Using SMAP Soil Moisture Measurements for Carbon Flux Studies in Ohio

- Joel Johnson, ElectroSciences Laboratory (Principal Investigator)
- Rattan Lal, SENR (Co-Principal Investigator)
- Alexandra Bringer, ElectroSciences Laboratory
- Jose Guzman, SENR

Soil Moisture Active and Passive (SMAP) satellite measurements of Soil Moisture and Carbon properties will be validated using local in-situ test sites and lab measurements by the Carbon Management and Sequestration Center (C-MASC) of the SENR and Ohio Agricultural Research and Development Center. These validation tests of remotely sensed information will assess SMAP’s data quality and also facilitate the use of SMAP data to understand properties which impact soil quality.

OSU Collaborative to Reduce and Redirect Consumer Food Waste

- Brian Roe, AEDE (Principal Investigator)
- Angel Arroyo-Rodriguez, CRP & Ohio EPA
- Emily Buck, ACEL
- Aparna Dial, OEE
- Mike Long, Resource 100 LTD
- Corby Martin, Pennington Biomedical
- Danyi Qi, AEDE
- Annie Specht, ACEL

Reducing the amount of food waste (FW) that consumers generate and redirecting FW from landfills to sustainable outlets are key goals that, if met, can transform the food system by bolstering food security and enhancing environmental sustainability. To achieve this we are creating and testing a smartphone app that conveniently and accurately measures household FW that can be used to evaluate various campus and community interventions. To guide its creation and the trial of new interventions, we will collect national data concerning consumer awareness of and engagement with FW and we will engage campus, local and national experts and stakeholders in evaluating current best consumer FW programs and in generating ideas for new education, communication and market interventions to reduce or redirect consumer FW.
New Directions in Food Security: Balancing the Growing Need for Meat Protein with Animal Welfare and Biodiversity Conservation

- Alia Dietsch, SENR (Co-Principal Investigator)
- Jeremy Bruskotter, SENR (Co-Principal Investigator)
- Stan Gehrt, SENR (Co-Principal Investigator)
- Henry Zerby, Animal Sciences (Co-Principal Investigator)
- Francis Fluharty, Animal Sciences
- Tony Parker, Animal Sciences
- Elizabeth Parker, Animal Sciences
- Gabe Karns, SENR
- Brent Sohngen, AEDE
- Stephanie Shwiff, USDA-APHIS National Wildlife Research Center
- Stewart Breck, USDA-APHIS National Wildlife Research Center
- Julie K. Young, USDA-APHIS National Wildlife Research Center
- Eric Gese, Utah State University
- Roger A. High, State Sheep Extension Associate

Our project addresses the compelling challenge of balancing food security with public interests in animal welfare and carnivore conservation. Specifically, we investigate different social and ecological factors that contribute to an understanding of carnivore-livestock dynamics within eastern landscapes. Findings will help pave the way for more equitable and sustainable meat-production systems.

TEST PLOTS JOURNAL

- Andrew Barringer, MLA (Principal Investigator)
- Sarah Cowles, L Arch
- Ryan McKee, BSLA
- Alex Pisha, MLA
- Tameka Sims, MLA
- Ryan Hillyer, BSLA
- Joie Chan, MLA
- Candace Black-Housh, MLA
- Katie Pettie, BSLA
- Mariel Fink, BSLA
- Oscar Camacho-Cabrera, BSLA
- Jeffery Lape, BSLA
- Desiree Angelotta, BSLA
- James Dumbauld, BSLA
- Kristina Granlund, MLA

TEST PLOTS is a new student journal presenting research gardens as a landscape typology. TEST PLOTS reviews research gardens created by multiple disciplines, uncovering their relationship with territorial transformation.
Transforming the Food Environment for Better Health: A Systems Approach

- Ayaz Hyder, Division of Environmental Health (Principal Investigator)
- Michelle Kaiser, College of Social Work
- Phyllis Pirie, College of Public Health
- Colleen Spees, College of Medicine
- Kareem Usher, Knowlton School of Architecture
- Jake Carr, Dept. of Geography
- Cheryl Graffagnino, Columbus Public Health

A systems approach provides a novel methodology to integrate across complex features of the food environment. We apply this approach using data collected by the interdisciplinary Food Mapping Team in Columbus, Ohio to identify transformative policies for promoting optimal health.

Crop Health Monitoring and Early Detection in Food Crops

- Wladimiro Villarroel, Dept. of Electrical and Computer Engineering (Principal Investigator)
- Lisa Fiorentini, Dept. of Electrical and Computer Engineering
- John Fulton, Dept. of Food, Agriculture, and Biological Engineering
- James Jasinski, OSUE
- Sally Miller, Dept. of Plant Pathology

Ohio producers can be severely impacted by downy mildew on cucumber and powdery mildew on pumpkin and squash. Our multi-disciplinary team will explore how a UAV-based system equipped with multiple sensors can be used to scout crop fields and recognize specific diseases by their “signature” on leaf tissue. Implementation of an autonomous disease detection system can help producers protect against yield loss and ensure economic viability of the farm operation.

