June 23, 2021 (Wednesday), 3.10 - 4.40 pm ET

Research Professions in Academia, Industry & National Laboratories: An Early Career Forum

Organized by: ASME/MED, and NAMRI/SME

Sponsored by: NSF (providing travel support to students)

Hosted by: The University of Cincinnati, College of Engineering and Applied Science, Ohio

Purpose: The goal of this forum is to provide current students at all levels of graduate and undergraduate programs as well as recent graduates with better information/knowledge of various research and technical positions in academia, industry, and national laboratories. The forum will further discuss how to be successful professionally in various settings.

Date/ Place: Wednesday, June 23, 2021, afternoon from 3.10 – 4:40 pm ET, online. The forum is held during the co-located manufacturing conferences: the NAMRI/SME 49th North American Manufacturing Research Conference (NAMRC49) and the ASME 2021 International Manufacturing Science and Engineering Conference (MSEC2021).

Agenda (Wednesday, June 23, 2021):

3:10 – 3:55 pm ET:	Opening Remarks and Welcome Up to 5-minute spoken introduction by each panelist
3:55 – 4:40 pm ET:	Breakout room discussions

Forum Format:

1. Each panelist will introduce themselves and share career advice during the panel session. They have experience in conducting and leading research and engineering projects in academia, government labs, and industrial sectors.
2. Breakout room discussions will follow, where participants can discuss careers in academia, government, and industry. Panelists will discuss topics such as how to search for a job, career management, funding for research, etc. Participants can move between breakout rooms.
3. Participants are encouraged to engage in conversations/ discussions related to their particular/ personal interests.

Fee: Free for registered conference participants

Attendance: Open to all registered conference participants;
Mandatory for NSF Travel Grant student applicants

Early Career Forum Chairs:

Barbara S. Linke, Dr.-Ing. habil.
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Zhijian (ZJ) Pei, PhD, FASME, FSME
Professor
Department of Industrial and Systems Engineering
Texas A&M University, College Station, TX
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The 9 panelists have experience working in academia, government/national labs, and industry. Many of the panelists have experience in more than one of these sectors.

Breakout room	Panelist	Academia	Government/ National Labs	Industry
Room 1	Hitomi Yamaguchi Greenslet (University of Florida)	X	X	X
Room 2	Jingjing Li (Pennsylvania State University)	X		X
Room 3	Dale Lombardo (GE Aviation)			X
Room 4	Brigid Mullany (University of North Carolina at Charlotte)	X	X	
Room 5	Subramanian Ramalingam (Saint-Gobain Research North America)			X
Room 6	Miguel Saez (GM)			X
Room 7	Alyssa Sullivan (MxD)		X	
Room 8	Scott Smith (Oak Ridge National Laboratory)	X	X	
Room 9	Sarah Wolff (Texas A&M University)	X	X	

Hitomi Yamaguchi, University of Florida

Hitomi Yamaguchi is currently an associate professor in the Department of Mechanical and Aerospace Engineering at the University of Florida. The path that led her to UF includes positions in industry, national laboratories, and academia both inside and outside her native Japan. When she was studying for her master's degree, she interned for three months at the Paul Scherrer Institut in Switzerland. This experience and a previous supervisor inspired her to explore academia. In 1996, she received her doctorate from Utsunomiya University, Japan, and started her professional career as research associate at the University of Tokyo. She soon realized that industrial experience was necessary in order to effectively teach Manufacturing Engineering, and she left the university in 1997 to work as a research engineer at Extrude Hone Corporation in Pennsylvania. After gaining some industrial experience, she returned to her alma mater where she became a research associate and later associate professor. In 2002-2003, she spent her sabbatical working as a researcher abroad at NASA Glenn Research Center in Ohio. She left Utsunomiya University in 2007 and moved to UF.

Her research interests have evolved throughout her career and now include ultra-precision finishing (such as magnetic field-assisted finishing), surface functionalization, and medical-device development. Her work has been published in over 90 refereed journal papers, and she has been granted 8 patents. She has received several awards, including Outstanding Young Engineer awards from JSME in 1995, SME in 2000, and JSAT in 2003. She served as the president of the North American Manufacturing Research Institute of SME for the 2018-2019 term. She is currently the vice chair of the Scientific Technical Committee for Abrasive Processes (STC-G) of CIRP (the International Academy for Production Engineering). In recognition of her contributions, she has been elected as a fellow of both ASME and SME. In addition to her research, she is passionate about working in the areas of Manufacturing Education and Workforce Development. She is the faculty advisor of the UF chapter of Pi Tau Sigma. She hosts students (from K-12 to university) in her laboratory every summer and has hosted events where professionals can share their experiences in engineering education and career development.

