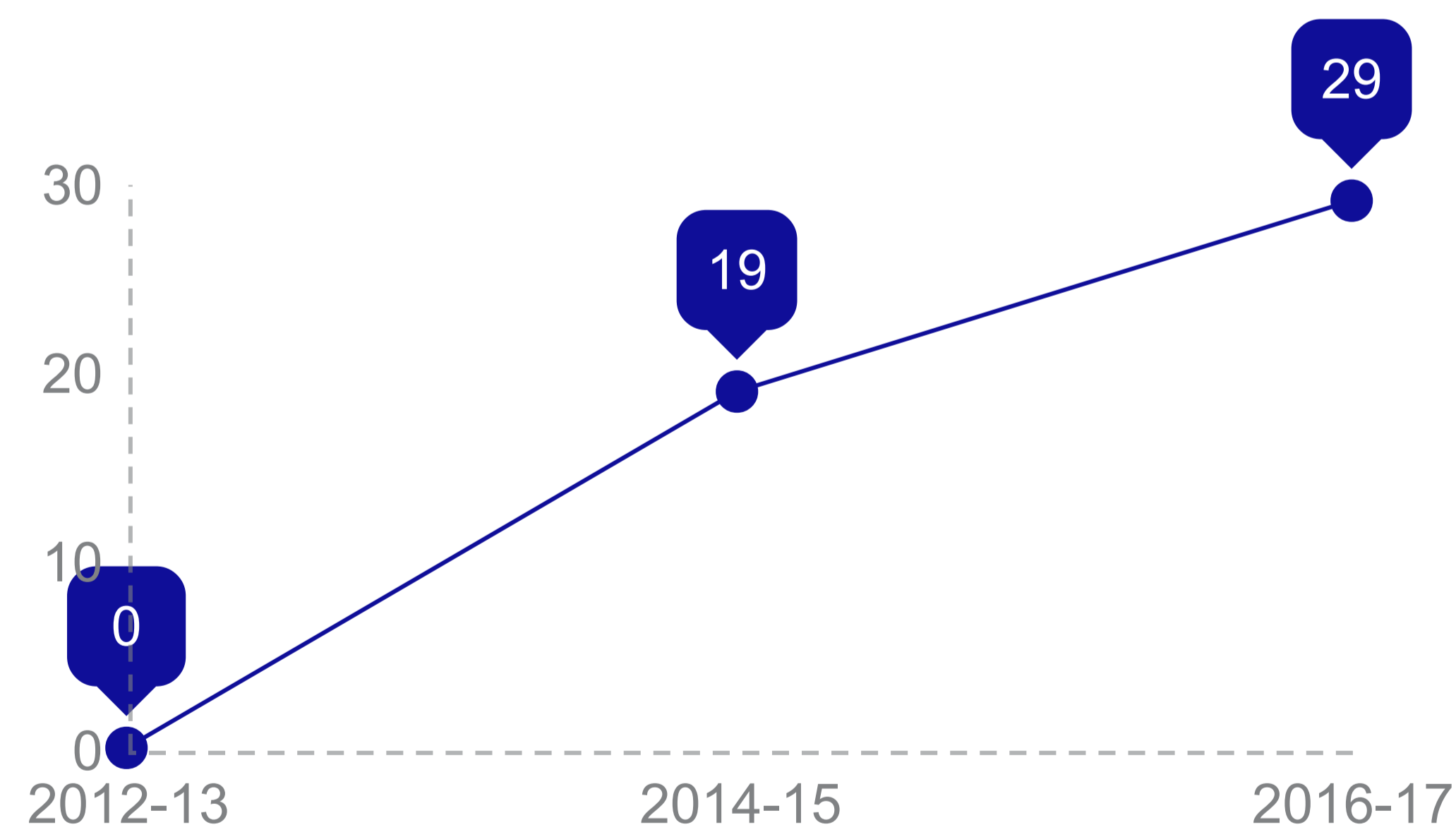
What resources or opportunities at U-M have had an impact on you?

The Food Literacy for All class truly left me speechless. I couldn't have been more pleased with the interaction between students and community and felt as though the speakers were unbelievably enlightening.

The Campus Farm in conjunction with Dining has also made a huge impact on the Michigan community.

As an Academic Ambassador for the University of Michigan Sustainable Food Program, I worked alongside some truly incredibly people striving to make our university a mecca for sustainability and food studies.

The number of students enrolling in the food minor is growing.



### NRE 501-002

Decoding Genetically Modified Crops

Dr. Aniket Aga, Fall 2017

This course grapples with varied controversies surrounding GM crops in different parts of the world, and relates them to broader questions of agrarian crises and the commodification of science.



# Linking interdisciplinary food systems study across campus

Courses

39 Undergraduate courses

22 Graduate courses

## Graduate Course Spotlight

Health Management and Policy 617  
US Food System and Public Health

Dr. Julia Wolfson, Winter 2017

In the US, today's modern food system is nearly unrecognizable from the food system of a century ago. Dramatic social changes and shifts in policies, technology, industry, and advertising have changed the way we produce, process, procure, prepare, and consume food. These changes have paralleled equally dramatic increases in rates of obesity, diabetes, and other diet related diseases among children and adults. We produce more food than we can eat, participate in a globally connected food system, and yet we face the dual problems of obesity and hunger/food insecurity, particularly among vulnerable populations with low socioeconomic status. This course addresses complex questions about how government has responded to diet related health problems, the appropriate role for government in efforts to facilitate healthy eating, and how to develop and evaluate policy approaches to help people eat better and improve health.



Incoming freshman in the Summer Bridge Scholars Program harvest jalapeño peppers at the Campus Farm. Photo: Lilly Fink Shapiro



Students in Ivette Perfecto and Catherine Badgley's RCIDIV/ENVIRON/EEB 316, class tour Tantre Farm in Chelsea, MI. Photo: Lilly Fink Shapiro



Andy Harmon, SNRE  
Food systems graduate  
certificate  
Class of 2017

Is there a specific class or professor that sparked your interest in food systems?

I appreciated taking a combination of courses for the graduate certificate including Soil Ecology (with Don Zak), Ecology of Agroecosystems (with John Vandermeer), and Agroecosystem Management (with Jennifer Blesh). Each instructor had a different voice and a different focus that broadened my understanding and appreciation of the complex interactions taking place in modern agriculture, how those interactions are managed by different groups of farmers, and how those choices create a legacy of ecological effects both on and off the farm.

What resources or opportunities at U-M have been particularly helpful to your interest in sustainable food systems?

I enjoyed going to the U-M campus farm and made sure to attend the Fast Food For Thought presentations every year. Probably the greatest opportunity was the development of the courses for the graduate certificate, many of which were being offered for the first time as I started my Masters. These opportunities enabled me to expand my understanding of foods systems and agroecology in ways that I would not have been able to previously.

In the future I hope to translate my experience with sustainable food systems into a position where I can work with farmers interested in preserving the ecological and cultural importance of their land alongside its agricultural value.



# Food Literacy for All

## Food Literacy

The inaugural 2017 course was launched by a leadership team of Jennifer Blesh (agroecologist and SEAS faculty), Malik Yakini (Detroit Black Community Food Security Network) and Lilly Fink Shapiro (SFSI).

According to Fink Shapiro, "This course is about recognizing forms of knowledge that exist outside the ivory tower and making those learnings accessible to everyone."

SFSI advisory board member John Vandermeer said "This course was not afraid to confront political power in the food system."



"One of the most significant aspects of Food Literacy for All is that it modeled what a university-community partnership can look like."

