

CIREP 2021

Celebrating
International
Research and
Education
Partnerships

June 2-3, 2021 from 8:00 AM to 12:00 AM EDT

Digital Agenda

Promoting sustainable international
partnerships in research and education.

Organization Committee

Prof. Shashank Priya

Penn State University

Ms. Bethann Hassinger

Penn State University

Ms. Jade Honey

Penn State University

Ms. Sadie Spicer

Penn State University

Prof. Mike Lanagan

Penn State University

Mr. Marcus Fish

The American Ceramic Society

Ms. Belinda Raines

The American Ceramic Society

Ms. Jennifer Leedy

Penn State University

Prof. Larry Nagahara

Johns Hopkins University

Prof. Jenni Evans

Penn State University

Prof. Jian Hsu

Penn State University

Ms. Heather Dehnel

Penn State University



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Celebrating International Research and Education Partnerships (CIREP 2021)

June 2 – 3, 2021

Online link will be emailed to registered attendees

Hosted by: Penn State University, University Park, PA

Workshop partners: American Ceramic Society, Johns Hopkins University

The 20th century features the shift from an industrial age to an information age, which has accelerated the opportunities for international research and education partnerships. Global connectivity is no longer an issue, and in this past year, the ability to interact with audiences across a wide range of geographies using multimedia tools has grown tremendously. This workshop is being organized to celebrate the international relationships, to share learnings and outcomes, to identify remaining barriers and to develop strategies to address them.

CIREP 2021 will be held as a virtual workshop. Attendance is by invitation only. If you would like to attend this workshop, please submit the online form available at this link:

<https://sites.psu.edu/priya/events/cirep2021/>

Below are discussion points for workshop attendees (references are included at the end):

- 1. Significance of international collaborative research activities:**
 - a. Given the increasing complexity and fast pace of scientific research and technology development, there is a growing recognition that international and interdisciplinary collaborations are key to meeting the projected technology roadmaps and provide required workforce.
 - b. International partnership greatly facilitates knowledge flow; enabling the researchers to share their ideas and study the complex subjects from multiple perspectives. This combination often provides innovative pathways for solving cross-disciplinary topics.
 - c. Partnerships provide mechanism to break the resource limitations on expertise, facilities, funding, and talent to tackle challenging scientific problems.
 - d. Partnerships maximize the outcome of individual researchers by scaling up the input in a collaborative environment.
 - e. International collaboration avoids fragmentation of research investment, leading to the high-quality convergent research with critical mass, and success with clear tipping points.
 - f. The ability to scrutinize, debate, and share experiences is essential for academic and scientific accomplishment. Constructively challenging accepted opinions and ideas is central to their development, and international collaborations help to facilitate this.
 - g. Partnerships enable establishment of new opportunities for industry through participation in global value chains and access to new and emerging markets.

- 2. Significance of international collaboration in education, student training and work force development:**
 - a. As science and technology, engineering facilities, human resources, and various professional expertise are continually spreading all over the world, it is particularly important to cultivate a large population of globally engaged STEM students who are able to adapt and share their knowledge in the international environment.

- b. International collaborations provide an opportunity to promote the social, cultural, and ethical competencies of faculty and students engaged in the collaborative research work.
- c. In the process of continuously solving complex problems with global social impact, it is necessary to train highly inclusive engineers and technicians. This need can be achieved through international cooperation that helps participants in building the social and cultural capabilities and global networks necessary to achieve this goal.
- d. Exposing students (via student exchange programs) to the international research community at a critical stage in their careers serves to establish international networks to bolster their professional development and leverage domestic and international resources for maximum benefit.

3. Challenges in global collaboration and strategies to promote international partnerships:

- a. Overcoming language barriers between overseas colleagues.
- b. Developing new collaboration infrastructures in response to unexpected crisis such as a pandemic or natural disaster, via online conference, virtual laboratory, and virtual/augmented reality technologies.
- c. Solving intellectual property disputes by creating appropriate legal platforms for international partnership.
- d. Building collaborating teams with committed research colleagues sharing a unified vision and objectives, visionary leadership, mutual respect, and willingness to recognize other's contributions.
- e. Increase in scrutiny in collaborating on certain topics with certain countries and balancing that with open collaboration.
- f. Establishing the appropriate framework of international partnership that specifies important operation strategies such as a decision-making mechanism and formal agreements on the range, type and assessment of collaborative activities.
- g. More support from governments and funding agents to ensure that policy development and program delivery will match the great momentum that international collaboration has recently gained in global research and education.
- h. Experience has shown that establishing an effective university partnership requires persistent effort. This persistence includes long-term contact, a full understanding of the culture and goals of each other's institutions, and ensuring ethics and standards compatibility in cooperation.
- i. In industry practice, the internationalization of research and development has been proven countless times to help improve the innovation and competitive performance of enterprises on a global scale. Nevertheless, it becomes very intricate on how to control the degree of internationalization of research and development, how to create effective geographical diversification and international policies of R&D cooperation and integrate them into the strategic direction of enterprise development. All above issues will have a decisive impact on the benefits and costs of the internationalization of R&D.

4. Facts:

- a. In 2018, slightly more than one out of five global science and engineering publications had coauthors from multiple countries.
- b. For many research institutions world-wide, most research positions are now announced internationally in order to attract the best candidates with academic quality and relevance. In Norway, for instance, 29% of scientific positions are currently held by foreign researchers, which is an increase from 18% ten years ago.