Changes on the Land: Ohio’s AgriCultures, Past and Future

- Rick Livingston, Humanities Institute Associate Director (Principal Investigator)
- Patricia Williamsen, Humanities Institute Executive Director
- David Merkowitz, Humanities Institute Assistant Director
- Michael Straughter, OH Outreach Coordinator
- Claudia Plumley, Great Lakes Publishing

The Humanities Institute will partner with the Ohio Humanities Council to produce Ohio’s Changing Nature, a magazine-style illustrated reader in environmental humanities. Support from InFACT will help tell stories of agriculture change throughout the state over the past thirty years, from family farms to global markets. A backing website with additional material will foster public conversation about sustainable futures for Ohio’s natural environment and its farmers.
Our Common Home Food Security Project: A Youth Based Approach to Climate Resilient Agriculture

- Greg Hitzhusen, College of Food, Agricultural, and Environmental Science (Co-Principle Investigator)
- Robert Agunga, CFAES and Center for African Studies (Co-Principle Investigator)
- Laura Joseph, Center for African Studies
- Dustin Homan, CFAES, Ohio 4-H
- Steven Blalock, Mershon Center for International Security Studies
- Malik Moore, Northland-YMCA

Utilizing space at YMCA-Northland in Columbus, Ohio and a school in Accra, Ghana, youth and adults will connect to establish gardens and engage in 4-H activities to enhance food security, promote climate resilient food systems, and positively develop youth through life and livelihood skills. This was inspired by a visit to Ohio State and the city of Columbus by Cardinal Peter Turkson, an internationally known environmental and social activist who was instrumental in drafting Laudato si: On Care For Our Common Home.

Ohio’s Food and AgriCulture Vision for the Future: A collective impact strategy and research agenda for InFACT and Ohio Food System Partners

This project will connect OSU leadership and expertise to facilitate a shared vision among food policy and program leaders in this state. This vision will be the foundation for a collaborative and accelerated transformation of our local food systems.

- Jill Clark, John Glenn College of Public Affairs
- Andy Wapner, College of Public Health and Center for Public Health
- Nick Kawa, Anthropology
- Casey Hoy, Agroecosystems Management Program
- Michelle Kaiser, Social Work
- Carol Smathers, OSUE Farm to School
- Erin Lin, Political Science
- Hannah Scott, OSU South Centers
- Rachel Metzler, OSU student and Real Food Challenge
- Laura Kington, Regional Field Organizer
- Valerie Heiby, Ohio Finance Fund
- Tevis Foreman, Produce Perks SW OH, Cincinnati Health Dept.
- Ashley Davis, Ohio Department of Health
- Michelle Moskowitz Brown, Local Matters
- Leslie Schaller, ACEnet
- Amalie Lipstreu, Ohio Ecological Food & Farm Association
- Carol Goland, Ohio Ecological food & Farm Assoc.
- Amy Bodiker Baskes, Franklin County Local Food Council
- Beth Knorr, Countryside Conservancy & Summit Food Policy Coalition
FORC—the Food Opportunity Research Collaborative

- Dan Remley, OSU South Centers Extension (Principal Investigator)
- Glennon Sweeney, Kirwan Institute for the Study of Race and Ethnicity
- Joshua Bates, Kirwan Institute for the Study of Race and Ethnicity
- Bernadette Hanlon, Knowlton School of Architecture, City and Regional Planning
- Kareem Usher, Knowlton School of Architecture, City and Regional Planning
- Irene Hatsu, Human Sciences Administration
- Laquore Meadows, Franklin County Extension
- Maurice Stevens, Kirwan Institute for the Study of Race and Ethnicity, Comparative Studies
- Michelle Hand, College of Social Work
- Michelle Kaiser, College of Social Work
- Colleen Spees, Medical Dietetics
- Jill Clark, John Glenn College of Public Affairs
- Karima Samadi, OSU South Centers Extension, Kirwan Institute for the Study of Race and Ethnicity
- Kip Holley, Kirwan Institute for the Study of Race and Ethnicity
- Shelley Denison, Kirwan Institute for the Study of Race and Ethnicity
- Ingrid Adams, Medical Dietetics and Ohio State University Extension

Our Team has adapted HEAL MAPPs. A successful CBPR approach to assessing rural food environments to evaluate healthy food access in a variety of food environments (rural, suburban, urban). We have partnered with I AM MBK to map family-level barriers in their communities. A task force will be created who will work with researchers for five months to come up with a community plan to address the barriers identified in the mapping exercises. As we expand our reach, we will be able to define nuanced differences of how food insecurity is experienced for households exhibiting varying levels of food insecurity and living in differing contexts.