-Malik Yakini  
Course co-facilitator



Food Literacy for All speaker, Raj Patel, spoke about the origins of our current food system as depicted in 15th century art, recipes and artifacts. He described the large social and ecological costs of agricultural industrialization, and argued that fully understanding the Green Revolution requires an analysis of history, class, injustice, and power."

"I am FIRED UP after Saru's talk this evening and willing to do whatever it takes to get One Fair Wage on the Michigan ballot...Thanks so much, I am overwhelmed by how much this class has given to me this semester."

-Community attendee

"The larger goal underlying the course is to increase the number and expand the diversity of students involved in food systems studies at U-M."

-Jennifer Blesh  
SEAS faculty instructor



Ari Weinzwieg, Co-founder of Zingerman's, discussed his beliefs on food and cooking at Food Literacy for All in February 2017. He emphasized that small business should be based on equity, and that becoming mindful of our beliefs can help us to better understand the food on our plates and the ecosystem it came from.

"Out of all the courses I have taken thus far, Food Literacy for All was the most engaging and thought-provoking. I enjoyed the opportunity to learn from the community members in attendance as well as the amazing and knowledgeable speakers. The content presented in this course is the epitome of what I hoped to learn during my graduate school experience."

-Leah Webster  
Graduate student

The 2017 Food Literacy for All course was supported by the UM Sustainable Food Systems Initiative, with funding from the United States Department of Agriculture (USDA), LSA Instructional Support Services (LSA-ISS), the Office of the Provost, the International Institute, the Institute for the Humanities, the Institute for Research on Women and Gender (IRGW), Graham Sustainability Institute, the Center for Engaged Academic Learning (CEAL), and the Nutritional Sciences Department.



# Community members learning alongside students.

Food Literacy



Senator Debbie Stabenow, ranking member on the Senate Agricultural Committee, beamed into the Food Literacy for All course via video to emphasize the importance of federal legislation and the Farm Bill on food systems and to wish the students a productive semester. Photo: Lilly Fink Shapiro

Food Literacy for All pioneered a new course model at the University

20%

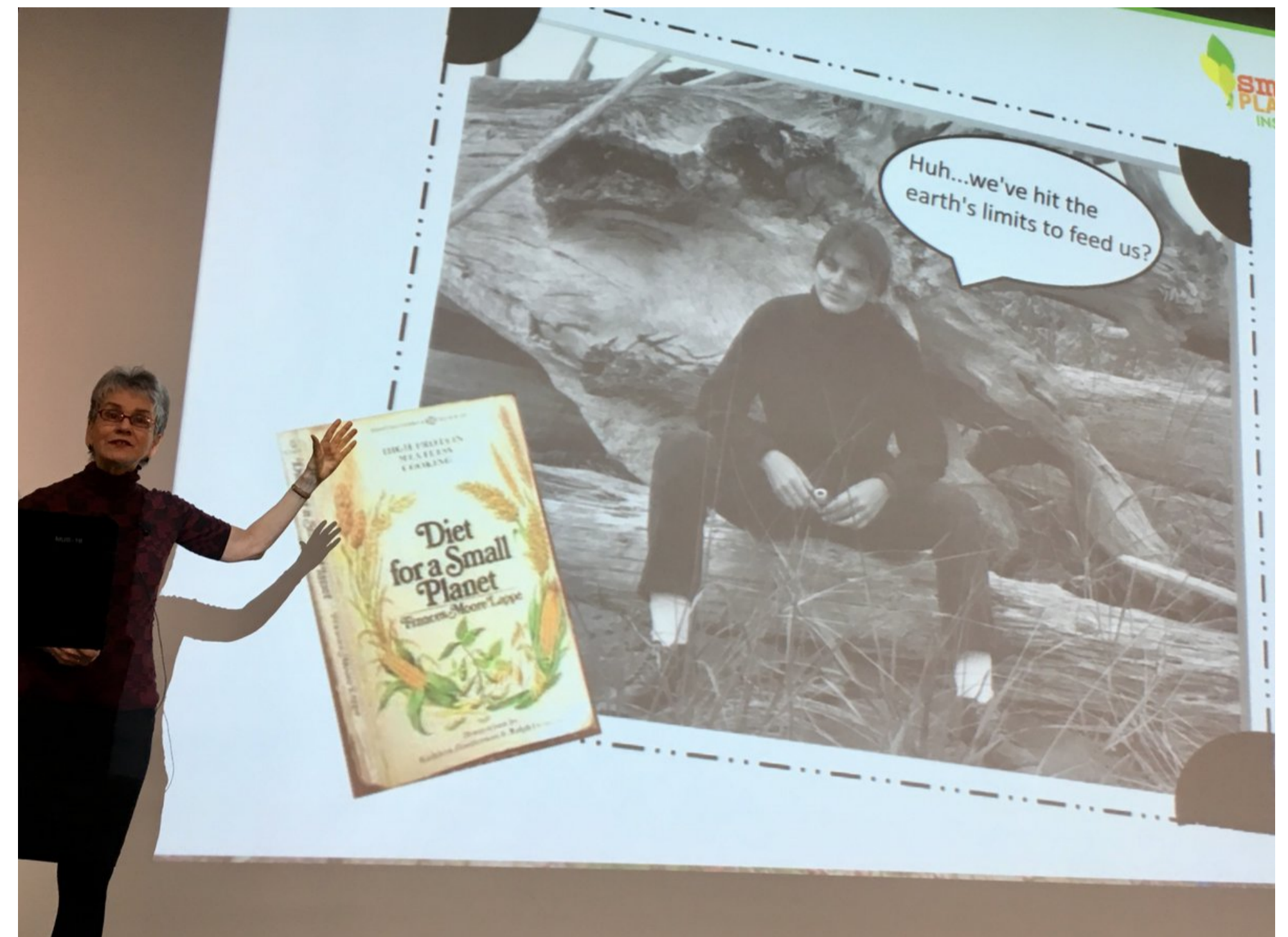
increase in student belief that community engagement is important to improve the food system

