

SYMPOSIUM ON EXTRAORDINARY ENGINEERING IMPACTS ON SOCIETY  
AUGUST 18-19, 2022

Agenda – Thursday, August 18

10:00 am **Symposium greeting**  
EDT *Dan Arvizu, PhD* – planning committee chair

10:05 am **Welcoming remarks**  
*John Anderson, PhD*  
President, National Academy of Engineering

10:15 am **Overview of the symposium structure and logistics**  
*Dan Arvizu, PhD* – planning committee chair

**SESSION I: NSF AND ITS ROLE IN FOSTERING  
EXTRAORDINARY ENGINEERING IMPACTS ON SOCIETY**

10:25 am **Introduction of session speakers**  
*Jeffrey Yost, PhD* – session moderator and planning committee member

10:30 am **The New Applied Innovation Policy Challenges Facing NSF**  
*William Boone Bonvillian, MAR, JD*  
Lecturer, Massachusetts Institute of Technology, Departments of Science,  
Technology, and Society and Political Science; Senior Director, Special Projects,  
MIT Office of Digital Learning.

10:50 am **The Influence of NSF Engineering Funding on Society**  
*Thomas Woodson, PhD*  
Associate Professor and Graduate Program Director, Stony Brook University,  
Department of Technology and Society

11:10 am **Moderated roundtable discussion – session speakers**

11:55 am **Break**

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**SESSION II: PEOPLE WHO BROUGHT ABOUT  
EXTRAORDINARY ENGINEERING IMPACTS ON SOCIETY**

12:25 pm **Introduction to the session**

EDT *Ed Frank, PhD* – session moderator and planning committee member

12:30 pm **Leadoff presentation**

*Pramod Khargonekar, PhD*

Vice Chancellor for Research and Distinguished Professor of Electrical Engineering  
and Computer Science, University of California, Irvine

1:00–3:20 pm **Session speakers**

*Maia Weinstock, BA [speaking on Mildred Dresselhaus, PhD]*

author and Deputy Editorial Director, *MIT News*, Massachusetts Institute of  
Technology

*Albert Pisano, PhD*

Dean, Jacobs School of Engineering, University of California, San Diego

*Gilda Barabino, PhD*

President and Professor of Biomedical and Chemical Engineering, Olin College of  
Engineering

*Baratunde Cola, PhD*

Professor, George W. Woodruff School of Mechanical Engineering, Georgia Tech

*Susan Estrada, BS*

Founder, CERFnet [retired]

*Paula Hammond, PhD*

Institute Professor and Department Head of Chemical Engineering, Koch Institute of  
Integrative Cancer Research, Massachusetts Institute of Technology

3:20 pm **Break**

3:35 pm **Moderated roundtable discussion – session speakers and discussant**  
discussant

*Sarah Rajala, PhD*

Professor Emeritus [E CPE]; James L. and Katherine S. Melsa Dean of Engineering,  
Iowa State University

4:35 pm **Session wrap-up and preview of Day 2**

*Dan Arvizu, PhD* – planning committee chair

4:45 pm **Session adjourns**

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Agenda – Friday, August 19

- 10:00 am **Day 2 greeting; overview of the symposium structure and logistics**  
EDT *Dan Arvizu, PhD* – planning committee chair
- 10:10 am **Keynote – Engineering’s Role in Creating Extraordinary Impacts on Society**  
*Kristina Johnson, PhD*  
President, The Ohio State University
- 10:30 am **Keynote – Engineering Education, The Key to Creating the Next Generation of Extraordinary Impacts**  
*Gary May, PhD*  
Chancellor, University of California, Davis

