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9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES) U.S. Army Research Office P.O. Box 12211 Research Triangle Park, NC 27709-2211			10. SPONSOR/MONITOR'S ACRONYM(S) ARO		
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14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Martin Dunn
UU	UU	UU	UU		19b. TELEPHONE NUMBER 303-315-7174

# RPPR Final Report

## as of 27-Dec-2022

Agency Code: 21XD

Proposal Number: 79932TECF

Agreement Number: W911NF-22-1-0007

### INVESTIGATOR(S):

**Name:** Martin Dunn  
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**Principal:** Y

Organization: **Gordon Research Conferences, Inc.**

Address: 512 Liberty Lane, West Kingston, RI 028921502

Country: USA

DUNS Number: 075712877

EIN: 050300482

**Report Date:** 31-Mar-2023

Date Received: 27-Dec-2022

**Final Report** for Period Beginning 01-Mar-2022 and Ending 31-Dec-2022

**Title:** 2022 Multifunctional Materials & Structure Gordon Research Conference

**Begin Performance Period:** 01-Mar-2022

**End Performance Period:** 31-Dec-2022

**Report Term:** 0-Other

Submitted By: Ph.D. Nancy Gray

Email: grants@grc.org

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**Distribution Statement:** 1-Approved for public release; distribution is unlimited.

**STEM Degrees:** 0

**STEM Participants:**

**Major Goals:** Organizing a Gordon Research Conference involves extensive communication with the research community to identify important issues at the frontiers of the field, and solicit suggestions for speakers and discussion leaders to participate in the conference. The Chair then contacts prospective participants to invite them to talk and discuss the nature of their contributions. The Chair then communicates the topics and aims of the conference through web pages, contact with relevant international professional bodies and email to members of the research community around the world to encourage applications for participation in the conference. The Chair is then responsible for assessing and accepting the applications and fielding a host of questions both concerning the technical content and practical aspects of conference participation.

**Accomplishments:** The Gordon Research Conference on Multifunctional Materials and Structures brought together researchers from diverse scientific disciplines to share and exploit a new understanding of how to impart intelligent system level response through self-learning materials and structures. This interdisciplinary pursuit relies upon researchers at the forefront of material science, physics, chemistry, biology, mathematics, computational science, mechanics, engineering science, and device engineering to share current technical breakthroughs, generate new interdisciplinary concepts, and build this innovative community. In the past, this research community has successfully developed several visionary concepts to create a new breed of multifunctional and bio-inspired materials and structures. These included "autonomic", "adaptive", "self-sustaining", and "neuromorphic" systems and structures. The overall goal of these approaches has been to deliver an intelligent system level response. As with human development, intelligent response in diverse situations is achieved through progressive learning from the observe-orient-decide-act (OODA) process loop. This conference discussed breakthroughs in "self-learning" materials and structures with embedded sensing, decision making, and response from integrated chemical, biological, mechanical, and electromagnetic processes for intelligent discovery, manufacturing, bio-inspired structures, engineered living systems, aerospace structures, smart textiles, soft robotics, and upcycling.

**Training Opportunities:** Speakers, discussion leaders, poster presenters and attendees simultaneously contributed to and benefited from the collective skills and experience shared throughout the conference.

**Results Dissemination:** The final program has been posted on the GRC website.

**Honors and Awards:** Nothing to Report

**Protocol Activity Status:**

**RPPR Final Report**  
as of 27-Dec-2022

**Technology Transfer:** Nothing to Report

**Partners**

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I certify that the information in the report is complete and accurate:

Signature: Darlene Armstrong

Signature Date: 12/27/22 12:07PM



**GORDON RESEARCH CONFERENCES  
FINAL REPORT**  
Army Research Office  
Multifunctional Materials and Structures GRC  
Grant Number W911NF-22-10007