2,000+

views of Food Literacy for All sessions on YouTube

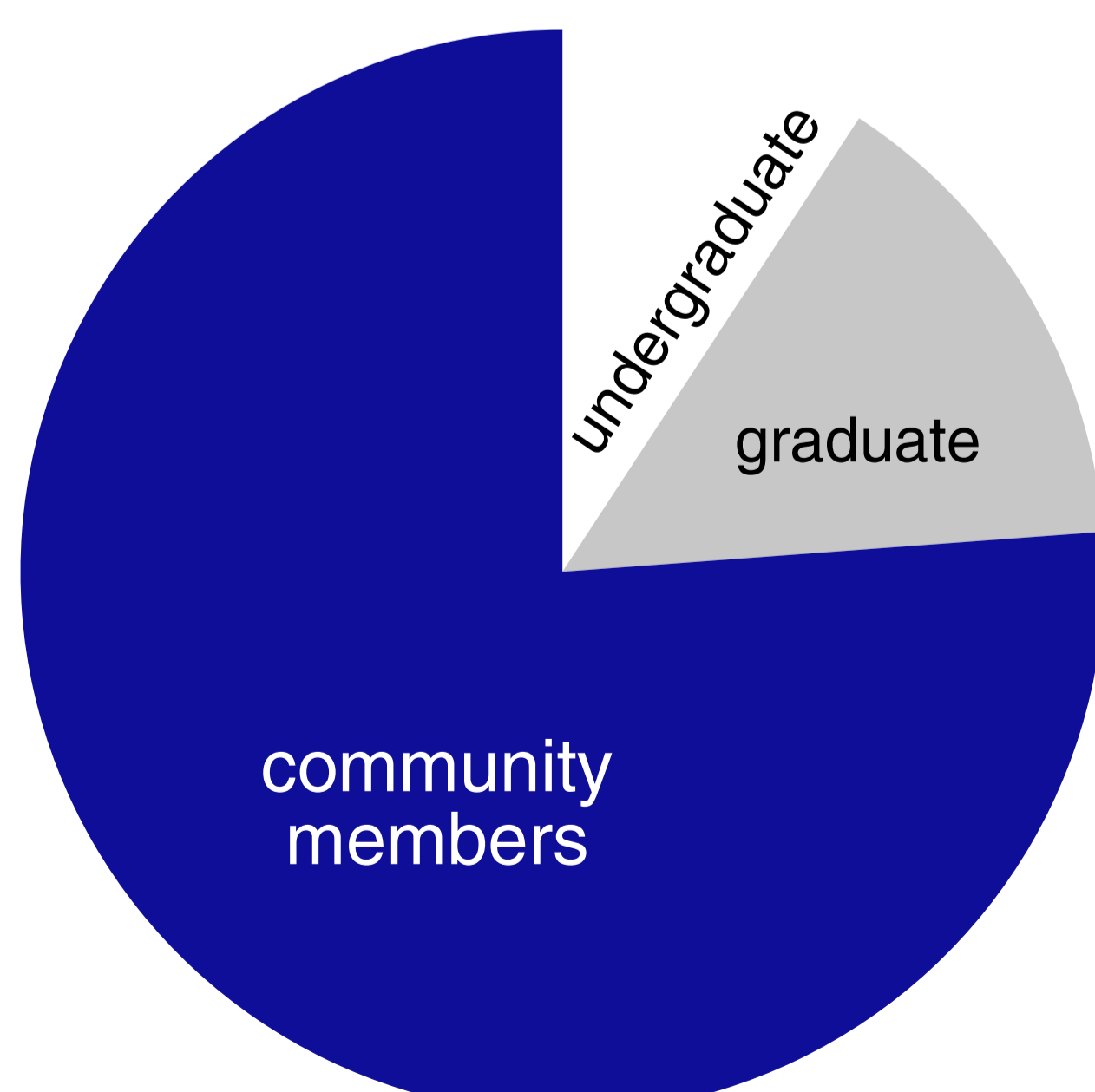
"Food Literacy for All" is a community-academic partnership course that leverages the academic strengths of the university with the expertise of community-based practitioners to build capacity for transforming our complex and inequitable food system. A pioneering class model for UM, Food Literacy for All, is an interdisciplinary course that welcomes community members to attend for free and learn alongside enrolled students.

The course is co-designed and co-led by both University and Detroit-based community leaders. Offered for the first time during the 2017 winter semester, the course featured high-profile speakers from across the country who attracted 200-300 people each week.



In January 2017, the Detroit Food Policy Council invited Food Literacy for All guest speaker Frances Moore Lappé to participate in a public panel on Detroit food policy and tour the hoophouses of Earthworks Urban Farm. The Detroit based grassroots initiatives left such an impression on Moore Lappé that she committed to use her public platform to share Detroit based narratives with audiences around the world.

137 students enrolled in the course.  
Over 438 different community members attended throughout the semester.



Food Literacy for All was featured in the SEAS alumni magazine for its innovative community engagement model and interdisciplinary approach to food systems education.



# Diversity and Equity as a part of everything we do.

Equity & Outreach



Jessica Robinson harvests kale at D-Town Farm in Detroit Photo: Malik Yakini

SFSI collaborates with the Detroit Black Community Food Security Network to offer a summer student internship at D-Town Farm, the largest urban farm in Detroit.



## Jessica Robinson SEAS Masters student, class of 2018 SFSI intern at D-Town Farm

I spend hours with my hands deep in the cool earth of D-Town Farm following the rhizomes of bindweed and milk thistle into the complex maze of roots within the soil. As I weed, the sun warms my soul and I feel as deeply rooted as the burdock I try in vain to pull from the growing bed.

Having learned about the theory of agroecological management and food systems through coursework, gaining practical experience in farming has been essential to connecting everything I've learned. Thoughts of nutrient cycling, competition, soil ecology, labor, resource accessibility, food sovereignty, and community run through my mind everyday.

Growing food is just one component of D-Town farm's objective. On the farm, the mulberries are ripening and as we pick the ripest berries, we have conversations about meditation, democracy, industry, and the need for a revolution. I'm grateful for these conversations and the ability of the mulberry tree to gather us together and slow us down.

It has been an honor to learn from the staff about farming and their lives, and how intertwined they are. What I find beautiful about these endeavors are the social, economic, and artistic collaborations that the farm staff build between themselves. These collaborations keep money, skills, and social capital circulating within the black community. I appreciate the opportunity to be a part of this community empowerment and I'm excited to see how the farm and its stewards continue to evolve.

In 2016 and 2017, SFSI teamed up with UMSFP and the Campus Farm to create a several week food systems immersion experience for incoming freshman participating in the LSA Summer Bridge Scholars Program. These activities are a part of SFSI's USDA Higher Education Challenge grant and aim to increase the diversity of students taking food systems courses, participating in UMSFP member groups, and volunteering and/or working at the Campus Farm.

The summer Bridge immersion program engaged underrepresented students in food systems courses, student groups, and volunteer opportunities.

**53%** of students are first generation college students

**47%** of students are interested in pursuing the food minor

**100%** of students increased their understanding of how food affects health, the environment, and issues of equity and justice



# SFSI Faculty and Staff Affiliates

## Faculty Affiliates

Susan Aaronson, MA, RD SPH  
 Aniket Aga, PhD SEAS  
 Jake Allgeier, PhD LSA  
 Alicia Alvarez, JD Law School  
 Olivia Anderson, PhD, RD SPH  
 Catherine Badgley, PhD LSA  
 Regina Baucom, PhD LSA  
 Jennifer Blesh, PhD SEAS  
 Shannon Brines, MEng SEAS  
 Victoria Campbell-Arvai, PhD SEAS  
 Alicia Cohen, MD Medical School  
 Raymond De Young, PhD SEAS  
 James Diana, PhD SEAS  
 Monica Dus, PhD LSA  
 Margot Finn, PhD LSA  
 Ashley Gearhardt, PhD LSA  
 Michael Gordon, PD Ross  
 Robert Grese, MSLA SEAS  
 Kristen Harrison, PhD LSA  
 Martin Heller, PhD SEAS  
 Andrew Herscher, PhD Taubman  
 Lesli Hoey, PhD Taubman  
 Mark Hunter, PhD LSA  
 MaryCarol Hunter, PhD SEAS  
 Barbara Israel, DrPH SPH  
 Meha Jain, PhD SEAS  
 Andrew Jones, PhD SPH  
 Gregory Keoleian, PhD SEAS, CE  
 Laurie Lachance, PhD SPH  
 Larissa Larsen, PhD Taubman  
 Steven Mankouche, MArch Taubman  
 Alison Miller, PhD SPH  
 Virginia Murphy, MA LSA  
 Joan Nassauer, MLA SEAS  
 Josh Newell, PhD SEAS  
 Richard Norton, PhD, JD LSA, Taubman  
 Scott Page, PhD LSA  
 Ivette Perfecto, PhD SEAS  
 Karen Peterson, DSc SPH  
 Thomas Princen, PhD SEAS  
 Don Scavia, PhD SEAS, CE  
 Amy Schulz, PhD SPH  
 Jasprit Singh, PhD CE (emeritus)  
 Sara Soderstrom, PhD LSA  
 Dorceta Taylor, PhD SEAS  
 Nicholas Tobier, MFA Stamps  
 Joseph Trumpey, MFA SEAS, Stamps  
 Vivian Valencia, PhD SEAS  
 John Vandermeer, PhD SEAS, LSA  
 Mark Wilson, ScD LSA, SPH  
 Julia Wolfson, PhD, MPP SPH  
 Lisa Young, PhD LSA