- c. Since World War II, the United States has always been the shrine in the minds of many scientific researchers. Long-term studies on international scientific cooperation has shown that only countries that are fully open in thought and academics can have strong science. Those countries that accept visitors and encourage researchers to participate in foreign technical cooperation, and those countries that advocate cross-border research cooperation and provide adequate funding for international projects are always able to produce better science and show the greatest potential for innovation.
- d. European University Association (EUA) recently announced its vision for 2030 as University without Walls, stressing the importance for the academic community to reach out and open their doors to the world with a readiness to learn from others while standing firm on core values.
- e. In the 21st century, international collaboration has proven to be inevitable on many expensive, unrepeatable projects—CERN (European Council for Nuclear Research) and the Human Genome Project being prime examples.
- f. Recent statistics show that among multiple disciplines, large teams with a background in international cooperation are often the fastest growing modes for research capabilities and output. The most striking feature is that the research outcomes are often related to more and more authors and country affiliation.
- g. From smallpox to Ebola to Covid-19, international collaboration in health and science has historically been a major success. It has led to breakthroughs and advances we could not have imagined if countries had pursued it alone.
- h. A team of engineers, physicians, computer scientists and others at the Massachusetts Institute of Technology have been working on a low-cost ventilator. Its open-source design was taken up by a group of Indian engineers (who develop robots) in a race to build ventilators to ease the country's shortage.
- i. The Institute Pasteur in Dakar, Senegal has been working closely with the British biotechnology firm Mologic to develop a new form of rapid test kits for COVID-19, to be made in and distributed across Africa from its custom-built DiaTropix facility.
- j. Promising examples of international partnership include several projects currently active during the coronavirus outbreak, such as the African Coalition for Epidemic Research, Response and Training and the Partnerships for Enhanced Engagement in Research, a model of a North-South scientific collaboration.⁸
- k. An overwhelming 94% of the world's 1000 largest corporative innovators conduct elements of their R & D programs abroad.
- l. At the US National Science Foundation, the program of Partnerships for International Research and Education (PIRE) has been developed to catalyze a higher level of international engagement in the U.S. science and engineering community. Another program, The International Research Experiences for Students (IRES), focuses on active research participation by undergraduate and graduate students in high quality international research, education and professional development experiences in NSF-funded research areas.



¹ NSF ERCs and International Collaboration Rationale, <https://erc-assoc.org/international-collaboration-resources/international-collaboration-rationale>

² PROGRAM SOLICITATION NSF 20-598: International Research Experiences for Students (IRES)

³ “Why are International Collaborations so Important For Universities?,” <https://www.qs.com/why-are-international-collaborations-so-important-for-universities/>

⁴ Nuria E. Hurtado-Torres, J. Alberto Aragón-Correa, Natalia Ortiz-de-Mandojan, “How does R & D internationalization in multinational firms affect their innovative performance? The moderating role of international collaboration in the energy industry,” *International Business Review* 27 (2018) 514–527

⁵ Jan Petter Myklebust , “29% of scientific positions held by foreign researchers,” *University World News*, 19 February 2021

⁶ Christopher Llewellyn Smith , “Knowledge, Networks and Nations: Global Scientific Collaboration in the 21st Century,” Royal Society report on the state of global science

⁷ David Hsiehchen, Magdalena Espinoza and Antony Hsieh, “Multinational teams and diseconomies of scale in collaborative research,” *Science Advances* 18 Sep 2015, Vol. 1, no. 8, e1500211

⁸ Mukhisa Kituyi, Secretary-General, United Nations Conference on Trade and Development (UNCTAD), “COVID-19: Collaboration is the engine of global science – especially for developing countries,” *World Economic Forum*, 15 May 2020

⁹ Jaruzelski, B., Schwartz, K., & Staack, V. (2015). *The 2015 global innovation 1000: in-novation’s new world order* (Study report) <http://www.strategyand.pwc.com/reports/2015-global-innovation-1000-media-report>. (Accessed 03 December 2016).



Agenda Day 1

8:00 am – 8:15 am	Opening Remarks and Workshop Overview	Dr. Shashank Priya , Associate Vice President of Research, Penn State University
8:15 AM – 8:45 AM	Keynote Speaker - Global Research and Training Partnerships with the US National Cancer Institute	Dr. Nastaran Zahir , Chief, Center for Cancer Training, National Cancer Institute
8:45 AM – 9:15 AM	Keynote Speaker - International Collaborations: Taipei Tech Experience	Dr. Sea-Fue Wang , President Taipei Tech
9:15 AM – 9:30 AM	Enhancing International Research through University/Industry Research Consortia	Dr. Elizabeth Dickey , Carnegie Mellon University, President Elect of The American Ceramic Society
9:30 AM – 9:45 AM	Partners to Innovate: to Innovate in this world, we must dream.	Dr. Chris Housmekerides , Senior Vice President, Research & Development Hygiene at Reckitt
9:45 AM – 10:00 AM	Break	
10:00 AM – 10:15 AM	International research collaborations at Johns Hopkins University	Dr. Denis Wirtz , Vice Provost for Research, Johns Hopkins University
10:15 AM – 10:30 AM	The wide roads and narrow paths of international scientific partnerships	Dr. Christina von Haaren , Vice-President for International Affairs and Sustainability, Leibniz University, Germany
10:30 AM – 10:45 AM	Siemens PhD Engagement Models	Mr. Arturo Pizano , Siemens, Program Manager, University Relations
10:45 AM – 11:00 AM	Introduction of domestic and international cooperation of Korea Institute of Science and Technology (KIST)	Dr. Jiwon Choi , Professor at Division of NT-IT convergence, Korea Institute of Science and Technology (KIST)
11:00 AM – 11:55 AM	Panel 1 Discussion – Research partnerships – across academia, national labs, and industry	<p>Moderator: Dr. Shashank Priya, Associate Vice President of Research, Penn State University</p> <p>Dr. Tatsuki Ohji, Fellow at The National Institute of Advanced Industrial Science and Technology, Nagoya, Japan, Past President of The American Ceramic Society</p> <p>Dr. Azar Alizadeh, GE, Principle Scientist</p> <p>Mr. George Kovoov, Sr. Vice President Sales, PepsiCo Global Food Service</p> <p>Mr. Mark Mecklenborg, Executive Director, The American Ceramics Society</p> <p>Dr. Jenni Evans, Director of the Institute for Computational and Data Sciences, Penn State University</p>
11:55 AM – 12:00 PM	Closing Remarks	Dr. Shashank Priya , Associate Vice President of Research, Penn State University