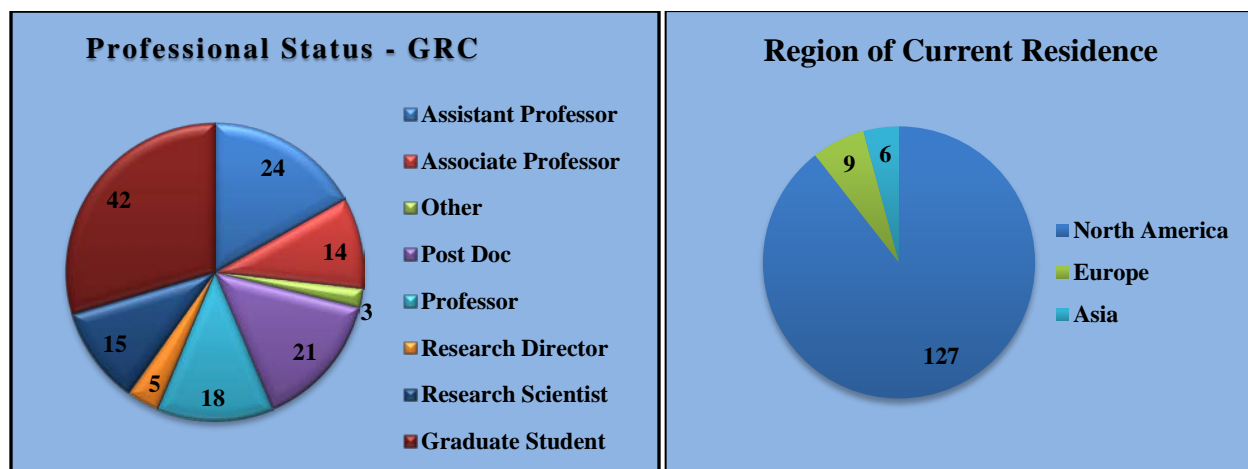
**Operational Summary**

The Gordon Research Conference (GRC) on Multifunctional Materials and Structures was held at the Ventura Beach Marriott in Ventura, California from September 25-30, 2022. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.



**Conference Participants**

The Conference was well-attended with 142 participants. Scientists from academia represented 85% of the participants while attendees from government accounted for 14% and those from industry totaled 1%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 45% of all attendees. Approximately 21% of the participants at the 2022 meeting were women.



**Conference Program**

The Gordon Research Conference on Multifunctional Materials and Structures brought together researchers from diverse scientific disciplines to share and exploit a new understanding of how to impart intelligent system level response through self-learning materials and structures. This interdisciplinary pursuit relies upon researchers at the forefront of material science, physics, chemistry, biology, mathematics, computational science, mechanics, engineering science, and device engineering to share current technical breakthroughs, generate new interdisciplinary concepts, and build this innovative community. In the past, this research community has successfully developed several visionary concepts to create a new breed of multifunctional and bio-inspired materials and structures. These included "autonomic", "adaptive", "self-sustaining", and "neuromorphic" systems and structures. The overall goal of these approaches has been to deliver an intelligent system level response. As with human development, intelligent response in diverse situations is achieved through progressive learning from the observe-orient-decide-act (OODA) process loop. This conference discussed breakthroughs in "self-learning" materials and structures with embedded sensing, decision making, and response from integrated chemical, biological, mechanical, and electromagnetic processes for intelligent discovery, manufacturing, bio-inspired structures, engineered living systems, aerospace structures, smart textiles, soft robotics, and upcycling.

**Conference Budget**

Funding provided by the Army Research Office supported partial registration for 17 professors, 2 assistant professors, and 3 associate professors at the GRC.

**Conference Feedback**

Participants had an opportunity to provide feedback at the end of the Conference. The feedback collected from the meeting was extremely positive. Evaluations from the GRC included numerous positive remarks regarding the opportunities for networking, scientific content and poster sessions.

GRC would like to thank the Army Research Office for its continued support of the meetings. The contributions received have been critical to the success of the conferences and are having a measurable impact in advancing the frontiers of science worldwide.

