

**THE ROLE OF ADVANCED COMPUTATION, PREDICTIVE TECHNOLOGIES, AND BIG DATA ANALYTICS
RELATED TO FOOD AND NUTRITION RESEARCH: A WORKSHOP**

AGENDA

October 10-11, 2023

National Academy of Sciences Building | 2101 Constitution Avenue NW, Washington, DC 20418

Virtual Webcast [[REGISTER](#)]

Workshop Goals:

- Explore opportunities and challenges related to the application of advanced computation, big data analytics, and high-performance computing to support advances in food systems and nutrition research.
- Discuss the appropriate use of evidence generated through advanced computation, big data analytics, and high-performance computing to inform food- and nutrition-related programs and policies.
- Consider ethical considerations associated with advanced computation, big data analytics, and high-performance computing and strategies to mitigate ethical concerns and avoid bias.
- Identify opportunities and challenges related to capacity building and training to support robust and ethical application of advanced computation, big data analytics, and high-performance computing in food and nutrition research.

DAY 1: TUESDAY, OCTOBER 10, 2023

Location: LECTURE ROOM

9:00 AM	Welcome Rodolphe Barrangou, North Carolina State University; Planning Committee Co-Chair
9:05 AM	Introductory Remarks Patrick Stover, Institute for Advancing Health through Agriculture at Texas A&M University Cindy Davis, U.S. Department of Agriculture, Agricultural Research Service Jennifer Tiller, Deputy Staff Director, U.S. House Committee on Agriculture Sharon Kirkpatrick, University of Waterloo; Planning Committee Co-Chair
9:45 AM	SESSION I: Setting the Stage Moderator: Rodolphe Barrangou Speakers: The Current State of Advanced Computation, Big Data Analytics, and High-Performance Computing <i>Anant Madabhushi, Emory University and Georgia Tech</i>

	<i>Ethics, Privacy, Bias, and Trust in the Application of AI</i> <i>Judy Gichoya, Emory University</i>
10:45 AM	BREAK
11:00 AM	SESSION I: Setting the Stage, CONTINUED AI in Nutrition and Food Sciences: Promises and Challenges <i>Benoît Lamarche, Université Laval</i> Moderated Discussion
12:00 PM	LUNCH BREAK
12:50 PM	SESSION 2: Applications and Lessons Learned, Part 1 Moderator: Sharon Kirkpatrick Speakers: Applications and Lessons Learned: Wearables <i>Edward Sazonov, University of Alabama</i> Applications and Lessons Learned: Microbiome <i>Rob Knight, University of California, San Diego (virtual)</i> Applications and Lessons Learned: Metabolomics <i>Susan McRitchie, University of North Carolina at Chapel Hill</i>
2:25 PM	BREAK
2:40 PM	SESSION 2: Applications and Lessons Learned, Part 1 CONTINUED Discussant: <i>Holly Nicastro, NIH Office of Nutrition Research</i> Moderated Discussion
3:20 PM	SESSION 3: Capacity Building Moderator: Carmen Tekwe, Indiana University in Bloomington; Planning Committee Member Speakers: NIH Supported Training Program in Artificial Intelligence and Precision Nutrition at Cornell: Plans and the Road Ahead <i>Saurabh Mehta, Cornell University (virtual)</i> Inclusive Teams for Food and Nutrition Research <i>Angela Odoms-Young, Cornell University</i> Moderated Discussion
5:00 PM	ADJOURN DAY 1

DAY 2: WEDNESDAY, OCTOBER 11, 2023

Location: ROOM 125

9:00 AM	<p>Key Themes from Day 1 and Issues that Warrant Further Discussion Diana Thomas, U.S. Military Academy at West Point; Planning Committee Member</p>
9:20 AM	<p>SESSION 4: Applications and Lessons Learned, Part 2 Moderator: Rodolphe Barrangou</p> <p>Speakers:</p> <p>Applications of AI in Food and Nutrition Research Benoît Lamarche, Université Laval</p> <p>Designing Nutrition Studies for AI Data Analysis Sai Das, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University</p> <p>Farmers Trust in AI Aaron Smith, University of California, Davis</p>
10:50 AM	BREAK
11:05 AM	<p>SESSION 4: Applications and Lessons Learned, Part 2 CONTINUED</p> <p>Application of AI: Supply Chains Christopher Mejia, MIT Center for Transportation and Logistics (virtual)</p> <p>Discussant: Elenna Dugundji, MIT Center for Transportation and Logistics Discussant: Becca Jablonski, Colorado State University; Planning Committee Member</p> <p>Moderated Discussion</p>
12:25 PM	LUNCH BREAK
1:10 PM	<p>SESSION 5: Potential Applications of AI to Large-Scale Food and Nutrition Initiatives Moderator: Diana Thomas</p> <p>Speakers:</p> <p>Bridge to AI, Nutrition for Precision Health Chris Hartshorn, NIH National Center for Advancing Translational Sciences (virtual)</p> <p>Considerations for Ethics and Diverse Populations Janie Hipp, Native Agriculture Financial Services (virtual)</p> <p>Moderated Discussion</p>

2:15 PM	<p>SESSION 6: Final Discussion and Synthesis Moderator: Sharon Kirkpatrick</p> <p>Panel Discussion <i>Rodolphe Barrangou (Planning Committee Member)</i> <i>Sai Das, Christopher Mejía (virtual), Angela Odoms-Young (Workshop Speakers)</i></p>
3:00 PM	WORKSHOP ADJOURNS

This event was planned by the following experts: Rodolphe Barrangou, North Carolina State University (Planning Committee Co-Chair); Sharon Kirkpatrick, University of Waterloo (Planning Committee Co-Chair); Becca Jablonski, Colorado State University; Anant Madabhushi, Emory University; Carmen Tekwe, Indiana University; and Diana Thomas, United States Military Academy at West Point.

The planning committee's role is limited to organizing the event. A proceeding based on the event will be prepared by an independent rapporteur.