Jingjing Li, Pennsylvania State University

Jingjing Li is an Associate Professor of Industrial and Manufacturing Engineering at the Pennsylvania State University, University Park, USA. She holds a PhD and MA from the University of Michigan, Ann Arbor, an MS from Tsinghua University and a BS from Beihang University, Beijing, China. She worked in General Motors R&D Center as an intern for one year. Her primary research interest focuses on materials processing and characterization, particularly on in-situ material characterization, mechanical behavior, failure analysis, and the effect of microstructure on macroscopic properties with applications in sheet metal forming, joining of dissimilar materials, additive manufacturing, and composite manufacturing. She is an Associate Editor of Journal of Manufacturing Science and Engineering, Manufacturing Letters, and Journal of Manufacturing Processes, and a recipient of the Chao and Trigger Young Manufacturing Engineer Award from the American Society of Mechanical Engineers, NSF CAREER Award, and several best paper awards

Dale Lombardo, General Electric Aviation

Dale Lombardo leads a diverse global team of manufacturing special process technologists for GE Aviation. The GEA Special Process Technology Center links materials to design performance and product safety through special processes including machining, joining, heat treatment, additive, chemistry, composites, and inspection. The SPTC team fulfills a specification, monitoring, and control function for manufacturing of GEA parts. In 1992, Dale graduated from Rensselaer Polytechnic Institute with MSME joined GE Research developing control strategies for machining as a special process. In 1996, Dale worked for GE Aviation and expanded in-process machining monitoring and diagnostics and led the shot peening special process team. Dale joined GE Power in 2005 as part of an internal manufacturing technology startup organization and expanded into high speed machining and surface treatment and metrology. From 2013 to 2020, Dale led the GE Research Manufacturing Technology team as manager and principal engineer working across GE's products and external engagements in advancing manufacturing.

Brigid Mullany, University of North Carolina at Charlotte

Brigid Mullany received her Bachelor of Engineering Degree and Doctorate in Mechanical Engineering from University College Dublin in Ireland. Upon graduation she received a twoyear EU Marie Curie postdoctoral research position at Carl Zeiss in Germany. In 2004 she joined the Department of Mechanical Engineering and Engineering Science at the University of North Carolina at Charlotte where she is now a Professor and the Associate Dean for Research in the College of Engineering. Her research areas include surface finishing, surface analysis and advanced manufacturing. She received the SME Kuo K Wang Outstanding Young Manufacturing Engineer Award in 2007, and the NSF CAREER award in 2008. She was a Program Director in the Advanced Manufacturing Cluster at the National Science Foundation from 2017-2019. She is a CIRP fellow, the Chair of the CIRP Scientific Technical Committee on Surfaces (STC-S), and the president elect for the North American Manufacturing Research Institute (NAMRI) of SME.

Subramanian Ramalingam, Saint-Gobain Research North America

Dr. Subramanian Ramalingam is a Senior Research Engineer with Saint-Gobain Research North America where he leads projects in the Bonded Abrasives Group on development of new grinding wheels and improvement of processes /testing techniques to better characterize the abrasive grinding performance. Subramanian received his Ph.D. in Materials Science from the Colorado School of Mines in 2013 and a B. S. in Metallurgical and Materials Engineering from National Institute of Technology, Trichy in India. Before joining Saint-Gobain, Subramanian was a Research Fellow at the Colorado School of Mines leading a research project and advising undergraduate students. During his time at Mines, Dr. Ramalingam's research focus has been on processing and characterization of glasses, ceramics and composites. His work on using food waste as raw materials for glass making received widespread media attention and is the basis for several ongoing research projects to find use for the waste as it presents a disposal problem despite having various waste management practices. Subramanian is an active member of the American Ceramic Society and he has authored numerous international journal publications and holds 2 patents with several in process. In his current role, Subramanian is using his strong technical and leadership skills to develop next generation grinding wheels with improved performance and also better understand the structure-property-performance relations to drive future product development efforts.