Dr. Jeffrey Baur, GRC Chair  
University of Illinois

Dr. Martin Dunn, GRC Chair  
University of Colorado Denver

Dr. Nancy Ryan Gray  
President and Chief Executive Officer  
Gordon Research Conferences

## Multifunctional Materials and Structures

Gordon Research Conference

### Imparting Intelligence in and Through Self-Learning Materials and Structures

September 25 - 30, 2022

**Chairs** Jeffery W. Baur and Martin L. Dunn

**Vice Chairs** Chiara Daraio and Ioannis Chasiotis

#### Ventura Beach Marriott

2055 Harbor Boulevard

Ventura, CA, United States

#### Conference Program

##### Sunday

2:00 pm - 9:00 pm      Arrival and Check-in

6:00 pm - 7:00 pm      Dinner

7:30 pm - 7:40 pm      Introductory Comments by GRC Site Staff / Welcome from the GRC Chair

7:40 pm - 9:30 pm      **Self-Learning Soft Robotics**  
Discussion Leader: **Robert Shepherd** (Cornell University, United States)

7:40 pm - 7:50 pm      Introduction by Discussion Leader

7:50 pm - 8:25 pm      **Pablo Valdivia y Alvarado** (Singapore University of Technology and Design, Singapore)  
"Bespoke Adaptive Soft Robots"

8:25 pm - 8:40 pm      Discussion

8:40 pm - 9:15 pm      **Renee Zhao** (Stanford University, United States)  
"Wireless Amphibious Origami Millirobot"

9:15 pm - 9:30 pm      Discussion

##### Monday

7:30 am - 8:30 am      Breakfast

9:00 am - 12:30 pm      **Intelligent Biological and Bio-Inspired Concepts**  
Discussion Leader: **Nancy Sottos** (University of Illinois at Urbana-Champaign, United States)

9:00 am - 9:10 am      Introduction by Discussion Leader

9:10 am - 9:45 am      **L. Mahadevan** (Harvard University, United States)  
"Morphable Matter: From Origami to Collective Robotics"

9:45 am - 10:00 am      Discussion

10:00 am - 10:35 am      Coffee Break

10:35 am - 11:10 am      **Christina Harvey** (University of California, Davis, United States)

"Model-Based Bio-Informed Analyses to Advance UAV Design"

11:10 am - 11:25 am Discussion

11:25 am - 12:00 pm **Shu Yang** (University of Pennsylvania, United States)  
"Bioinspired Programming of Mechano-Intelligence in Liquid Crystalline Elastomer Composites"

12:00 pm - 12:15 pm Discussion

12:15 pm - 12:30 pm Poster Previews

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

3:00 pm - 4:00 pm **The GRC Power Hour™**  
*The GRC Power Hour™ is designed to address diversity and inclusion in the scientific workplace by providing a safe environment for informal and meaningful conversations amongst colleagues of all career stages. The program supports the professional growth of all members of our communities, including ethnicity, race and/or gender identity by providing an open forum for discussion and mentoring.*  
Organizers: **Chiara Daraio** (California Institute of Technology, United States) and **Nancy Sottos** (University of Illinois at Urbana-Champaign, United States)

4:00 pm - 6:00 pm **Poster Session**

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm **Intelligent Chemistry Through Self-Discovery**  
Discussion Leader: **Vishnu Sundaresan** (Defense Sciences Office (DSO), United States)

7:30 pm - 7:40 pm Introduction by Discussion Leader

7:40 pm - 8:15 pm **Lee Cronin** (University of Glasgow, United Kingdom)  
"Autonomous Intelligent Exploration, Discovery, and Optimisation of Chemical and Material Space"

8:15 pm - 8:30 pm Discussion

8:30 pm - 9:05 pm **Rebecca Schulman** (Johns Hopkins University, United States)  
"Orchestrating Autonomous Morphogenesis and Metamorphosis with Chemistry"

