

UrbanFEWS in the News

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Student internship at Middlebrook Farm

Erin Huckins

Team member Erin Huckins (pursuing an M.S. in Sustainable Agriculture) had the opportunity to work one day a week on a small-scale organic farm during the summer of 2021.

Middlebrook Farm in Cummings, Iowa, is an ‘agrihood,’ with goals of bringing community and sustainability together through agriculture. During her work there, Erin was under the direction of Dan Fillius, their former farm manager. He truly “took her under his wing” and

taught her about seeding plants, using organic practices, irrigating crops, and marketing produce. A few of the



tasks she worked on each day included seeding vegetables, weeding, harvesting produce, washing and

packing produce for the farm stand, and setting up for monthly “Fridays at the Farm” events. One of her favorite tasks was harvesting produce and getting it ready for the farm stand. Consumers could place an order online for pick-up service, or they could stop by the stand and purchase fresh organic produce. Working at Middlebrook Farm allowed Erin to get hands-on experience with what she was learning about in her coursework and research.

Understanding urban plant phenology for sustainable cities and planet

Excerpted from a recent publication in *Nature Climate Change*, by Dr. Yuyu Zhou

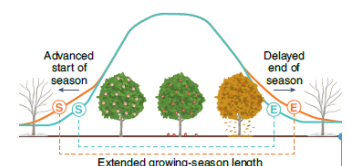
The complexity of urban environments provides difficult growing conditions for plants. Changes in air quality, light regimes, and water and nutrient availability can lead to large shifts in phenology which also affect global health and the economy.

Urbanization directly affects growing seasons, which can benefit urban agriculture due to extended cropping seasons. However,

accelerated growth due to extended growing seasons may also lead to shorter lifetimes of urban trees compared to trees in rural areas.

New kinds of spatial data and technology provide insights in the study of urban plant growth patterns (phenology). Indicators based on sun-induced chlorophyll fluorescence are better proxies of photosynthesis and can capture heterogeneous

information in complex urban environments compared to traditional “greenness” image data. Understanding the mechanisms underlying changes in urban plant growth can be used to develop more nature-based solutions



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Student team member successes



One goal of NSF funded research projects such as the Iowa UrbanFEWS project is to provide professional development opportunities for undergraduate and graduate students. We are proud to report the success of our students. Tiffanie Stone, Ph.D. Candidate in NREM has been awarded a prestigious Brown Fellowship. Her nominator was Dr. Tom Isenhart — Professor of Natural Resource Ecology and Management and Director of the Environmental Science Graduate Program.

In his nomination, Isenhart noted that Tiffanie: “Uses empirical data collection and modeling techniques to examine the characteristics of existing food systems and predict those of future systems with changes in production and consumption of local foods. Her research is a key part of a larger transdisciplinary effort (the “Iowa UrbanFEWS” project in the NSF “Innovations at the Nexus of Food, Energy and Water Systems” grant program) to investigate environmental and social impacts associated with changing land use, farming practices, and consumer behavior in the Des Moines, Iowa area.”

Wei Chen, Ph.D. Student in GEAT, received third place for outstanding poster presentation at the American Meteorological Society (AMS) Annual Conference. She

also won first place in the student honors paper competition at the American Association of Geographers (AAG) Annual Conference. In April, she received the John Lemish Graduate Research Award and the Graduate Student Seminar Runner-Up Award from the Department of Geological and Atmospheric Sciences at Iowa State University.

Sedigheh Ghiasi won first prize in the “Carbon Negative Idea Contest” Organized by the ISU Green Umbrella organization. Participants had 5 minutes to pitch their idea. Her idea was based on her M.S. in Architecture thesis, which examined photovoltaic rooftop panels to develop low carbon and resilient neighborhoods with a user-friendly interactive GIS-based map.

Featured Story: Supporting Black farmers in Iowa

The USDA is seeking to address historical inequities that resulted in few Black farmers receiving farm loans. The 2008 Farm Bill included an allocation of \$100 million toward fair and equal treatment for all farmers. In 2010, President Barack Obama approved another \$1.15 billion to “right the wrongs in USDA’s past.”

Black farmers made up only 0.05% of Iowa’s agricultural producers in 2017, according to the US Census of Agriculture. In the early 1900s, there were over 900,000 Black farmers, a number that has been dramatically dropping since, in part as farming became a more “cash-intensive business.” As farmer Mike Cook of Waterloo indicated, it is incredibly difficult to break into the business.

Enter farmer T. D. Holub, who started the Garden Oasis Farm

in 2013. He grows 40 types of vegetables and supplies 100 CSA (Community-Supported Agriculture) members. He also sells his produce to the New Pioneer Food Co-Op. The struggles Holub faced while applying for a farm loan were less about his race and more about his path to growing organic produce that supports CSA orders and supplying restaurants and grocery stores. Applications for USDA microloans are difficult for both people of color and farmers trying new sustainable growing methods.

In 2011, U.S. Secretary of Agriculture Tom Vilsack pledged up to \$4 billion to pay off federal loans for disadvantaged farm producers who are also people of color. In August, however, five farmers from Texas filed a lawsuit saying this loan forgiveness violated the constitutional rights of other

farmers who faced hardship in the pandemic. Since then, the loan repayments have been halted.

In 2018 and 2019, the Trump Administration’s aid program of \$23 million for farmers had only 3.6% of aid reaching historically underserved farms. In an effort to encourage a more diverse population of farmers, the USDA has now created a new trial to build a pipeline and provide outreach and support. To read the full story see the Cedar Rapids Gazette article from February 21, 2022.

