



The Center for Environmental Farming Systems Announces Recipients of 2018-2019 NC State Graduate Student Fellowships

June 28, 2018: FOR IMMEDIATE RELEASE

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Raleigh, NC: The Center for Environmental Farming Systems has announced the 2018-2019 recipients of its NC State Graduate Student Fellowships. The CEFS NC State University Graduate Fellows Program was developed to provide financial support and recognition for the future leaders, researchers and contributors to sustainable agriculture and local food systems while they pursue academic research to further the field of study.

The Fellowship offers a one-year, \$5,000 stipend for Master's students and a two-year, \$5,000-per-year stipend for Doctoral students. For the second year, Compass Group USA sponsored a Graduate Fellowship specifically for MBA students who are interested in learning about local food supply chains and the sustainability of the food system.

"CEFS and Compass Group have enjoyed a dynamic partnership for more than a decade. We are proud to play a role in engaging the best, brightest and most well prepared graduates for a complex business environment," said Cheryl Queen, Vice President of Communication and Corporate Affairs for Compass Group and former chair of CEFS Board of Advisors.

"The CEFS Graduate Fellows Program at NC State University was established to identify and support future leaders in sustainable agriculture," said CEFS Interim Director from NC State University Dr. Chris Reberg-Horton. "This year's cohort continues to demonstrate the high quality of scholarship and research that we have come to expect in this program and we look forward to seeing their career paths unfold."

The CEFS NC State Graduate Fellowship Program was made possible by an endowment from the W.K. Kellogg Foundation and Blue Cross and Blue Shield of North Carolina Foundation.

The 2018-2019 CEFS NC State University Graduate Fellows and their departments/research areas are:

Jordan Cox-O'Neill | Ph.D. Student | Animal Science – Ruminant Nutrition | NC State University

Jordan's research pertains to grazing stocker cattle on winter cover crops following corn grain harvest to provide economic and environmental benefits for crop farmers. This systems approach is targeted to best utilize available resources while maintaining overall sustainability. Animal performance, soil health, corn grain yield, and cover crop forage production will be monitored during the grazing and crop production process and an economic analysis will be performed. She hopes this project validates the importance and beneficial gain of diversifying farms through crop-livestock integration. Her diverse disciplinary project

attempts to analyze the whole system in an effort to provide valuable information to farmers and ranchers as they make important operation decisions.

Jinlong Han | Ph.D. Student | Plant Pathology | NC State University

Tomato spotted wilt orthotospovirus (TSWV) is transmitted by minute insects called thrips. Jinlong's research is focused on the interaction between TSWV and western flower thrips (*Frankliniella occidentalis*), which is one of the most widely distributed and efficient transmitters of TSWV worldwide and locally in North Carolina. The initial infection of thrips gut tissue by TSWV is prerequisite for successful virus transmission to plants. Jinlong will investigate the biological response of gut tissue before and after virus infection at gene level and to identify which molecules within thrips gut tissue will interact with viruses for initiating the infection process. The ultimate goal of this research is to integrate the latest findings in virus-insect interaction with all other practical controls for developing and optimizing the alternative, sustainable strategies.

Tim Kloppe Ph.D. Student | Plant Pathology | NC State University

Diversion from GAP guidelines caused a loss in fungicide efficacy and a breakdown of resistance in wheat production systems against the common fungal, powdery mildew disease in North Carolina and across the world. A very recent breakdown of a highly effective and durable resistance mechanism has led Tim to characterize the molecular-genetic relationship of wheat and the causal agent of the disease, *Blumeria graminis* f.sp. *tritici* (Bgt). He expends his research on the detection of the genes involved in this relationship by (1) collecting strains from Bgt-populations worldwide, (2) quantifying the potential of those strains to break plant resistance in machine-aided infection assays, (3) analyzing the DNA of those strains and (4) comparing those genetic signatures with the phenomenon of broken resistance. Better knowledge about the durability of resistance and the dynamics of Bgt-populations will ultimately streamline disease management practices.

Eliot Lee | MBA Candidate | Jenkins Graduate School of Management | NC State University

CEFS Compass Group USA Graduate Fellow

Eliot's studies are focused on understanding the current state of local, sustainable food value chains in the region to provide recommendations and possible solutions to developing more equitable and efficient processes. He will be supporting Compass Group efforts to drive compliance in product specification and sustainability initiatives. Prior to graduate school, he was an intern on the Small Farm Unit at CEFS' CEFS Field Research, Education, and Outreach Facility at Cherry Research Farm in Goldsboro.

Joseph Milone | Ph.D. Student | Entomology | NC State University

Honey bee colonies are challenged by a variety of stressors simultaneously, including chemical exposure from multiple pesticides. Joe's work takes a top-down approach to pollinator toxicology and utilizes pesticide residue data from commercial honey bee colonies to test field-relevant mixtures of chemicals and their effects on colony health. His current project seeks to better understand the impact of pesticides on queen reproductive health and the potential for interactions between pathogens and pesticides. Testing pesticide mixtures and their interactions with alternative stressors allows for a higher degree of realism

and helps build on existing research focusing on single pesticides and stressors. Both growers and beekeepers have a vested interest in gains resulting from healthy bees and improved crop pollination.

Matthew Smith | MS Student | Crop and Soil Sciences | NC State University

Matthew's research focuses on southeastern-adapted heirloom food corn varieties. He is selecting within individual heirloom populations to maintain the food quality and original genetic makeup of these varieties while improving agronomic traits for the modern grower. Matthew's work is directed towards providing new options for small growers to serve their local communities with the high quality heirloom products that local chefs and consumers want without the profitability concerns of unimproved heirlooms.

Andrew Smolski | Ph.D. Student | Sociology | NC State University

Andrew's research investigates the impact of social structure on the development of sustainable agri-food systems. This involves examining how access to resources, property rights, and decision-making affects the ability of participants in the local food movement to enact their goals. With this research, Andrew seeks to increase the urban capacity for socially just and sustainable agricultural production. In ongoing research, he and co-authors use historical and statistical data to analyze urban food distribution in Mexico City and New York City, publishing results that demonstrate the positive benefits of public infrastructure for more equitable outcomes. With his experience as a CEFS Graduate Fellow, Andrew's goal is to be both a researcher and participant in building a 21st Century agri-food system.

For more information about the CEFS NC State University Graduate Fellows Program, please visit the [CEFS website](#).

The Center for Environmental Farming Systems is a partnership of NC State University, NC Agricultural and Technical State University and the NC Department of Agriculture and Consumer Services. CEFS develops and promotes just and equitable food and farming systems that conserve natural resources, strengthen communities, improve health outcomes, and provide economic opportunities in North Carolina and beyond. For more information, visit www.cefs.ncsu.edu.