9:05 pm - 9:20 pm Discussion

9:20 pm - 9:30 pm General Discussion

**Tuesday**

7:30 am - 8:30 am Breakfast

8:30 am - 9:00 am	Group Photo
9:00 am - 12:30 pm	<b>Self-Learning in Intelligent Manufacturing</b> Discussion Leader: <b>William Carter</b> (Defense Sciences Office (DSO), United States)
9:00 am - 9:10 am	Introduction by Discussion Leader
9:10 am - 9:45 am	<b>Christopher Spadaccini</b> (Lawrence Livermore National Laboratory, United States) "Towards Sentient Manufacturing"
9:45 am - 10:00 am	Discussion
10:00 am - 10:35 am	Coffee Break
10:35 am - 11:10 am	<b>Pablo Zavattieri</b> (Purdue University, United States) "Multi-Scale Mechanics and Materials by Design"
11:10 am - 11:25 am	Discussion
11:25 am - 12:00 pm	<b>Sam Tawfick</b> (University of Illinois at Urbana-Champaign, United States) "Algorithms and Molecules for Intelligent Manufacturing"
12:00 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	Poster Previews
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Intelligent Materials for Up-cycling</b> Discussion Leader: <b>Siddiq Qidwai</b> (National Science Foundation, United States)
7:30 pm - 7:40 pm	Introduction by Discussion Leader
7:40 pm - 8:15 pm	<b>Brett Helms</b> (Lawrence Berkeley National Laboratory, United States) "Bio-Renewable Circular Plastics"
8:15 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	<b>Christopher Bowman</b> (University of Colorado Boulder, United States) "Polymers and Light: Towards Advanced, Photoresponsive Materials"
9:05 pm - 9:20 pm	Discussion
9:20 pm - 9:30 pm	General Discussion

**Wednesday**

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Intelligent Aerospace Structures</b> Discussion Leaders: <b>Benjamin Dickinson</b> (Air Force Research Laboratory, United States)
9:00 am - 9:10 am	Introduction by Discussion Leader
9:10 am - 9:45 am	<b>Paolo Ermanni</b> (ETH Zurich, Switzerland) "Towards Application of Morphing Structures in Large Transport Aircraft"
9:45 am - 10:00 am	Discussion
10:00 am - 10:35 am	Coffee Break
10:35 am - 11:10 am	<b>Darren Hartl</b> (Texas A&M University, United States) "New Analysis and Design Schemes Enabling the Next Generation of Multifunctional Aerospace Structures"
11:10 am - 11:25 am	Discussion
11:25 am - 12:00 pm	<b>Sung Kang</b> (Johns Hopkins University, United States) "Self-Adaptive Materials and Structures for Aerospace Applications"
12:00 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	Poster Previews
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<b>Poster Session</b>
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Embedded Sensing for Intelligent Response</b> Discussion Leader: <b>Daniel Inman</b> (University of Michigan, United States)
7:30 pm - 7:40 pm	Introduction by Discussion Leader
7:40 pm - 8:15 pm	<b>Erik Thostenson</b> (University of Delaware, United States) "Scalable Manufacturing of Multifunctional In Situ Sensors"
8:15 pm - 8:30 pm	Discussion
8:30 pm - 9:05 pm	<b>Gregory Carman</b> (University of California, Los Angeles, United States) "Nanoscale Magnetoelasticity, An Overlooked Opportunity for the Smart Material Community"
9:05 pm - 9:20 pm	Discussion

9:20 pm - 9:30 pm General Discussion

**Thursday**

7:30 am - 8:30 am Breakfast

8:30 am - 9:00 am **Business Meeting**  
*Nominations for the Next Vice Chair(s); Complete the GRC Evaluation Forms; Discuss Future Dates and Venue; Election of the Next Vice Chair(s)*

9:00 am - 12:30 pm **Engineering Living Systems**  
Discussion Leaders: **Taylor Ware** (Texas A&M University, United States)

9:00 am - 9:10 am Introduction by Discussion Leader

9:10 am - 9:45 am **Neel Joshi** (Northeastern University, United States)  
"Biologically Fabricated Materials from Engineered Microbes"

9:45 am - 10:00 am Discussion

10:00 am - 10:35 am Coffee Break

10:35 am - 11:10 am **Ryan Harne** (Pennsylvania State University, United States)  
"Scalable Programming of Soft Mechanical Materials that Sense, Think, and React"

11:10 am - 11:25 am Discussion

11:25 am - 12:00 pm **Sankaran Thayumanavan** (University of Massachusetts Amherst, United States)  
"Responsive Materials at Bio-Abio Interface"

12:00 pm - 12:15 pm Discussion

12:15 pm - 12:25 pm Short Talk Selected from Poster Abstracts

12:25 pm - 12:30 pm Discussion

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm **Poster Session**

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm **Smart Textiles**  
Discussion Leader: **Chiara Daraio** (California Institute of Technology, United States)