Agenda Day 2

8:00 AM – 8:05 AM	Opening remarks	Dr. Shashank Priya , Associate Vice President of Research, Penn State University
8:05 AM – 8:35 AM	Keynote Speaker - Enhancing research and education through international partnerships	Dr. Marc Parlange , Provost, Monash University, Australia
8:35 AM – 9:05 AM	Keynote Speaker - Catalyzing U.S. Higher Education to Build a Better post-Pandemic Future through Global Science and Engineering Collaborations	Dr. Shekhar Bhansali , Division Director, Electrical, Communication and Cyber Systems, National Science Foundation
9:05 AM – 9:20 AM	Scientific Team-Work Enables Accelerated Discoveries and Translation	Dr. Clive Randall , Director, Materials Research Institute, Penn State University
9:20 AM – 9:35 AM	International Cooperations of Kiel University	Dr. Eckhard Quandt , Vice President of Research, University of Kiel, Germany
9:35 AM – 9:50 AM	Nurturing Fruitful Research Collaborations from an Industrial Perspective	Dr. Dana Goski , President of the American Ceramic Society, and Vice-President of Research & Development at Allied Mineral Products, LLC
9:50 AM – 10:05 AM	Break	
10:05 AM – 10:20 AM	A Perspective On the I-U Engagement Experience from a Japanese Electronic Component Manufacturer	Mr. Jerry Kolbe , Director, Corporate Technology and Innovation, Murata Electronics Americas
10:20 AM – 10:35 AM	Leveraging Global R&D to Innovate in Coffee Equipment	Mr. Paul Camera , Senior Manager, Equipment Development and Trade Asset Programs Commercial Excellence, Nestle
10:35 AM – 10:50 AM	JHU Whiting School of Engineering's international experience and possible academic initiatives and opportunities that WSE can currently offer to its international partners	Dr. Hedy Alavi , Assistant Dean for International Programs, Whiting School of Engineering, Johns Hopkins University
10:50 AM – 11:45 AM	Panel 2 Discussion - Workforce development, federal programs, and industry centers	<p>Moderator: Dr. Larry Nagahara, Associate Dean of Research, Johns Hopkins University</p> <p>Dr. Roger Brindley, Vice-Provost, Global Programs, Penn State University,</p> <p>Dr. Holger Blume, Vice-President for Research and Transfer, Leibniz University, Germany</p> <p>Dr. Franklin A. Carrero-Martínez, Senior Director, The National Academy of Sciences, Engineering, and Medicine</p> <p>Dr. Reuben Kraft, Associate Professor, Penn State University</p> <p>Dr. Andreia Pierce, Amazon Web Services</p>
11:45 PM – 12:15 PM	Keynote Speaker - Title TBD	Dr. Mary Kavanagh , Minister Counsellor, Research and Innovation European Union Delegation to the United States of America
12:15 PM – 12:30 PM	Summary and Planning for CIREP 2022	Dr. Shashank Priya , Associate Vice President of Research, Penn State University

Speaker Bio's



Dr. Shashank Priya
Associate Vice President
of Research, Penn State
University

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Shashank Priya is currently Professor of Materials Science and Engineering at Pennsylvania State University, and serves as Associate Vice President for Research and Director of Strategic Initiatives. His research is focused in the areas related to multifunctional materials, energy harvesting and bio-inspired systems. He has published over 450 peer-reviewed high impact journal papers / books chapters and more than 60 conference proceedings covering these topics. He has published ten US patents and edited ten books. His research group is interdisciplinary, consisting of materials scientists, physicists, mechanical engineers, roboticists, and electrical engineers. This allows the group to conduct integrated research addressing several aspects at the material, component, and system level. He is the founder and chair of the Annual Energy Harvesting Society Meeting. He is a member of the Honorary Chair Committee for the International Workshop on Piezoelectric Materials and Applications (IWPMA). He is a fellow of the American Ceramic Society.

Dr. Nastaran Zahir

Chief, Cancer Training Branch Center for Cancer Training
National Cancer Institute

Email: nas.zahir@nih.gov

Dr. Nastaran (Nas) Zahir serves as a newly appointed Chief of the Cancer Training Branch where her primary role is to oversee the extramural research fellowships, training, and career development programs funded by the National Cancer Institute (NCI). Dr. Zahir has embarked on a partnership with the NCI Center for Global Health to discover opportunities for international cancer training and education. Prior to joining the Cancer Training Branch, Dr. Zahir served as Associate Director at the NCI Division of Cancer Biology where she coordinated programs that integrate physical sciences perspectives in cancer research, fostered collaborative team science, supported education, outreach, and advocacy activities, and promoted resources for data sharing and biospecimen standards.





Dr. Sea-Fue Wang
President and a Professor
of Materials Science and
Engineering of National
Taipei University of
Technology
Email: sfwang@ntut.edu.tw

Professor Sea-Fue Wang took up his post in 2018. He is the 14th President and a Professor of Materials Science and Engineering of National Taipei University of Technology (Taipei Tech), Taiwan. His research interests include processing, characterization, and theoretical understanding of electronic, magnetic, and optical ceramics. He has been recognized worldwide for his contribution in the development of low-fire microwave ceramics, formulations for multilayer ceramic capacitors (MLCCs) and inductors (MLCIs), solid oxide fuel cells (SOFCs), and ceramic films for resistive random access memories (RRAMs). He is currently the Chairperson of Asian Electroceramics Association (AECA) and Powders and Powder Metallurgy Association of the Republic of China, Vice President of the Materials Research Society, Taiwan and the former Chairperson of Taiwan Ceramic Society. To date, he holds more than 65 national and international patents and 283 scientific journal publications. Due to his contribution to Materials, he has won many awards including Distinguished Engineering Professor Award granted by Chinese Institute of Engineers, Taiwan, Outstanding Service Award granted by Materials Research Society, Taiwan, 15th National Standardization Achievement Award granted by Bureau of Standards, Metrology & Inspection, M.O.E.A, R.O.C and Ceramic Indus. Award granted by Taiwan Ceramic Society. As the President of Taipei Tech, he is dedicated to make Taipei Tech a better international university and emphasizes the importance of international collaborations. The presentation introduces complementary-oriented international collaborations in both education and research activities from East Asian perspectives, the Taipei Tech experience. The aim is to promote international and interdisciplinary collaboration with compatible partners and generate innovative ideas to confront the challenges of the 21st century.