**SESSION III: NSF CENTERS THAT CATALYZED  
EXTRAORDINARY ENGINEERING IMPACTS ON SOCIETY**

- 10:50 am **Introduction to the session**  
*Theresa Maldonado, PhD, PE* – session moderator and planning committee member
- 11:00 am **Leadoff presentation**  
*Kon-Well Wang, PhD*  
Stephen P. Timoshenko Collegiate Professor of Mechanical Engineering, University of Michigan
- 11:25 am–  
1:40 pm **Session speakers**  
*Mark Humayun, MD, PhD*  
University Professor of Ophthalmology; Cornelius J. Pings Chair in Biomedical Sciences; Director, Institute for Biomedical Therapeutics; Co-Director USC Roski Eye Institute; and Director of Sensory Science Initiatives, Keck School of Medicine, University of Southern California
- Karen Lozano, PhD, FNAI*  
Julia Beecherl Endowed Professor of Mechanical Engineering, and Founder and Director of the Nanotechnology Center, The University of Texas Rio Grande Valley
- Gregory Deierlein, PhD*  
John A. Blume Professor in the School of Engineering, Department of Civil and Environmental Engineering, Stanford University
- Michael Silevitch, PhD*  
Robert D. Black Professor and COE Distinguished Professor, Department of Electrical and Computer Engineering, Northeastern University

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*Veena Misra, PhD*

Distinguished Professor, Department of Electrical and Computer Engineering; and  
Director, Nanosystems Engineering Research Center on Advanced Self-Powered  
of Integrated Sensors and Technologies, North Carolina State University

*S. Shankar Sastry, PhD [accompanied by Larry Rohrbough, MS]*

Director, Richard C. Blum Center for Developing Economies; Professor of Electrical  
Engineering and Computer Science, Professor of Bioengineering, and Thomas M.  
Siebel Professor, University of California, Berkeley

1:40 pm **Moderated roundtable discussion – session speakers**

2:25 pm **Break**

**SESSION IV: NSF PROCESSES THAT FOSTERED  
EXTRAORDINARY ENGINEERING IMPACTS ON SOCIETY**

2:40 pm **Introduction to the session**

*Louis Martin-Vega, PhD* – session moderator and planning committee member

2:50 pm **Leadoff presentation**

*Andre Marshall, PhD*

Vice President for Research, Innovation and Economic Development and President  
of the George Mason University Research Foundation

3:15–5:30 pm **Session speakers**

*Rory A. Cooper, PhD*

Assistant Vice Chancellor, Distinguished Professor, and FISA Foundation and  
Paralyzed Veterans of America Professor of Rehabilitation Engineering,  
Department of Rehabilitation Science and Technology; Founding Director and  
VA Senior Research Career Scientist, Human Engineering Research Laboratories;  
University of Pittsburgh and US Department of Veterans Affairs

*Harriet Nembhard, PhD*

Dean, College of Engineering; Roy J. Carver Professor of Engineering; and Professor  
of Industrial Engineering; The University of Iowa

*Cindy Atman, PhD*

Director and Lella Blanche Bowie Endowed Chair, Center for Engineering Learning  
& Teaching, and Professor, Human Centered Design & Engineering, University of  
Washington

*Sarah EchoHawk, MNM*

Chief Executive Officer, American Indian Science and Engineering Society

*Alice Agogino, PhD*

Chief Executive Officer and Co-Founder, Squishy Robotics; Roscoe and Elizabeth  
Hughes Professor of Mechanical Engineering, Emeritus and affiliated faculty with  
the Energy Resources Group, Women and Gender Studies, Development

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Engineering, and Studies in Science, Engineering and Mathematics Education;  
University of California, Berkeley

*Arlyne Simon, PhD*

Solutions Architect, Health, Education, and Consumer Industries group, Intel;  
Founder, Abby Invents, LLC

**5:30 pm    Moderated roundtable discussion – session speakers and discussants**  
discussants

*Mona Minkara, PhD*

Assistant Professor, Department of Bioengineering; Affiliated Faculty, Department  
of Chemistry and Chemical Biology; and Principal Investigator, COMBINE  
(Computational Modeling for BioInterface Engineering) Lab; Northeastern  
University College of Engineering

*Sheri Sheppard, PhD, PE*

Richard W. Weiland Professor in the School of Engineering, Emeritus, Stanford  
University

**6:15 pm    Symposium closing remarks and thanks**

*Dan Arvizu, PhD* – planning committee chair

**6:25 pm    Symposium concludes**