7:30 pm - 7:40 pm Introduction by Discussion Leader

7:40 pm - 8:15 pm **Yoel Fink** (MIT, United States)  
"Towards Computing Fibers and Fabrics"

8:15 pm - 8:30 pm Discussion

8:30 pm - 9:05 pm **Thomas Gries** (RWTH Aachen University, Germany)  
"4D-Textiles"

9:05 pm - 9:20 pm Discussion

9:20 pm - 9:30 pm Closing Remarks

#### Friday

7:30 am - 8:30 am Breakfast

9:00 am Departure

#### Contributors



**Gordon Research  
Conferences**  
*Frontiers of Science*



**ACS  
MATERIALS LETTERS**

*Bio***MACROMOLECULES**

**Macromolecules**

This material is based upon work supported by the Air Force Office of Scientific Research under award number FA9550-22-0079. Any opinions, finding, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the United States Air Force.

## Attendee List

The list of attendees appears below, sorted by the role recorded in their registration record.

Name	Affiliation	Participation	Gender
Baur, Jeffery W	University of Illinois	Chair	Male
Dunn, Martin L	University of Colorado Denver	Chair	Male
Chasiotis, Ioannis	University of Illinois at Urbana-Champaign	Vice Chair	Male
Daraio, Chiara	California Institute of Technology	Vice Chair	Female
Amini, Shahrouz	Max Planck Institute of Colloids and Interfaces	Speaker	Male
Bowman, Christopher N	University of Colorado Boulder	Speaker	Male
Carman, Gregory	University of California, Los Angeles	Speaker	Male
Cronin, Lee	University of Glasgow	Speaker	Male
Ermanni, Paolo	ETH Zurich	Speaker	Male
Fink, Yoel	MIT	Speaker	Male
Gries, Thomas G.	RWTH Aachen University	Speaker	Male
Harne, Ryan	Pennsylvania State University	Speaker	Male
Hartl, Darren J	Texas A&M University	Speaker	Male
Helms, Brett A	Lawrence Berkeley National Laboratory	Speaker	Male
Joshi, Neel	Northeastern University	Speaker	Male
Kang, Sung H	Johns Hopkins University	Speaker	Male
Mahadevan, L.	Harvard University	Speaker	Male
Schulman, Rebecca B	Johns Hopkins University	Speaker	Female
Spadaccini, Christopher M	Lawrence Livermore National Laboratory	Speaker	Male
Tawfick, Sam	University of Illinois at Urbana-Champaign	Speaker	Male
Thayumanavan, Sankaran	University of Massachusetts Amherst	Speaker	Male
Thostenson, Erik T	University of Delaware	Speaker	Male
Valdivia y Alvarado, Pablo	Singapore University of Technology and Design	Speaker	Male
Yang, Shu	University of Pennsylvania	Speaker	Female
Zavattieri, Pablo D	Purdue University	Speaker	Male
Zhao, Renee	Stanford University	Speaker	Female
Carter, William	Defense Sciences Office (DSO)	Discussion Leader	Male
Dickinson, Benjamin	Air Force Research Laboratory	Discussion Leader	Male
Inman, Daniel J	University of Michigan	Discussion Leader	Male
Qidwai, Siddiq M	National Science Foundation	Discussion Leader	Male
Shepherd, Robert F	Cornell University	Discussion Leader	Male
Sottos, Nancy R	University of Illinois at Urbana-Champaign	Discussion Leader	Female
Ware, Taylor H	Texas A&M University	Discussion Leader	Male
Abdullah, Arif M	University of Colorado Denver	Poster Presenter	Male
Agarwal, Shivam	University of California, Los Angeles	Poster Presenter	No Answer
al-Mosleh, Salem	Harvard University	Poster Presenter	Male
Arora, Nitesh	University of Wisconsin-Madison	Poster Presenter	Male

