

New scholarly focus needed to help solve global food crisis, experts say

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The global food system is unsustainable and urgently needs an overhaul. Yet current approaches to finding solutions through applied academic research are too narrow and treat the food system as a collection of isolated components within established disciplines such as agronomy, sociology or nutritional science.

What's needed is a truly interdisciplinary approach that views all elements of the [food](#) system as part of a single, comprehensive framework, according to a group of 12 University of Michigan faculty members who issued a call to the global academic community July 23 in the journal *Frontiers in Sustainable Food Systems*.

The researchers, who are part of U-M's fledgling Sustainable Food Systems Initiative, urged colleagues worldwide to adopt a new scholarly focus for food-system studies, calling it an "urgently needed transformation."

"A global system that leaves millions food-insecure while contributing to obesity, that generates significant environmental degradation, and that compromises the well-being of consumers and producers alike challenges the research community to ask new research questions and apply novel analytical frameworks for analyzing them," the U-M researchers concluded.

"Such a paradigm would inform new, transdisciplinary, and high-impact research questions that will help re-route the food system toward a path

of environmental, social, and economic sustainability," they wrote.

The U-M's Sustainable Food Systems Initiative was formed through a cluster hire of young faculty members that was part of a \$30 million initiative announced in 2007 by former U-M President Mary Sue Coleman to recruit scholars whose work crosses disciplinary boundaries.

The sustainable food systems cluster hire added new faculty to the Department of Ecology and Evolutionary Biology, the School for Environment and Sustainability, the School of Public Health, and the Taubman College of Architecture and Urban Planning. The initiative is led by several senior U-M ecologists including John Vandermeer, who described the group's *Frontiers in Sustainable Food Systems* article as a manifesto of sorts.

"This group of faculty emerged from the cluster that the U-M gave us six years ago, which has really taken off and which now has a life of its own," Vandermeer said of the Sustainable Food System Initiative.

"Although each faculty member has her or his own research program, all of us are united in the realization that an interdisciplinary approach is needed to solve this urgent world problem.

"In addition to research and teaching, the Sustainable Food System Initiative acts as a sort of think tank to provide analysis about issues of food and agriculture. This article is an example of our outreach work."

In their *Frontiers* article, the researchers propose a new analytical framework for the study of the global food system that lies at the intersection of four topics: the ecology of agroecosystems, equity in global and local food systems, the cultural dimensions of food and agriculture, and human health. They summarize the importance of each of the four research foci:

Agricultural ecology is now considered a major component of the natural science of ecology, yet it's often given short shrift in the design of agricultural production systems, according to the authors. A broader focus on managing ecological interactions on farms would reduce the negative environmental consequences of agriculture.

Equity issues are essential to solving several food crises. Poor access to healthy, diverse, affordable food is the crux of food insecurity worldwide. One of the current system's "starkest contradictions" is the abundance of food while millions remain food-insecure: While the world produces enough edible calories to feed more than 9 billion people, 815 million people were chronically undernourished in 2016.

Human cultures. Globalization has generated a tendency toward diet homogenization based on the Western diet, often with adverse health consequences. The concomitant reduction in food diversity and in some cultures "points to a crisis of democracy evident in contemporary food systems," the U-M researchers wrote.

Human health. Across the globe, heart disease, stroke, diabetes, obesity and other diet-related diseases are top contributors to lost years of healthy life and are responsible for an enormous socioeconomic burden. "Linking global public health to the kind, quality and availability of food is an essential part of the new paradigm" for food-system research, they wrote.

More information: John Vandermeer et al, Feeding Prometheus: An Interdisciplinary Approach for Solving the Global Food Crisis, *Frontiers in Sustainable Food Systems* (2018). [DOI: 10.3389/fsufs.2018.00039](https://doi.org/10.3389/fsufs.2018.00039)

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