Dr. Elizabeth Dickey

Teddy & Wilton Hawkins Distinguished Professor
and Head Department of Materials Science and
Engineering Carnegie Mellon University, President
Elect of The American Ceramic Society

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Professor Dickey's research aims to develop processing-structure-property relationships for materials in which the macroscopic physical properties are governed by point defects, grain boundaries or internal interfaces. Early in her career she received the Presidential Early Career Award for Scientists and Engineers (PECASE) for her work on metal-ceramic interfaces, and later she was awarded the Fulrath Award by the American Ceramic Society in recognition of her research on characterization of functional ceramics and composites. For approximately six years she served as the Director of the Center for Dielectrics and Piezoelectrics, an international research consortium. Professor Dickey is a fellow of the American Ceramic Society, the Microscopy Society of America and AAAS, and she is currently the president-elect of the American Ceramic Society.



**Dr. Chris
Housmekerides**
Senior Vice President,
Research & Development
Hygiene at Reckitt

Chris graduated from The College of Wooster with a bachelor's degree in chemistry; after completing his PhD in Inorganic Chemistry at Penn State, he began his career as an R&D Manager at P&G; in 1997, he joined Reckitt where he held various positions always within R&D; in 2009, he moved to Sara Lee, which later on merged with Unilever, before returning to Reckitt in January 2018 as the Senior Vice President of R&D for the Hygiene business

Chris has spent over two decades questioning how to be more innovative in the Hygiene and Homecare sector, challenging brands to provide better solutions, for today and tomorrow; he is a passionate about driving disruptive innovation via partnerships and grass root education in the relentless pursuit of a cleaner and healthier world; Chris would like to ultimately move the world to a more sustainable future where our children are taught about purpose-led products and their impact on the world in their formative years... in this way, they can continue to be the voices of change in the future, shifting us to a better world where everyone can live happier lives in a better environment

Chris chose an international career and lived/worked in various geographies, a life full of the colors of cultural diversity; he now lives with his wife in the Netherlands, and their 2 children, whom are in College.

Denis Wirtz is the Vice Provost for Research and Theophilus Halley Smoot Professor of Engineering Science at Johns Hopkins University. Dr. Wirtz directs the Johns Hopkins Physical Sciences-Oncology Center and co-directs the Cancer Nanotechnology Training Center, both National Cancer Institute-funded entities. He studies the biophysical properties of healthy and diseased cells, including interactions between adjacent cells and the role of cellular architecture on nuclear shape and gene expression. Cell biophysics, single molecule manipulation, intracellular particle trafficking, instrument development, tissue engineering, and nanotechnology in biology and medicine are among his research interests.



Dr. Denis Wirtz
Vice Provost for Research, Johns
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Dr. Christina von Haaren

Vice-President for International Affairs
and Sustainability, Leibniz University,
Germany

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Dr. Christina von Haaren has been a full-time professor at the Institute for Environmental Planning at Leibniz Universität Hannover since 1998. She conducts research on biodiversity and ecosystem services in environmental planning in national and international contexts, usually involving the addressees of the research results. Since 2019, she is Vice President for International Affairs and Sustainability at Leibniz Universität Hannover.

Mr. Arturo Pizano

Siemens, Program Manager, University Relations

Dr. Arturo Pizano is Manager, University Relations for Siemens Corporation, Corporate Research and Technology. In this capacity he is responsible for establishing and maintaining relationships with US universities of strategic importance to Siemens' R&D organization across the globe. Prior to his current position, Arturo was a part of the internal audit organization of Siemens as a member of the Operational Audit team. Arturo joined Siemens Corporate Research in 1993 as a Member of the Technical Staff in the imaging and Visualization Department. He became Program Manager in Multimedia Communications and Collaboration and later Head of the Multimedia and Video Technology Department. Prior to joining Siemens he worked as a Staff Scientist in the Software Research Center of Ricoh Corporation in Santa Clara, California. Arturo holds a B.Sc. in Actuarial Science from the National Autonomous University of Mexico and a M. Sc. and PhD in Computer Science from the University of California Los Angeles.





Dr. Jiwon Choi

Professor at Division of NT-IT convergence, Korea Institute of Science and Technology (KIST)

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Ji-Won Choi received his Ph.D. degree, following a M.S. degree and B.S. degree in Ceramic Engineering from Yonsei University. He joined Cornell University as a post doctoral fellow in 2004 to 2005. He also joined National Institute of Standard and Technology as a guest researcher in 2013. He has joined Korea Institute of Science and Technology (KIST) since 1994, where he conducted research in the science and technology of microwave dielectric, piezoelectric, transparent conducting oxide, thin film rechargeable batteries, and 2 dimensional nano-sheet materials and devices. He has been highly productive during his career with over 200 research publications, book chapters, and 180 domestic and foreign Patents. He is currently a full-time professor at division of NT-IT convergence, KIST-School. He is a vice president, director and editor Member of The Korean Institute of Electrical and Electronic Material Engineers (KIEEME), The Korean Ceramic Society (KCS), and The Korean Sensors Society (KSS).

Tatsuki Ohji is a Fellow Scientist of National Institute of Advanced Industrial Science and Technology (AIST), Japan, and President 2019-2020 of the American Ceramic Society. His research interests include mechanical property characterization of ceramics, ceramic composites and porous materials, microstructural design of ceramic materials for better performance, structural control of meso/ macro porous ceramics, and green manufacturing of ceramic components. He has authored or coauthored more than 350 peer-reviewed papers and 20 book chapters, edited more than 40 books and conference volumes, and chaired or co-chaired more than 40 international conferences and symposia.