Name	Affiliation	Participation	Gender
Arrieta, Andres F	Purdue University	Poster Presenter	Male
Boddeti, Narasimha	Washington State University	Poster Presenter	Male
Burnside, Emily	University of California, Los Angeles	Poster Presenter	Female
Cao, Changyong	Case Western Reserve University	Poster Presenter	Male
Carlstedt, David S	Stanford University	Poster Presenter	Male
Chang, Kelly M	University of Illinois at Urbana-Champaign	Poster Presenter	Female
Chen, Zi	Brigham and Women's Hospital, Harvard Medical School	Poster Presenter	Male
Chen, Tian	University of Houston	Poster Presenter	Male
Chou, Evan	Case Western Reserve University	Poster Presenter	Male
Colford, Greta	University of Michigan	Poster Presenter	Female
Cooper, Julian C	University of Illinois at Urbana-Champaign	Poster Presenter	Male
Dailing, Eric	Lawrence Berkeley National Laboratory	Poster Presenter	Male
Dan, Saikat	Johns Hopkins University	Poster Presenter	Male
Dasika, Phani Saketh	Purdue University	Poster Presenter	Male
Emre, Ahmet E	University of Michigan-Ann Arbor	Poster Presenter	Male
Esser-Kahn, Aaron P	University of Chicago	Poster Presenter	Male
Gopal, Neha	University of Delhi	Poster Presenter	Female
Gorodetsky, Alon	University of California, Irvine	Poster Presenter	Male
Greenlee, Andrew J	University of Illinois Champaign-Urbana	Poster Presenter	Male
Groo, LoriAnne	Air Force Research Laboratory	Poster Presenter	Female
Hanson, Lucas	University of Pennsylvania	Poster Presenter	Male
Hao, Taige	University of California, Irvine	Poster Presenter	Male
Harvey, Christina	University of California, Davis	Poster Presenter	Female
Haughn, Kevin P.T.	University of Michigan, Ann Arbor	Poster Presenter	Male
Hebner, Tayler S	University of Colorado Boulder	Poster Presenter	Female
Hendrickx-Rodriguez, Sebastian	Stanford University	Poster Presenter	Male
Hmeidat, Nadim S.	University of Illinois at Urbana-Champaign, United States	Poster Presenter	Male
Huang, Guoliang	University of Missouri	Poster Presenter	Male
Jin, Lihua	University of California, Los Angeles	Poster Presenter	Female
Johansen, Marcus	Chalmers University of Technology	Poster Presenter	Male
Kadar, Alain	University of Michigan	Poster Presenter	Male
Keller, Michael W	The University of Tulsa	Poster Presenter	Male
Kellersztein, Israel	California Institute of Technology	Poster Presenter	Male
KIM, MISO	Sungkyunkwan University (SKKU)	Poster Presenter	Female
Kim, Myung Chul	Korea Advanced Institute of Science and Technology	Poster Presenter	Male
Kisailus, David J.	University of California, Irvine	Poster Presenter	Male
Kong, Yong Lin	University of Utah	Poster Presenter	Male
Krikorian (Cook), Caitlyn	Lawrence Livermore National Laboratory	Poster Presenter	Female