Miguel Saez, General Motors

Dr. Miguel Saez is currently a researcher for General Motors Research and Development, Manufacturing Systems Research Lab in Warren, Michigan. In his current role, he develops novel industrial robotics and automation solutions to advance the technology used for manufacturing electric vehicles. He holds a Bachelor's Degree in Mechanical Engineering from La Universidad del Zulia, Venezuela and both a Master's Degree in Automotive and Manufacturing and a Ph.D. in Mechanical Engineering from the University of Michigan, USA. After obtaining his Bachelor's Degree, Miguel led multiple projects developing manufacturing and assembly systems for alternative fuel vehicle programs. During his graduate studies at the University of Michigan, Miguel developed new methods for modeling and control of manufacturing systems for multi-objective optimization of plant floor operations. After graduation, Miguel joined General Motors Research and Development in June 2018 as a researcher. In his current role, Miguel has been able to capitalize on his strong technical and leadership skills to develop new technology in the field of robotics. His work aims to enable coordinated movement of multi-arm systems using artificial vision and force sensing data fusion for robotic assembly operations.

Scott Smith, Oak Ridge National Laboratory

In 2019, Dr. Scott Smith joined Oak Ridge National Laboratory as Senior Distinguished R&D Staff Member in the Energy and Environmental Sciences Directorate. Prior to that he was Professor and Chair of Mechanical Engineering at the University of North Carolina at Charlotte, where he was a faculty member from 1995-2019. During 2012-13 he served as the Assistant Director for Technology at the US Advanced Manufacturing National Program Office in Washington DC. From 2019 – 2020 he served on the MForesight Leadership Council.

He received his PhD from the University of Florida in 1987, his MS from the University of Florida in 1985, and his BSME from Tennessee Technological University in 1983. He has been an engineering researcher and educator for more than 30 years at the University of Florida, and at the University of North Carolina at Charlotte. His teaching and research areas include high-speed machining, process optimization, and machine dynamics. He has taught numerous industrial short courses. He holds 11 patents. He has worked as a consultant on machining and machine tools for Alcoa, Bell Helicopter, Boeing, Cooper Tire, General Motors, Georgia Pacific, Goodrich, Sikorsky, and many others.

Smith is one of 17 US Fellows of the International Academy for Production Engineering (CIRP), and he is a Fellow of both SME and ASME. Smith served as the Chair of the Manufacturing Engineering Division of ASME, and as President of the North American Manufacturing Research Institute of SME. He served as Chair of the SME International Awards and Recognition Committee, as member of the CIRP Council, as Chair of the CIRP Editorial Committee, and as Chair of the CIRP Machines Technical Committee. He was a founder of both of Manufacturing Laboratories, Inc., and BlueSwarf LLC. He is author of more than 100 technical papers, and he is co-author of the books Machining Dynamics: Frequency Response to Improved Productivity and Mechanical Vibrations: Modeling and Measurement. Smith has received numerous awards including the ASME William T. Ennor Award, the ASME Blackall Award, the NAMRI/SME S.M. Wu Research Implementation Award, the SME Education Award, the AMT Charles F. Carter Advancing Manufacturing Award, the American Helicopter Society Pinckney Award, an R&D 100 Award, and the NAMRI/SME Lifetime Service Award.

Alyssa Sullivan, MxD

Alyssa Sullivan is the Senior Director of External Relations at MxD, the nation's digital manufacturing institute and the National Center for Cybersecurity in Manufacturing as designated by the U.S. Department of Defense. MxD, which stands for "manufacturing times digital," helps manufacturers build every part better than the last using digital technologies.

Alyssa manages MxD's entire public-facing portfolio including media relations, digital presence, messaging, branding, and corporate events. Prior to joining MxD in 2014, Alyssa was the Chief of Staff to the head of energy efficiency programs at the U.S. Department of Energy where she completed a Presidential Management Fellowship. She has also held roles at the International Energy Agency, the U.S. House of Representatives, and the U.S. Office of Management and Budget. Alyssa has a master's in American Government and a bachelor's in Government and Spanish from Georgetown University.

Sarah Wolff, Texas A&M University

Dr. Sarah Wolff is an assistant professor in the Industrial and Systems Engineering department at Texas A&M as of Fall 2019. She focuses on manufacturing processing, particularly monitoring additive manufacturing of metallic and composite materials with high-speed cameras and at the small scale. She completed her PhD in mechanical engineering at Northwestern University in 2018 with her thesis work on understanding the directed energy deposition additive manufacturing process. For the following year, she was an Enrico Fermi fellow at Argonne National Laboratory where she built a directed energy deposition system and used high energy X-rays at the Advanced Photon Source to monitor additive manufacturing processes in real time.