Fellow of the American Association for the Advancement of Science (AAAS), The American Ceramic Society, ASM International, the Ceramic Society of Japan, and the European Ceramic Society and Academician of the World Academy of Ceramics, he has received numerous awards including John Jeppson Award, Samuel Geijsbeek PACRIM International Award, and ECD Bridge Building Award all from The American Ceramic Society, Academic Achievement Award from the Ceramic Society of Japan, Distinguished Research Achievement Award from the Japan Society of Powder and Powder Metallurgy, IIM Lectureship Award from ASM International, Honour Medal of Aurel Stodola from the Slovak Academy of Science, and Lee Hsun Lecture Award from Chinese Academy of Sciences.

He is a Governor of Acta Materialia Inc and an Editor of “Journal of the American Ceramic Society” and “Ceramic International” in addition to an editorial board member of many international journals.

In the discussion he will emphasize:

- Significance of international collaborative research activities
- Challenges in international collaboration including language and cultural issues.
- Key factors in building long-lasting international partnerships



Dr. Tatsuki Ohji

Fellow at The National Institute of Advanced Industrial Science and Technology, Nagoya, Japan, Past President of The American Ceramic Society

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Dr. Azar Alizadeh
GE, Principle Scientist
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A Principal Scientist at GE Research, Dr. Azar Alizadeh is the Principal Investigator on multiple US Department of Defense (DARPA, NextFlex and NBMC- AFRL) sponsored programs and leads cross-functional teams of industrial and academic partners to develop advanced computational platforms and wireless health and performance monitoring systems. The wearable sensing platforms developed by these teams enable vital signs as well as sweat and interstitial biochemical measurement capabilities and have the potential to revolutionize medicine and performance monitoring through early detection of illness, infection, fatigue and injury. Dr. Alizadeh holds a PhD in physics, is a NextFlex fellow, has co-authored 50 peer reviewed publications, and holds 20 US patents/patent applications. Dr. Alizadeh is the co-Lead on the NextFlex Human Monitoring Systems and serves on the Governing Council of NBMC. Dr Alizadeh is the recipient of GE 2019 Edison Award and Semi Flexi 2017 Award.

George currently leads the International Foodservice business and provides stewardship to PepsiCo's Foodservice segment for international markets. In this role George is responsible for accelerating growth with key customers & priority channels. He also leads development & deployment of Foodservice specific talent development programs and adoption of 'Best of PepsiCo' solutions to elevate global Foodservice capability at PepsiCo.

George is a long-term PepsiCo employee having spent 27+ years with the company in various assignments across India, Asia Pacific and China and now at the Headquarters in NY. Prior to moving to his current role in early 2016, George spent 10 years in various roles for PepsiCo's China business. His last role in China was General Manager of the PepsiCo China Snacks and Foods division. George played a pivotal role in architecting the China expansion strategy and unlocking locally relevant innovation acceleration for that business. He has a passion for local talent development and played a key role as manager, coach and mentor to many of the current leaders of the PepsiCo China business. Prior to moving to China, he spent 10 years with PepsiCo in India and 3 years in Bangkok covering the Asia Pacific region.

George started his career with Unilever in India where he spent 3 years before moving on to complete his MBA with Distinction from the Asian Institute of Management in Manila in 1993 after which he moved to PepsiCo. His exposure to working across so many different countries and cultures give him a unique perspective on some of the challenges to international collaboration.

George is married and lives in New York with his wife Neena, his elder daughter Meher and his younger daughter Naaz. In his spare time, he likes playing golf, watching movies with his family and playing his guitar.



Mr. George Kovoov
Sr. Vice President Sales,
PepsiCo Global Food Service



Mr. Mark Mecklenborg

Executive Director

The American Ceramic Society

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Mark Mecklenborg is executive director of The American Ceramic Society (ACerS). With nearly forty percent of members from outside the United States, ACerS facilitates global research via its journals publishing program, its international scientific/engineering conferences and its international chapters. Mark Mecklenborg has been involved in facilitating these ACerS programs for over 25 years.

Dr. Jenni Evans

Director of the Institute for Computational and Data Sciences, Penn State University

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Jenni L. Evans is the Director of Penn State's Institute for Computational and Data Sciences (ICDS), Professor of Meteorology & Atmospheric Science and Faculty Associate of the Earth and Environmental Sciences Institute (EESI). The Institute for Computational and Data Sciences (ICDS) is a pan-university research institute and is also the home of Penn State's high performance computing facility. ICDS jointly employs over 30 tenure track faculty and supports researchers across the disciplinary spectrum.

Evans was the Centennial President of the American Meteorological Society (AMS) in 2019. She is a Fellow of both the AMS and the American Association for the Advancement of Science (AAAS). She has served on numerous national and international committees and has long been Meteorologist in an interdisciplinary team of scientists and actuaries advising the State of Florida by auditing catastrophe risk models for hurricanes and flood.

Evans' research spans tropical climate, climate change, and hurricane lifecycles in the tropics, as well as hurricanes that undergo "extratropical transition" (like Hurricane Sandy in 2012) and sonification – the "music of hurricanes." She uses high performance computing for simulations of hurricanes, and machine learning and advanced statistical techniques, to study formation of hurricanes in the tropics and subtropics, methods for improving hurricane forecasts, theory for the limiting intensity of hurricanes and how this could change with climate change, and the use of climate models to understand the impacts of climate change on our daily lives. Her research has taken her to many countries and opened doors to collaborations and opportunities across the globe.

Jenni Evans graduated from Monash University in Melbourne, Australia and shortly afterwards made her way to Penn State. In 2021, she was honored to be named a Monash Fellow. Evans is the Penn State Faculty Liaison for development of a university-level partnership between Monash and Penn State, two universities with amazing strategic, research, intellectual, and cultural synergies.



Dr. Marc Parlange
Provost, Monash University, Australia

Professor Marc Parlange is the Provost and Senior Vice-President of Monash University and is Professor in the Department of Civil Engineering. Prior to assuming his position at Monash, he served as Dean of the Faculty of Applied Science at the University of British Columbia (Canada) and Dean in Switzerland at the École Polytechnique Fédérale de Lausanne (Switzerland) in the School of Architecture, Civil and Environmental Engineering. He was professor and department chair at Johns Hopkins University and Assistant and Associate Professor at the University of California at Davis. He did his MS and PhD at Cornell University and BS at Griffith University.