Name	Affiliation	Participation	Gender
Lee, Rebecca	National Institute of Standard and Technology	Poster Presenter	Female
Lee, Jung-Eun	University of California, Irvine	Poster Presenter	Female
Li, Shucong	MIT	Poster Presenter	Female
Lu, Jun	university of michigan	Poster Presenter	Male
MacCurdy, Robert	CU Boulder	Poster Presenter	Male
Magrini, Tommaso	California Institute of Technology, Caltech	Poster Presenter	Male
Maraj, Joshua J	University of Tennessee	Poster Presenter	Male
McIntosh, Matthew	UCLA	Poster Presenter	Male
Miller, Rachel	Cornell University	Poster Presenter	Female
Moerman, Pepijn	Johns Hopkins University/Whiting School of Engineering	Poster Presenter	Male
Morales Ferrer, Javier M	Boston University	Poster Presenter	Male
Musgrave, Patrick F	University of Florida	Poster Presenter	Male
Najafi, Ahmad R	Drexel University	Poster Presenter	Male
Oates, William S	Florida A&M-Florida State University	Poster Presenter	Male
Omar, Mostafa	Johns Hopkins University	Poster Presenter	Male
Osorio, Juan C	Purdue University	Poster Presenter	Male
Parsa, Atoosa	University of Vermont	Poster Presenter	Female
Patrick, Jason F	North Carolina State University	Poster Presenter	Male
Paul, Justine E	University of Illinois Urbana-Champaign	Poster Presenter	Female
Reinhardt, William	University of Pennsylvania	Poster Presenter	Male
Reyes, Catherine G	Lawrence Livermore National Laboratory	Poster Presenter	Female
Riley, Katherine	Purdue University	Poster Presenter	Female
Rivera, Jesse	University of California Los Angeles	Poster Presenter	Male
Rodriguez Koett, Luis	University of Illinois at Urbana-Champaign	Poster Presenter	Male
Rudnick-Cohen, Eliot	Air Force Research Lab, Multidisciplinary Science and Technology Center	Poster Presenter	Male
Sanchez, Ramon	Boston University	Poster Presenter	Male
Sarles, Stephen A	University of Tennessee	Poster Presenter	Male
Sarmiento, Ezra	Univeristy of California, Irvine	Poster Presenter	Male
Shakiba, Maryam	University of Colorado at Boulder	Poster Presenter	Female
Shen, Beijun	Johns Hopkins University	Poster Presenter	Female
Sigrest, Piper	University of Michigan	Poster Presenter	Unspecified
SUN, BOHAN	Johns Hopkins University, Mechanical engineering	Poster Presenter	Male
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Tehrani, Mehran	The University of Texas at Austin	Poster Presenter	Male
Teixeira, Yasmin	UCONN - University of Connecticut	Poster Presenter	Female
Truby, Ryan L	Northwestern University	Poster Presenter	Male
Verrico, Daniel	Case Western Reserve University	Poster Presenter	Male

Name	Affiliation	Participation	Gender
Versaw, Brooke A	Caltech	Poster Presenter	Female
Volders, Timothy	University of Liège	Poster Presenter	Male
Walgren, Patrick	Texas A&M Aerospace Engineering	Poster Presenter	Male
Wang, Suitu	Texas A&M University	Poster Presenter	Male
Wu, Boliang	University of California, Los Angeles	Poster Presenter	Male
Wu, Wenbing	University of Michigan	Poster Presenter	Male
Wu, Qian	University of Missouri	Poster Presenter	Male
Xu, Patricia	Cornell University	Poster Presenter	Non-Binary
Yang, Xingwei	University of Colorado Boulder	Poster Presenter	Male
Zhang, Yuning	University of Michigan	Poster Presenter	Male
Asp, Leif E	Chalmers University of Technology	Attendee	Male
Bodkhe, Sampada	Polytechnique Montreal	Attendee	Female
Boley, John William	Boston University	Attendee	Male
Drummy, Lawrence	AFRL	Attendee	Male
Geubelle, Philippe H	University of Illinois at Urbana-Champaign	Attendee	Male
Gimm, J. Aura	Office of Basic Energy Sciences, DOE	Attendee	Female
Handa, Sheetal	bp International Ltd	Attendee	Male
Joo, James	AFRL/RQVS	Attendee	Male
Kang, Seung-Kyun	Seoul National University	Attendee	Male
Klein, Shirell	HRL Laboratories	Attendee	Female
Kotov, Nicholas A.	University of Michigan	Attendee	Male
Makhoul-Mansour, Michelle	The University of Tennessee, Knoxville	Attendee	Female
Mason, Thomas A	AFRL	Attendee	Male
Najem, Joseph	The Pennsylvania State University	Attendee	Male
Nguyen, Andrew	University of California, Irvine	Attendee	Male
Pankonien, Alexander M	Air Force Research Laboratory - Multidisciplinary Science and Technology Center	Attendee	Male
Qi, H. Jerry	Georgia Institute of Technology	Attendee	Male
Reich, Gregory W	Air Force Research Laboratory	Attendee	Male
Roy, Ajit K	Air Force Research Laboratory	Attendee	Male
Runnerstrom, Evan	US Army Research Office	Attendee	Male
Sundaresan, Vishnu	DARPA	Attendee	Male
Thomas, James P	US Naval Research Laboratory	Attendee	Male
Wang, Kon-Well	University of Michigan	Attendee	Male
Yu, Kai	University of Colorado Denver	Attendee	Male