## Staff Affiliates

Alex Bryan UMSFP/Michigan Dining  
 Emily Canosa, MA Sustainable Living Experience  
 Barbara Hagan, PMP Sustainability Administrator  
 Lilly Fink Shapiro, MPH SFSI Program Manager  
 Juli McLoone, MA Special Collections Library  
 Jeremy Moghtader, MS Matthaei Botanical Gardens/Campus Farm  
 Adrienne O'Brien Matthaei Botanical Gardens and Nichols Arboretum  
 Keith Soster Michigan Dining  
 Maren Spolum, MPH, MPP SEAS  
 Emily Springfield, MS Dentistry

## SFSI Staff

Lilly Fink Shapiro, MPH SFSI Program Manager  
 Mariah Van Ermen SFSI Program Coordinator

## Advisory Board

Catherine Badgley, PhD LSA  
 Larissa Larsen, PhD Taubman  
 Ivette Perfecto, PhD SEAS  
 Mark Wilson, ScD SPH, LSA  
 John Vandermeer, PhD SEAS, LSA



SFSI affiliates gathered in the Fall of 2016 to discuss upcoming plans for the '16-'17 academic year. Photo: Lilly Fink Shapiro

## Key

LSA: Literature Science and Arts  
 SPH: School of Public Health  
 SEAS: School for Environment and Sustainability  
 CE: College of Engineering  
 Stamps: Stamps School of Art and Design  
 Taubman: Taubman College of Architecture and Urban Planning  
 Ross: Ross School of Business



# 02. University of Michigan Sustainable Food Program

## Mission

The UM Sustainable Food Program (UMSFP) is led by a student Leadership team and is mentored and advised by a staff Program Manager, as well as, an Advisory Board. UMSFP fosters collaborative leadership that empowers students to create a sustainable food system at the University of Michigan while becoming change agents for a vibrant planet. To further this mission, the UMSFP focuses its efforts in three specific areas:



Developing responsible citizens and leaders by facilitating formal and informal education on sustainable food topics



Strengthening communities through collaborative programming and outreach



Growing sustainable food that supports the wellbeing of people and the environment at the University of Michigan and beyond

UMSFP provides support to organizations on campus dedicated to building a sustainable food system and currently connects student Member Groups, seven campus gardens and the Campus Farm.



## UMSFP Welcomes a Full-Time Manager

UMSFP secured funds through the Presidents office to hire a full-time program manager and operate with a modest discretionary budget. The position, nested in MDining, was hired in tandem with a full-time Campus Farm manager. Alex Bryan re-joined his alma mater after spending 7 years in Lansing at the Greater Lansing Food Bank as Director of Agricultural Programs. He serves on multiple non-profit boards, including National Young Farmers Coalition; and, is a small-scale farmer himself, co-owning a 4-acre urban farm in Detroit, Food Field.

Left: Students of Permaculture Design Team table on the Diag to recruit members and share resources.  
Center: Campus Farm Student Managers work with staff and volunteers at the Cultivating Community Garden at Ginsberg Center.  
Right: UMSFP T-Shirts with the slogan 'Grow Blue' are sold at UGo's and Matthaei Botanical Gardens.



# Student-Led Systems Change

Food systems have many parts that range from production to distribution and waste management and there are students working to improve and educate people about this extensive system. These student organizations have hosted educational dinners, organized film screenings, planted community gardens, started a campus farm and much more. UMSFP supports these students, the University of Michigan and greater Michigan communities by helping them reach a broader audience and organize their unique visions into collective action around sustainable food.

## 11 Student Member Groups

Ann Arbor Student Food Co  
Cultivating Community  
Feel Good  
Food Industry Student Association  
Food Recovery Network  
Friends of the Campus Farm

Maize and Blue Cupboard  
Medical Campus Garden  
Student Advocates for Nutrition  
UM Permaculture Design Team  
UMBees



### Food Industry Student Association (FISA)

FISA is a predominantly engineering student group to support pathways for students interested in sustainable food careers. FISA hosted the 2nd annual Startup Food Panel, in partnership with MPowered. Representatives from four local companies: Vic and Barb Catering; JD's Motown Mustard; Shimmy Shack Vegan Food Truck; and Not Your Mama's Meatballs (a student startup) presented on start-up culture for food industry entrepreneurs and challenges they faced along the way. Over 90 students were in attendance.

### Student Advocates for Nutrition (SAN)

In December, SAN worked with Students Engaged in Global Health to host a Hunger Banquet. Following the Oxfam guide, attendees were randomly assigned to a hypothetical low, middle, or high income bracket and talked through stories of people throughout the world in each income bracket. Each income bracket was served a meal in accordance with their means, and the session ended with a discussion about the realities of poverty and hunger throughout the world.



### Maize and Blue Cupboard

Maize and Blue Cupboard, a student-run food pantry, experienced a significant increase in the number of attendees at each of the food distributions, with an average of 170 people at each event. In response to the increased need, Maize and Blue Cupboard expanded their food varieties and quantities, with a large focus on fresh produce and pantry staples, and increased to twice a month.



# Education to Action



Nicole Kasper  
PhD '15 Nutrition Sciences  
UMSFP Alum

## How were you involved with UMSFP?

I helped start Student Food Co; I worked on student food access and insecurity research for my doctoral degree; and, I received a grant for a 'Student's food hub' which hosted educational programs.

## What did you do after you finished your studies?

I went to the University of Colorado for a postdoc position working on Farm to School

## How is food a part of your life now?

Besides eating lots of it! I am working on Farm to School programs, research on school food environments, and will be soon starting research on post partum health with food as a major factor. I'm also excited to start a small farm at our home.

## Do you think your experiences with UMSFP influenced, inspired, or prepared you for what you do now in any way? If so, let us know how.

Absolutely! Everything about my experience with UMSFP has had a strong influence on my life! For example, I learned how to start and run a non-profit! I learned so much about local foods and the local food system that is now integral to the work I am doing. My visit to Tantre farms (UMSFP Retreat) was transformative - I think that was when something clicked and I felt like I really understood the true importance of local foods. Also, it made me want to pursue small scale farming and I recently bought a house that was once a small family farm.

## Is there anything else you want to share?

This was a very important component to my University experience and I think UM should strive to be a school that is known for its student food movement. There is a unique opportunity to lead right now.



Jeremy Moghtader and Emily Canosa table and offer samples at the Summer Bridge Program recruitment fair. For the second year in a row, UMSFP, SFSI, and Campus Farm have collaborated to host Summer Bridge Program students for 5 weeks in the summer. The weekly sessions focus on the intersections of food in the broader community and connect incoming freshmen to resources at the University. Weekly taste tests of farm-fresh food are a big hit.  
Photo: Lilly Fink Shapiro

## Student and Community Engagement

- 1 co-taught Seminar: Corn In East Quad
- 2 Enviro 391 Projects
- 5 Guest Lectures
- 2 National Conference Presentations
- 1 Off-Campus Food Guide Update with Barger Leadership Institute
- 2 Financial Support for Student Run Panels
- Student Scholarships for Local Food Summit
- Host Duke Campus Farm Visit
- PUSH Conference Attendance on Hunger
- 2 North Campus Sustainability Talks
- 300 Students Attend Harvest Fest



# Student Leadership

UMSFP  
Leadership

## 2017-2018 Student Leadership Team

Lauren Hoff - PitE; EEB; Creative Writing Minor (B.S. 2018)  
Ben Iuliano - EEB (B.S. 2018)  
Rebecca Simonov - Communications (B.A. 2019)  
Sara Farooqui - Biochemistry; Asian Studies (B.S. 2020)  
Kate Samra - Plant Biology; Food & the Environment Minor (B.S. 2019)  
Connor Kippe - PitE; Political Science (B.A. 2019)  
Aaron Brodkey - PitE (B.S. 2018)  
Claire Grenchik - Psychology (B.A. 2020)  
Adam Reichenberger - Sustainable Food Systems certificate (2018)



The 2016-2017 Leadership Team and representatives from Member Groups held a retreat at Tantre Farms, in Chelsea. The retreat focused on goals for the upcoming year and built a sense of community, broader than the University alone. Their dedication and service to advancing sustainable food cannot be thanked enough.