His research in the broad area of environmental fluid mechanics primarily relates to the measurement and simulation of air and water flows over complex terrain, with a focus on how air turbulence and atmospheric dynamics (atmospheric boundary layer flow) influence urban, agricultural and alpine environments. He is also active in addressing water resources challenges and environmental change in remote communities (West Africa) through his research on hydrology and climate change. He has received prestigious awards for his academic achievements, including the Macelwane Medal and the Hydrologic Sciences Award of the American Geophysical Union, and the Dalton Medal of the European Geosciences Union. He is Fellow of the Canadian Academy of Engineering, the American Association for the Advancement of Science, the American Meteorological Society, and the American Geophysical Union.

Professor Parlange is a highly regarded graduate advisor and his numerous PhD students and post-doctoral associates have had much international success in universities and industry. He has received the University Excellence in Teaching Award from EPFL. He has served as Editor-in-Chief of Water Resources Research and Editor for Advances in Water Resources. In 2017 he became a member of the U.S. National Academy of Engineering and in 2020 was awarded the Hydrologic Science Medal of the American Meteorological Society at their Centennial celebration in Boston.

Dr. Shekhar Bhansali
Division Director, Electrical, Communication and
Cyber Systems, National Science Foundation

Shekhar Bhansali, PhD, is Division Director (Electrical, Communications and Cyber Systems), National Science Foundation, and Lucent CALA Technologies Distinguished University Professor of Electrical and Computer Engineering at Florida International University. Dr. Bhansali received his Ph.D. in Electrical Engineering from RMIT University in Australia (1997). As a mentor, Dr. Bhansali has advised over 22 postdocs, 65 Ph.D. and master's students, and more than 130 undergraduate/high school students. Dr. Bhansali is the recipient of Alfred P. Sloan Foundation Mentor of the Year Award, ECS Sensors Division Outstanding Achievement Award, and the NSF CAREER Award. He is Fellow of AAAS, NAI, IOP and AIMBE.





Dr. Clive Randall

Director, Materials Research Institute, Penn State University

Email: car4@psu.edu

Clive A. Randall is a Distinguished Professor of Materials Science and Engineering and Director of Materials Research Institute at The Pennsylvania State University. He has a B.Sc. (Honors) in Physics from University of East Anglia, UK (1983), and a Ph.D. in Experimental Physics from University of Essex, UK (1987). He was Director for the Center for Dielectric Studies 1997-2013, and Co-Director of the Center for Dielectrics and Piezoelectrics 2013-2015 (now Technical Advisor). Interests include discovery, processing, material physics, and compositional design of functional materials. Among his awards are Fellow of the American Ceramic Society, Academician of World Academy of Ceramics, IEEE Distinguished Lecturer, and Fellow of the European Ceramic Society.

Dr. Eckhard Quandt

Vice President of Research, University of Kiel, Germany



Eckhard Quandt received his Diploma and Dr.-Ing. degrees in physics from the Technische Universität Berlin, Germany, in 1986 and 1990, respectively. Since 2006 he is a Professor with Kiel University, Kiel, Germany, where he is Director at the Institute for Materials Science. He is the spokesperson for the DFG CRC 1261 Magnetoelectric Sensors: From Composite Materials to Biomagnetic Diagnostics, and is a member of Acatech, National Academy of Science and Engineering. His scientific focus is material research on smart materials and multiferroics and the use of these materials for the development of sensors and actuators. Since October 2020 he is Vice President for research, transfer, scientific infrastructure, and digitalization at Kiel University.



Mr. Jerry Kolbe
Director, Corporate
Technology &
Innovation

Jerry Kolbe is Director in Corporate Technology and Innovation for Murata Electronics Americas. In his current position, Kolbe is responsible for championing strategic technology research engagements in the Americas.

He led the Murata team in a collaboration with Disney and Science from Scientists®, a non-profit science education concern, to develop and implement a live entertainment STEM science show named The SpectacuLAB which ran from November 2017 to February 2019 at the Innoventions® Pavilion in Epcot® at Walt Disney World® Resort. In October 2018, Kolbe was awarded the Disney “Mouse Car” Award for special service to Disney. Jerry is one of the inventors listed on a 2020 patent for a new electronic material in healthcare application field of use. Author of eight papers, he won Best of Session Paper at the 33rd Annual IICIT Symposium in October 2000.

Kolbe is the designated Board Observer to oversee Murata’s SAFE investment in an early stage company and led the communications workstream for 2012 acquisition of RFM. He served on the Editorial Advisory Board for Wireless Design & Development, was a charter member of IEC (TC 113) / IEEE 62659: Large Scale Manufacturing for nanoelectronics international technology standard and served on the EIA Technology Council.

Kolbe received his bachelor’s degree in Electrical Engineering from Penn State University.

Dr. Dana Goski

President of the American Ceramic Society, and Vice-President of Research & Development at Allied Mineral Products, LLC

Email: dgg@alliedmin.com

Dr. Dana Goski is President of the American Ceramic Society, and Vice-President of Research & Development at Allied Mineral Products, LLC, where she guides global research initiatives and innovation in high temperature refractory ceramic materials. Innovation does not happen in a silo. Dana will share her experiences to develop successful industrial-academic-government and domestic-international collaborations, as well as barriers to those that were not.





Mr. Paul Camera
Senior Manager,
Equipment
Development and Trade
Asset Programs

Paul has spent a career translating the needs of business into innovative hardware and equipment programs from industrial to retail and foodservice. For the past 20 years Paul has led R&D around equipment for Starbucks and now Nestle Coffee Partners. This work has included equipment programs for the global Starbucks organization as well as working and collaborating with manufacturers and suppliers around the world. At Nestle, Paul's team also partners with the global Nestle organization in Switzerland, to partner on equipment programs and as liaison to Starbucks corporate for equipment innovations and programs.

At Nestle, Paul's team also partners with the global Nestle organization in Switzerland, to partner on equipment programs and as liaison to Starbucks corporate for proprietary equipment innovations and programs.

