



NATIONAL ACADEMY OF ENGINEERING

The National Academies of Sciences, Engineering, and Medicine

Forum on Complex Unifiable Systems

COMPLEX FOOD AND AGRICULTURAL SYSTEMS: ENGINEERING FOR SUSTAINABILITY AND RESILIENCE

A Virtual Forum Thursday,

September 9, 2021

Draft AGENDA (August 6, 2021)

11:00 am	Welcome Remarks	John Anderson , National Academy of Engineering
11:05 am	Introduction to the Forum	Guru Madhavan , National Academy of Engineering
11:10 am	Forum Objectives	James Jones , University of Florida
11:20 am	Block I: Characteristics, Accomplishments, and Challenges of Existing Systems Moderator: Charles Rice , Kansas State University	
	Provocation: Accomplishments, Challenges	George Poste , Arizona State University
	Perspective: Mechanization, Automation, Robotics	Jahmy Hindman , John Deere & Company
	Perspective: Environmental, Conservation	Melissa Ho , World Wildlife Federation
	Perspective: Biotechnology Advances	To be announced
	Perspective: Economics & Policy	Greg Characklis , University of North Carolina, Chapel Hill
12:00 pm	<i>Comments and Discussion</i> (20 mins)	
12:20 pm	Break	

12:30 pm	Block II: Transitioning to Circular Systems Moderator: R. Paul Singh , University of California, Davis (NAE member)	
	Provocation: Guiding Circular Economy Concepts	Louise Fresco , Wageningen Univ., Netherlands
	Perspective: Transform subsystems into nature-inspired components for circular economies	Bruno Basso , Michigan State University
	Perspective: Food System Value Chains	(**invited)
	Perspective: Potential Disruptive Technologies	Eric Schulze , UPSIDE Foods
	Perspective: Integrating Socioeconomic, Policy Aspects Across Scales	Tom Hertel , Purdue University
1:10 pm	<i>Comments and Discussion</i> (20 mins)	
1:30 pm	Break	
1:40 pm	Block III: Engineering for Sustainability and Resilience Moderator: Sue Nokes , University of Kentucky	
	Provocation: Engineering Sustainability and Resilience across the Food Chain	Peter Fryer , University of Birmingham
	Perspective: Supporting Convergence R&D	Mihail Roco , National Science Foundation
	Perspective: Modeling, Analytics, and Tradeoffs	Callie Babbitt , Rochester Institute of Technology
	Perspective: Public-Private Collaboration	Joe Cornelius , Bill and Melinda Gates Foundation
	Perspective: Education and Human Development	Richard Miller , Olin College and MIT
2:20 pm	<i>Comments and Discussion</i> (20 mins)	

2:40 pm	Recap and Reflections	Brahm Verma , University of Georgia
2:50 pm	Keynote Address, Complex Systems: A Landscape View (20 mins) Q&A (15 mins) Moderator: Guru Madhavan , National Academy of Engineering	Julio Ottino , Northwestern University
3:25 pm	Community Input and Synthesis	James Jones , University of Florida
4:00 pm	Adjourn	