## UMSFP Advisory Board

Susan Aaronson, MA, RD - School of Public Health  
Shannon Brines, MEng - School for Environment and Sustainability  
Emily Canosa, MA - Sustainable Living Experience  
Raymond De Young, PhD - School for Environment and Sustainability  
Robert Grese, MSLA - Matthaei Botanical Gardens & School for Environment and Sustainability  
Loren Rullman, PhD - Associate Vice President for Student Life  
Sara Soderstrom, PhD - Organizational Studies & Program in the Environment  
Keith Soster - Director of Sustainability and Student Engagement Michigan Dining  
Joseph Trumpey, MFA - School of Art and Design, School for Environment and Sustainability

A musician plays at Harvest Fest, an annual celebration of the ending of the farm season and a welcome back to students. Harvest Fest was organized by UMSFP and Campus Farm with support from many partners. Transportation is provided by Planet Blue Ambassador Program and around 300 students attended the Sunday afternoon event.  
Photo: Christine Rickard



**Lauren Hoff**  
UMSFP Co-President.  
EEB and PITE dual major.  
Creative Writing Minor  
(B.S. 2018)

I'm one of the UMSFP Co-Presidents for the 2017-2018 year and this is my second year on the UMSFP Leadership Team. I joined UMSFP at the end of my sophomore year, shortly after declaring my PitE major. I had always been interested in sustainable food and agriculture and UMSFP is the perfect way to further explore that interest.

In the past year and a half, I've helped rebuild an urban farm in Detroit, spent a few weeks WWOOFing in North Carolina, learned about sustainable agriculture on a farm in Idaho, and even took a class on food and the environment. None of this would have been possible without the support of UMSFP and all of the unique and talented people that it has brought into my life. It's rare to find a group of people so committed to promoting sustainable food as UMSFP and each of its member groups, and I'm grateful to be a part of it.

While I am entering my final year at Michigan, my work with sustainable food certainly isn't over. After graduation, I'll be heading to medical school where I plan to study the interactions between human health and the environment, focusing specifically on agriculture. I hope to either get involved with, or start, a medical campus garden and one day open up my own organic farm.

My advice to fellow students who want to learn more about UMSFP and sustainable food is just don't be afraid to put yourself out there. Anyone who wants to learn about sustainable food will be welcomed with open arms by UMSFP and all of our member groups.



# Student Vision for the Future

## UMSFP Future Plans

### Create Sustainable Food Innovation Hub

The Sustainable Food Innovation Hub represents a physical embodiment of many individual goals and needs of UMSFP. It is a place of education, of community development, and for sharing food. It could be a portion of an existing building, it could be an existing house, or it could be a new space. Regardless, it is a physical space that is student directed and staff supported, open to all of the community.



Summer Bridge Scholars Program Photo: Lilly Fink Shapiro

It contains:

- classroom/workshop space;
- meeting room (for students and community);
- offices for member groups, student leaders/interns, and staff;
- commercial kitchen for use by member groups;
- store front for sales of campus farm produce and other local staple grocery items;
- storage space for member groups

On January 21st, 2017 a retreat was held with the UMSFP leadership team and member group representation facilitated by the Campus Farm Manager and UMSFP Manager. The purpose of the retreat was to support a student led refresher of the strategic plan, particularly around 'Big Hairy Audacious Goals'. Many of the original goals of UMSFP had been accomplished, such as the creation of a Campus Farm, hiring of staff, and clearer academic pathways in food systems.



Student Advocates for Nutrition (SAN) host a panel discussion, Food Policy in the Next Four Years. Speakers included Oran Hesterman, Betty Wiggins, Michelle Napier-Dunnings, and Amanda Edmonds; moderated by Andy Jones and Julia Wolfson. The star-studded event was supported financially by UMSFP.

### Comprehensive Support for UMSFP & Member Group Professional Growth

There will be clear support for student engagement, learning and leadership development throughout UMSFP's work. The leadership structure will be changed to encourage more regular engagement and to create growth opportunities for students. UMSFP member group benefits will be expanded and more collective action will be encouraged. The student voice has more impact when efforts are collaborative, coordinated, and continue for more than one year. Students have many priorities, and finding clear ways to help prioritize UMSFP is critical.

UMSFP will:

- explore options for a credited class, partial pay, or a combination over multiple years;
- increase internship and educational opportunities to a broader community of students to provide support for UMSFP and member group work;
- provide a more robust communication platform to champion UMSFP and member group work;
- offer mini-grant funds for member groups and others to implement UMSFP strategic plan;
- develop alumni and food systems career network

### Grow the Impact of the Campus Farm

There will be a significant expansion and scaling of the Campus Farm driven by production increase, increasing formalized academic and research collaborations, and scaffolding for student leadership and professional development. Production at the farm exists in the service of programmatic and strategic objectives and will focus on food grown by students prepared for and consumed by students through MDining.

Research involving faculty, staff, graduate and undergraduate students will be conducted in agroecology and food systems and the farm will serve as a living laboratory for teaching and learning about sustainable food production and systems at the University.

Just as the University recognizes the need for a vibrant art museum while realizing not everyone will be an artist, the University needs a robust Campus Farm to educate on and lead sustainability efforts in the broader food system.

It will involve:

- regular, easy, and dependable transportation to the farm;
- GAP Certification and significant sales to MDining;
- increasing winter production, 3-10 additional hoopouses, to match production to academic year;
- expanding partnerships with Student Food Co., Maize and Blue Cupboard, and other student-centric outlets of food;
- co-development of new courses and research collaborations;
- building formal and substantive connections to SEAS, SFSI, Food and the Environment minor, and Graduate Certificate in Sustainable Food Systems



# 5-Year Plan

Maintaining authentic and grassroots student voice and leadership are critical to the development of the future of the University. These goals, structure and ideas represent the student voice from the retreat and individual meetings with student stakeholders. It is evident that student leadership and autonomy must be maintained, while seeking highly collaborative and co-created structures between SFSI, UMSFP, Campus Farm, SEAS, SLE and other excited partners.

## Support Low-Hanging Fruit and Shoot for the Moon

While most of UMSFP goals fit into broad categories of work, it is important to keep individual and actionable goals at the forefront to provide the space for creativity, quick impact, and continued engagement of student interest.

UMSFP will encourage:

- a formal partnership with the new School for Environment and Sustainability, Sustainable Food Systems Initiative, and other educational programs;
- integration with Sustainable Living Experience, both formally and informally; green roof or garden on all new campus buildings and all existing buildings undergoing major renovations;
- accessible kitchenettes for students that live off-campus and would need space to refrigerate/reheat their lunch, encouraging thriftier, healthier, and more sustainable eating



## Increase Sustainable Food Culture

It is clear that a supportive campus culture for sustainable foods is critical to the success of UMSFP. Education, learning and development are more impactful when they are immersive and comprehensive. UMSFP will engage holistically with issues of campus culture, sustainable food awareness, and the intricate web that food plays in the many facets of our lives. UMSFP realizes that food culture, knowledge, and access are not the same for everyone and need to be approached intentionally with sensitivity and compassion. It is the goal of UMSFP that 'no one graduates from the University of Michigan without thinking critically about their personal food system.'