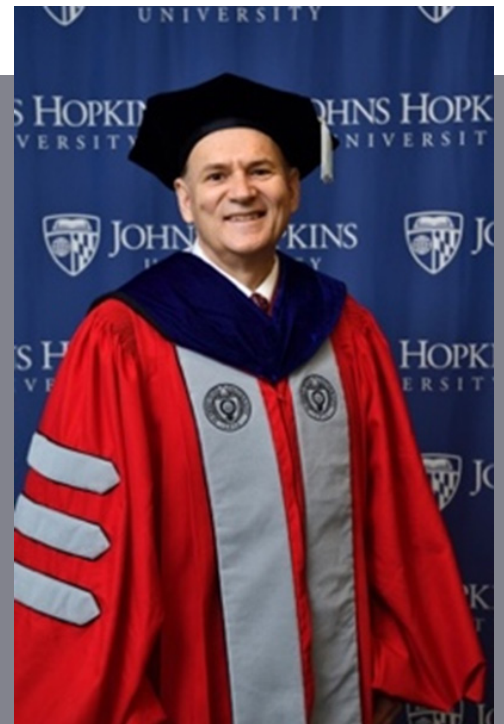
Paul has a degree in Chemical Engineering from the University of Illinois, in Chicago. Prior to working in foodservice, he spent time in process engineering, hazardous and radioactive waste disposal systems, and chemical warehouse and material transfer systems.

Dr. Hedy V. Alavi

Assistant Dean for International Programs, Whiting
School of Engineering, Johns Hopkins University

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Dr. Hedy Alavi is the Assistant Dean for International Programs in the Whiting School of Engineering at Johns Hopkins University and an Associate Teaching Professor in the Department of Environmental Health and Engineering. He is also the Program Chair for the Johns Hopkins Engineering for Professionals, Environmental Engineering, Science, and Management Programs. Dr. Alavi received his M.S. and Ph.D. degrees in Civil Engineering with emphasis on Environmental Engineering and minors in Chemical Engineering and Applied Mathematics from the Department of Civil and Environmental Engineering and Geodetic Science at the Ohio State University. He also received an MBA degree in Management from Johns Hopkins University. In his position as the Assistant Dean for International Programs, Dr. Alavi has been instrumental in the development of international partnerships and academic collaboration between the Whiting School of Engineering and the peer institutions abroad.





Dr. Larry Nagahara is currently the Associate Dean for Research in the Whiting School of Engineering at Johns Hopkins University. Previously, he was the Associate Director in the Division of Cancer Biology at the National Cancer Institute (NCI)/National Institutes of Health (NIH), where he directed and coordinated NCI's Physical Sciences in Oncology Initiative that brought research activities related to expanding the role of the physical sciences and engineering in cancer research. Prior to joining NCI, Dr. Nagahara was with Motorola Labs as a Distinguished Member of the Technical Staff and led their nanosensor effort.

Dr. Larry Nagahara
Associate Dean of Research,
Johns Hopkins University

Dr. Roger Brindley
Vice-Provost, Global Programs, Penn State University
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Dr. Roger Brindley is Vice Provost for Global Programs at the Pennsylvania State University overseeing 100 professionals who manage education abroad programs, advise international students and scholars, and facilitate the University's many international partnerships around the world. As Vice Provost, he works with senior administrators to promote Penn State's comprehensive strategic foundation in global engagement and guides Penn State's international agenda. Dr. Brindley recently concluded a six-year term on the APLU Commission for International Initiatives.





Dr. Holger Blume

Vice President Research and Transfer,
Leibniz Universität Hannover

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Holger Blume received his Dipl.-Ing. degree in electrical engineering from the University of Dortmund, Germany in 1992. There he also finished his PhD on nonlinear fault tolerant interpolation of intermediate images in 1997. From 1998 to 2008 he worked as a senior engineer for the Chair of Electrical Engineering and Computer Systems at the RWTH Aachen University. There he finished his habilitation degree on model based design space exploration for heterogeneous architectures in 2008. In July 2008 he was appointed professor for architectures and systems at the Institute of Microelectronic Systems at Leibniz Universität Hannover.

Prof. Blume is chairman of the German chapter of the IEEE Solid State Circuits Society.

His research interests are in design space exploration for algorithms and architectures for digital signal processing. Main application fields, which are addressed, are biomedical applications and driver assistance systems.

Prof. Blume served as dean of the faculty of electrical engineering and computer science from 2017 to 2019. Since January 2021 he is vice president of research and transfer of the Leibniz Universität Hannover.

Dr. Franklin Carrero-Martínez holds a PhD in Neuroscience and a Certificate in Business Administration from the University of Illinois. His distinguished career includes roles as researcher, educator, science administrator, and science diplomat in government, academia and in NGOs.

In academia, he established a strong research program aimed at understanding the brain's self-organization and developed innovative STEM educational approaches for underserved populations. The prestigious Roger Revelle Fellowship in Global Stewardship brought him to DC to serve at the Department of State's Office of the Science and Technology Adviser (STAS), National Academies (NAS), National Science Foundation's International Office. In 2016, he returned to State where he directed STAS during a critical transition period while serving as the Department's senior advisor on STI issues. In 2018, he re-joined NAS to be Senior Director for Global Sustainability and Development where he continues working on science diplomacy and collaboration while co-leading the Academies' Diversity, Equity and Inclusion initiative



Dr. Franklin A. Carrero-Martínez,

Senior Director, The National
Academy of Sciences, Engineering,
and Medicine University



Dr. Reuben Kraft

Associate Professor, Penn State University

Email: reuben.kraft@psu.edu

Reuben Kraft is an associate professor of mechanical and biomedical engineering at Penn State University. After earning his doctorate in mechanical engineering from Johns Hopkins University, Dr. Kraft spent four years at the U.S. Army Research Laboratory and then one year at The Johns Hopkins University Applied Physics Laboratory. Dr. Kraft has been at Penn State since 2013 and is a co-hire of Penn State's Institute for Computational and Data Sciences. He is also affiliated with the Penn State Institute of the Neurosciences and Center for Neural Engineering. Dr. Kraft's primary research interests are in computational biomechanics, high strain rate mechanics, and mechanobiology. Dr. Kraft was awarded the NSF CAREER and the Presidential Early Career Award for Scientists and Engineers (PECASE) for his work in computational biomechanics.

