

# Transformative Food and Agriculture Manufacturing: Techno-Socio-Economic Perspective

*Innovations in agriculture and food for human health, equity, and competitiveness.*

June 16, 2021 - 10:30-12:00 (Eastern)

Series host & panel moderator: *Dr. Ajay Malshe, Mechanical Engineering, Purdue University*

A continuing discussion

**Webinar panel duration** - 90 minutes total: 30 minutes per speaker plus time for discussion.

**Webinar link** - Provided upon registration

**Registration link** (Registration is necessary and free) - [2021 Cellular Ag Registration](#)

## Cellular agriculture: The role of rheological properties of food

**Speaker:** *Dr. Ardekani, Mechanical Engineering, Purdue University*

**Abstract:** Foods are multicomponent soft materials, containing drops, bubbles, particles, cells and proteins. Polysaccharides and other food additives are used to manage calorie count, provide texture and modify rheology, i.e., perceived mouth-feel. The state-of-the-art process design for food uses shear rheological properties. Only recently, the use of extensional viscosity has been discussed in this context. In this talk, I will discuss both concepts as well as the complex interplay between electrostatic, macromolecular and hydrodynamic interactions affecting food mechanical properties.



**Bio:** Prof. Ardekani's research focuses on complex fluids, biofluids and rheology. Honored with the Presidential Early Career Award for Scientists and Engineers (PECASE) from president Obama, NSF CAREER Award, Metzner Early Career Award (Society of Rheology), Society of Engineering Science Young Investigator Medal, and Sigma Xi Mid-career Research Award, she is a Purdue University Faculty Scholar and fellow of American Society of Mechanical Engineers. She received her PhD from University of California Irvine, and was Shapiro Postdoctoral Fellow at MIT. Arezoo is an Associate Editor of ASME Applied Mechanics Review, and an Editorial Advisory Board Member of several other journals.

## Cellular agriculture: Convergent Roles of Food, Inequities, and Policies

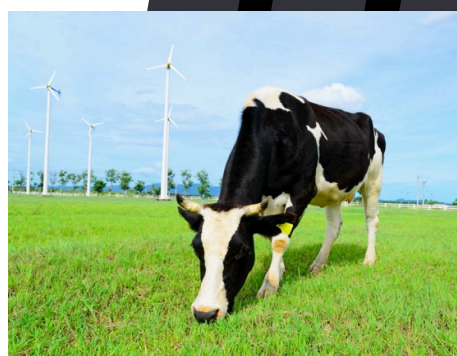
**Speaker:** *Dr. Connaughton, Purdue Policy Research Institute (PPRI)*

**Abstract:** The growing rates of food insecurity and its adverse impact on the most vulnerable populations worldwide and in the United States continues to be of concern to practitioners, policymakers, and academics. While the science and engineering of cellular agriculture has developed substantially, less focus has been given to the cultural, religious, social, and economic dimensions of cellular agriculture and its potential for addressing food insecurity. These are important considerations—having implications for whether consumers will actually eat the food that is created for them—and they point to systemic changes needed to make these solutions not only desirable, but effective. In this talk, I explore the ways in which social scientific and policy considerations can be part of the early conversations with scientists, engineers, and industry. In particular, I will focus on the United States as a site in which inequities of food affordability and accessibility continue to exist and why such complexities necessitate a multi-sectoral and multi-disciplinary approach to address them.



**Bio:** [Prof. Connaughton](#) is the Director of the [Purdue Policy Research Institute](#) and a Professor in the Brian Lamb School of Communication at Purdue University. Her research examines leadership and multi-stakeholder organizing, most recently in the context of political violence prevention. Prof. Connaughton directs the Purdue Peace Project and has led multi-stakeholder collaboration for locally led peacebuilding initiatives in West Africa. Her work has been supported by the National Science Foundation, Carnegie Corporation, Russell Sage Foundation, and individual donors.

**Seminar coordinators:** [Bill Bogan](#) & [Stephanie McKinley](#), Purdue University



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