UMSFP will:

- encourage sustainable food education as part of orientation or as a freshman seminar;
- support off-campus students with healthy eating and composting guides and workshops;
- engage with a broader audience, including more direct bridges to issues related to DE&I;
- build connections to and celebrate cultural food heritage;
- support general sustainability efforts of the University, including cultural goals and efforts identified in the SCIP surveys;
- support work to make sure ALL of the UM community has equitable access to 'Good Food'



Urban farmer, Melvin Parson of We the Peoples Growers Association visits with Summer Bridge Scholars Program Students. Farmer Parsons spoke about his business and goals of creating a world-class urban farm, hiring formerly incarcerated individuals.  
Photo: Lilly Fink Shapiro

## Honor the Needs and Knowledge of the Broader Community

Food crosses boundaries more easily and more directly than other education concepts at the University. The line between campus and the broader community is constantly blurred for students; whether eating in dining halls supplied by food distributors and local farmers, rescuing unused food to donate to a local food pantry, distributing food from the local food bank to in-need students and staff, or finding an internship with a community partner. It is the goal of UMSFP to build an intentional connection to a broader community that respects education as a reciprocal process. UMSFP will respond to community needs and interests rather than exert desired outcomes on others, learning from and partnering with the Ginsberg Center and other exemplary departments on campus.

UMSFP will:

- build stronger connections to organizations and food systems leaders in Ypsilanti, Ann Arbor, Flint, and Detroit, using the success of Food Literacy for All as a model of successful community engagement



# 03. University of Michigan Campus Farm

The Campus Farm serves the greater University of Michigan community through formal and informal educational opportunities and research related to the production of sustainable food.



## Living Learning Laboratory

The Campus Farm is a place where students, faculty and staff can engage hands on in food production, education and research and where student managers engage in leadership development, authentic educational opportunities and problem solving



## Food Grown by Students for Students "From Our Farm to Our Tables"

In partnership with MDining Student Managers of the Campus Farm are growing produce to feed their fellow students. Increasing awareness of the impact of sustainability in food production to students in residence halls all across campus



## Academic Engagement Faculty, Courses, Programs and Research

The Campus Farm hosts and engages with food systems related courses from all across campus, partnering and collaborating on new course development, lab exercises, and research with faculty, graduate and undergraduate students

## Farm Manager Hired!



In 2016 a long held goal of the Campus Farm was achieved as the first full-time permanent staff farm manager was hired. Jeremy Moghtader joined the staff team in November at the Matthaei Botanical Gardens where the farm is located, with the goals of facilitating and mentoring robust student management as well as increasing program development at the farm for teaching and research. Prior to joining CF Jeremy was the director of programs and farm manager at the MSU Student Organic Farm where he worked for the past 12 years. Jeremy is a UM alum with a BS in Economics (1998) and MS in Resource Ecology and Management from SNRE/SEAS (2004).

Left: Sydney Fuller (Art- Design/ Program in the Environment 2018 & Campus Farm Student Manager) watering in the inaugural hoop house planting at the CF  
Center: Blake Mcwatters (PiTE 2020) and Haley Kerner (PiTE 2019) both Campus Farm Student Mangers with bountiful produce headed to MDining  
Right: Eliot Jackson (SEAS MS 2017), conducting soil sampling for Blesh Agroecology Lab (SEAS) research at Campus Farm  
Bottom: Jeremy Moghtader (Matthaei Botanical Gardens and Nichols Arboretum) with Kossak storage kohlrabi



# A Hoophouse Raising

Students and Volunteers raised a 30'x 96' Passive Solar Greenhouse (aka a hoophouse).



Students and Volunteers Raising Campus Farm's First Hoophouse November 2016



Dorris Duke Conservation Scholars (DDCS) visiting the Campus Farm in 2017. They are one of the several summer programs with which Campus Farm engages, including, M-STEM Academies and the LSA Summer Bridge Scholars Program.

The Planet Blue Student Innovation Fund supported the first hoophouse at the Campus Farm which helped to synchronize production and student engagement opportunities with the academic year

## What is a Hoophouse?

A passive solar greenhouse or high tunnel or hoophouse as the regional variations go are names for a structure that is heated only by the sun, but allows for the year round production of local produce even in places with cold winters like MI. Solar radiation enters the plastic film covered structure and is either absorbed by the thermal mass of the soil or reflected back up toward the roof where much of it is then reflected back down into the greenhouse the same way it works in our atmosphere hence the "greenhouse effect". Harnessed in this fashion, it allows for production of nutritious leafy greens like spinach, kale and collards all winter long while extending the production of warm season crops like tomatoes, cucumbers and peppers earlier and later into the season.

"These structures allow students the opportunity to engage with the farm throughout the academic year when most students are on campus both with planting and harvesting. In addition winter production better meets the peak demand for MDining at a time when local produce is hardest to source", according to Campus Farm Manager Jeremy Moghtader who has over 12 years of experience growing local produce year round in these structures.

More hoophouses are planned for the Campus Farm in the coming years with the next 2 houses being built fall 2018.

15	Courses visited the Campus Farm or received guest lectures from the Campus Farm manager
297	Students comprising 427 contact hours engaged with the farm during class
530	Student visits Friends of the Campus Farm student organization facilitated to their workdays
25	Friday Campus Farm workdays during fall and winter term with free transportation organized by Friends of the Campus Farm



Left to Right: Jena Brooker, Doris Duke Conservation Scholar, and Campus Farm Student Managers Haley Kerner and Connor Kippe, harvest kale and chard for MDining in the hoophouse.



# GAP Certification Enables Campus Farm to Sell Produce to MDining



"Producing food for my fellow students is an empowering and impactful experience... one that I hope can help raise awareness of critical issues and innovative solutions in Sustainable Food Systems."

-Kate Samra,  
Campus Farm, lead student manager  
Plant Biology and PiE (2019)  
UMSFP board member



Good Agricultural Practices & Good Handling Practices

Food Safety Audit

On June 16th, 2017 the University of Michigan Campus Farm achieved another long standing goal. It achieved USDA GAP Certification through the MI Group GAP Network.

The process requires the development and implementation of a food safety manual and procedures. In addition the process involves extensive record keeping along with actions that help reduce risk of food borne illness like employee training, field monitoring, and harvest bin sanitizing. Traceability records that link produce back to the field where it was grown as well as regular testing of water used in crop irrigation and produce washing to ensure water is free from illness producing pathogens is also required.

"There are a lot of technical details and the audit process involves both an audit of the farms records and procedures as well an inspection of the facility and observation of the harvest and post harvest handling process," says Farm Manager Jeremy Moghtader who help lead the student managers successfully through the process.

"But in the end if you always remember that you are handling peoples food and to treat it in a manner you would like a stranger to handle your own food, wash their hands, don't handle food when sick, use clean containers etc... you have a pretty good start."