Dr. Andreia Pierce is a business leader with biophysics, pharmaceutical, and biomedical research experience who loves learning and teaching alike. She earned her PhD in Biomedical Sciences from the University of North Texas Health Sciences Center, her MBA from Southeastern Oklahoma State University, and served as a research fellow at the University of Texas Southwestern Medical School. In her industry career, she has received numerous awards for her business leadership, which speaks to her strong background in learning, developing and managing large corporate teams. She joined AWS in 2020 to build a vision for Research on the AWS cloud, and to lead a team of technical and sales business development professionals in efforts to drive innovation in the way scientists across disciplines collaborate and conduct research. Strategy is a passion for Andreia, and she does not stray too far from it in her spare time, as she practices Brazilian Jiu-Jitsu with her husband and 10-yr old son in their own Gracie Garage in the Greater Philadelphia Area. She is also involved in her community as a local elected official and a board member of an anti-bullying non-profit



Dr. Andreia Pierce

Amazon Web Services



Dr. Mary Kavanagh

Minister Counsellor, Research and Innovation,
European Union Delegation to the United States of

Mary Kavanagh is the Minister-Counselor for Research and Innovation at the European Union's Delegation to the United States of America in Washington DC. Her role involves raising awareness of opportunities for EU-US cooperation and exchange in research and innovation and facilitating that cooperation at both government agency and stakeholder levels. She also endeavors to keep her Headquarters abreast of research and innovation policy developments in the USA.

Prior to her current posting in the U.S., she worked in the International Cooperation Directorate of the Directorate-General for Research and Innovation at the European Union headquarters in Brussels. She was the Deputy Head and Senior Expert in the Unit which deals with cooperation with North America, Latin America and the Caribbean.

Mary has a PhD in Plant Science from University College Cork, Ireland and carried out post-doctoral research in France and Switzerland before swapping the laboratory for science policy.



Organization Committee

Dr. Mike Lanagan

Professor of Engineering Science and Mechanics, Associate Director, Materials Research Institute, Associate Director, Center for Dielectric Studies

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Michael Lanagan is a Professor of Engineering Science and Mechanics Department (ESM) at Penn State. His current research focuses on high frequency properties of materials for magnetic resonance imaging and 5G.



Ms. Jade Honey

Director of Corporate Engagement at Penn State Health and Penn State College of Medicine

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Jade K. Honey, MPA, director of corporate engagement at Penn State Health and Penn State College of Medicine is part of the Corporate Engagement Center team. Jade coordinate's multi-faceted relationships with companies with strong mutual interests with the College of Medicine and/or Penn State Health, promoting a University-wide, holistic approach and lead a data-driven process to identify key accounts for the College and Health System.

Jade is an experienced university-industry relations professional, with a background in economic development, corporate philanthropy and healthcare fundraising. She has written and managed more than \$20 million in philanthropic requests to support inter-departmental programs throughout various service lines and expansions within the system. Jade is also a proud Penn State alumna ('10 & '13g). Previously, she was Director of Advancement at Linden Hall School. She also spent 7 years at UPMC Pinnacle (formerly PinnacleHealth System) working directly with the health system's corporate funders. Jade resides in Harrisburg, PA with her husband and two dogs.

Dr. Jian Hsu

Professor, Penn State University

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Dr. Jian Hsu serves in the Penn State Strategic Interdisciplinary Research Office as the director of Joint Innovation Partnership (JIP). He also holds a tenured faculty position in the department of Engineering Science and Mechanics.



Mr. Marcus Fish

The American Ceramic Society

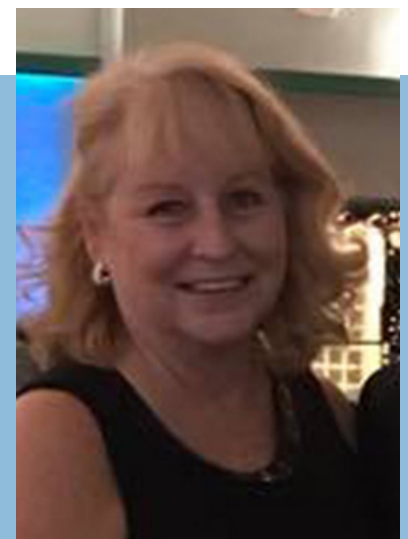
Email: mfish@ceramics.org

Marcus Fish is the Development Director for The American Ceramic Society and The Ceramic and Glass Industry Foundation. He oversees all fundraising and philanthropic activities of the Society and Foundation.

Ms. Belinda Raines

The American Ceramic Society

Ms. Raines has been with The American Ceramic Society for 5½ years, originally serving as the liaison for US Sections and International Chapters, and more recently as Program Manager for the Ceramic and Glass Industry Foundation. She holds a Bachelor of Arts in Theology degree from Ohio Dominican University and a Master of Theological Studies degree from Trinity Lutheran Seminary in Columbus, Ohio.





Ms. Jennifer Leedy
Administrative Assistant, Penn State
University
Email: jsl226@psu.edu

Jenn Leedy is an Administrative Assistant in the Office of the Senior Vice President for Research at Penn State University. She also graduated from Penn State with an undergraduate degree in English.

Ms. Bethann Hassinger
Program Assistant, Penn State
University

Bethann coordinates and creates CVENT registration sites university wide.



Ms. Heather Dehnel
Marketing Communications Specialist, Penn
State University

Heather Dehnel is the marketing communications specialist for the Department of Materials Science and Engineering at Penn State. She is an alumna with a B.A. in communications.



Ms. Sadie Spicer
Administrative Coordinator, Penn State
University

Email: sco3@psu.edu

Sadie Spicer is an Administrative Coordinator in the Materials Science and Engineering Department at Penn State University.