Top Left: Campus Farm student managers make the first delivery to Hill Dining Hall  
Top Right: chard being washed at Campus Farm for delivery to MDining  
Bottom Left: cherry and pear tomatoes from Campus Farm hoothouse in East Quad  
Bottom Right: East Quad chef preparing zucchini from the Campus Farm

**First Delivery: 100 lbs of chard and 100 lbs of kale with produce being prepared for lunch less than 20 minutes after leaving the Campus Farm**



# Research and Course Engagement

## Blesh Agroecology Lab (SEAS)

Dr Jennifer Blesh and her Agroecology Lab are conducting several experiments this season at the Campus Farm investigating links between plant diversity in farm fields and multiple ecosystem services including soil health, soil nutrient cycling processes, and nutritional value of food crops.

The Campus Farm hosted research in 2017 for 2 Blesh Lab PhD students, a masters student, and a senior honors thesis student.

pictured: top Dr. Jennifer Blesh, Eliot Jackson (SEAS MS2017), Anne Elise Stratton (SEAS PhD Student)



Etienne Herrick  
Senior Honors  
Thesis researcher  
in Blesh  
Agroecology Lab  
(SEAS)

Why are you interested in Agroecological Research and what were the benefits to doing your research at the Campus Farm?

I have a strong interest in improving the health of both humanity and the environment. Agroecology represents a systemic approach to do just that, encompassing ecological, social, political, and economic dimensions, which must all be carefully considered when attempting to solve a problem as big and complex as our broken food system.

Doing my research at Campus Farm enabled me to conduct a field research project in a more controlled environment exploring how to enhance ecosystem services in agricultural systems through the application of cover crops (non-harvested crops).

Etienne was the President of the Student Food Co., a UMSFP member group. She is pursuing a B.S. in PitE with a Terrestrial Ecology specialization, a Food Systems minor and Honors Thesis

## Diverse Farming Systems Theory and Practice SEAS 553

Dr. Ivette Perfecto, SEAS



Corn & Bean Intercrop experiment planted at Campus Farm Summer of 2017 for SEAS 553

Campus Farm Manager Jeremy Moghtader collaborated with Dr. Ivette Perfecto to design, plant and maintain an inter-cropping system that SEAS 553 students will use for an all day field lab investigating over-yielding in systems where two crops are planted together.

## Why did you choose to be a student manager at the Campus Farm?

I love that at the farm we provide our peers with fresh, quality, organic produce through the dining halls on campus. The inequities and difficulties that farmers around the world face at every scale are very concerning to me. As an employee of the Campus Farm, I am learning not only how to grow quality produce but also how to think about sustainable solutions for complicated problems that farmers face every day.



Sydney Fuller  
Campus Farm Student  
Manager | Art and  
Design & PitE (2018)

## The Campus Farm: Looking Ahead

- Collaboration with SEAS around the Food and Environment minor to develop gateway or capstone course experiences based at the Campus Farm
- Increase the number of courses and the number of researchers utilizing and collaborating with the Campus Farm
- Build strong and diverse student management team that empowers students to develop and build skills needed to be positive change agents for a more sustainable world
- Build more hoopouses and grow more food to feed minds and bodies across campus



# 04. University of Michigan MDining

Michigan Dining works directly with local farmers and producers to include sustainable foods in menus. It has a goal of serving 20 percent of food on campus purchased from farms within a 250-mile radius.



MDining has nine dining halls, catering services and more than two dozen markets and cafés located across the Ann Arbor campus.



MDining serves approximately 25000 meals a day, over 4 million per year.



97% of dining staff are Planet Blue ambassador certified. Staff go through a sustainability training that focuses on our campuses' five sustainability goals (Waste, water, food, energy, and culture).



Left: MFarmers Market set up on South Ingalls Mall with posters highlighting local food.  
 Center: Local farmer, Dale Lesser, sells honey at the MFarmers Market on South Ingalls Mall  
 Right: Chef Matt Zatirka prepares sustainable seafood for students at an event in South Quad Dining Hall.  
 Bottom: Chefs Nicholaus Machinski, Brian Barker, Frank Turchan, and Allan Sheldon are checking out produce from its source at UM Campus Farm.



# Dining Prioritizes Sustainable

Food expenses are shifting to more local and sustainable.

**18%** of sustainable/local food spend in Michigan Dining.

**90%** of Michigan Dining food expenses are spent on Michigan-based companies

Michigan Dining works with local growers, producers and vendors to increase local and sustainable food purchases. What does that mean?

## Local

Grown locally (within 250 miles or within the state of Michigan) Processed foods that are processed locally with more than 50% of the ingredients by cost are grown locally.

## Sustainable

Third party certified (Organic, Fair Trade, Rainforest Alliance, MSC, etc)

## Michigan Company

Michigan based company and product was not sourced locally or processed using the definition above.

Tom Zilke, of Zilke Vegetable Farm, sells produce to market goers on South Ingalls Mall. Tom provides fresh produce to MDining from his farm in Milan, MI.

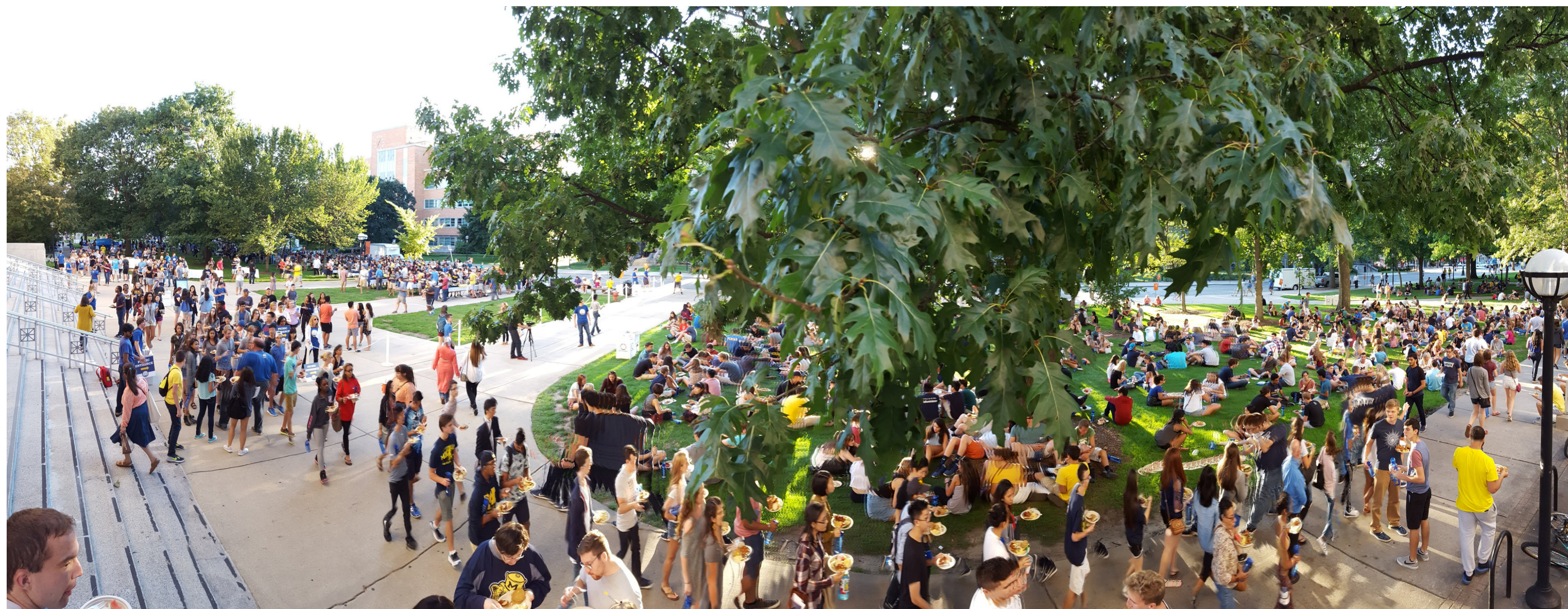


The Expanded M Farmers Markets celebrate healthy eating and sustainable living during a day filled with chef demonstrations of easy recipes, tips for healthy eating, free samples, giveaways, information stations and more.

Fresh fruits, veggies and other locally sourced food items are sold by local farms, including the Campus Farm. The partnership event focuses on sustainability and education. Four larger events targeted towards students were held in Fall 2016, two on North Campus and two on Central Campus. The market is a valuable opportunity for students to interact with the farmers who produce the University of Michigan's food and to directly access healthy food options.

M Farmers Market is a collaboration of Michigan Dining, Central Student Government, MHealthy, Planet Blue, and the Student Sustainability Initiative.

Incoming first year students eat food at the convocation picnic, coordinated by New Student Programming, MDining, and Office of Campus Sustainability. The zero waste event is also a distribution point for students to receive a free reusable water bottle to aid the University's goal of waste reduction.



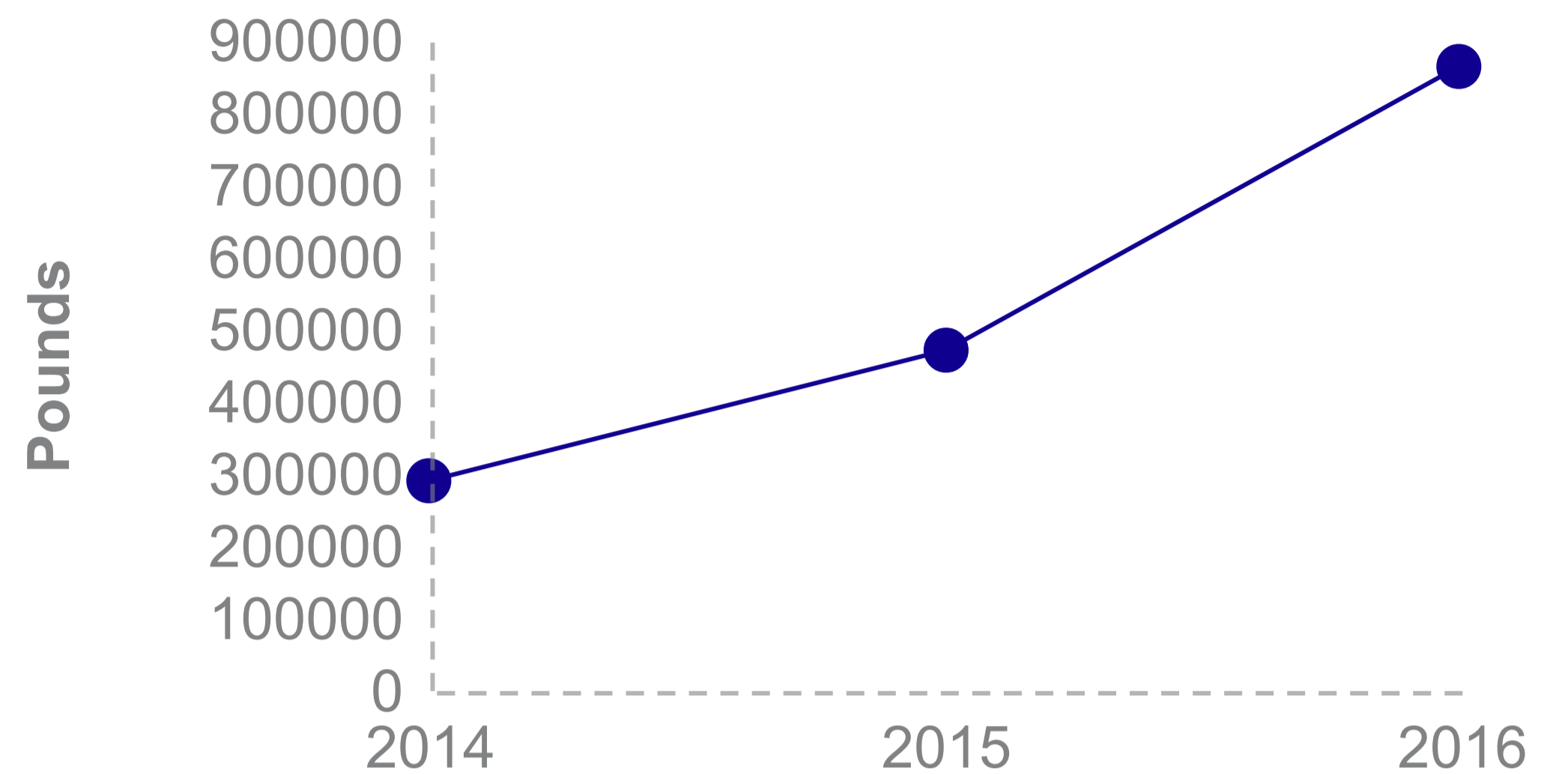


# From Seed (or Sea) to Table to Soil



An MDining employee prepares food for service at South Quad Dining Hall. During the winter semester Dining rolled out composting options at all of its retail and cafe locations. Now all of Dining, including Catering, Residential and Retail offer pre- and post-consumer composting. Pilots are underway at Bursley and Munger residence halls.

## Compost increases across dining



In an effort to provide a living-learning laboratory, MDining hosts the Planet Blue Student Leaders Program. Planet Blue Student Leaders work in Student Life as peer-to-peer "eco-reps" and focus on supporting a culture of sustainability.

This winter, MDining hosted the Culinary Institute of America's regional meeting with a strong focus on highlighting Sea to Table options for attending members. The meeting is hosted by a different restaurant or institution each month and highlights the locations strength or point of pride. With a continued shift towards sustainable and local, MDining focused on sustainable fisheries.



Through a partnership with Sea to Table, a company that provides seafood from sustainable wild fisheries, MDining staff prepared fish that are typically not seen in commercial and retail locations, such as monkfish and spiny dogfish. These atypical fish are in abundance in the sea and can take the pressure off highly utilized seafood.



Daniel Wu - EEB (B.S. 2018)  
Planet Blue Student Leader  
Composting Pilot

### Daniel's experience working with PBSL:

What do you do with your banana peel once you've eaten your banana? In most places you would have to throw it away. But for Bursley residents, this is no longer the case!

Composting is a simple process and many other universities have successful residence hall composting programs. However, it isn't as simple as plopping down some bins and telling people to use them.

It took independent work, group meetings and one-on-one meetings to make it all happen. We, as Planet Blue Student Leaders, researched composting, contacted other schools to learn about their best practices for implementing and running a program, selected and ordered bins, organized a competition to promote student participation, planned a kick-off event, recruited students to participate in the pilot, developed a slew of marketing materials, and coordinated with the awesome facilities team. Working on the Bursley composting pilot thrust me right into the inner workings of the university.

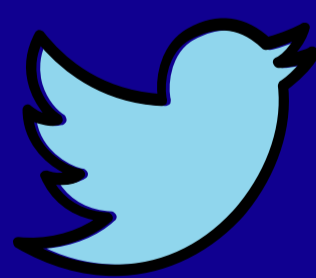


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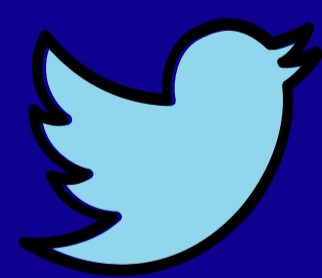
# Hungry for more?

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Sustainable Food  
Systems Initiative  
(SFSI)



Sustainable Food  
Program  
(UMSFP)



Campus Farm



Dining and  
Operations

