

MICROFIBERS AND MICROPLASTICS: PURSUING A LIFE-CYCLE APPROACH TO SOLUTIONS

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Speaker Bios (in speaking order)



John Fernández

John Fernández '85 is a professor of building technology in the MIT Department of Architecture, a practicing architect, and the Director of ESI. Fernández is founder and director of the MIT Urban Metabolism Group, a highly multidisciplinary research group focused on the resource intensity of cities and design and technology pathways for future urbanization. He is author of two books, numerous articles in scientific and design journals including *Science*, the *Journal of Industrial Ecology*, *Building and Environment*, *Energy Policy* and others, and author of nine book chapters. Fernández is chair of Sustainable

Urban Systems for the International Society of Industrial Ecology and associate editor of the journal *Sustainable Cities and Society*.



Anna-Marie Cook

Anna-Marie Cook is an environmental engineer and the Coordinator for the Marine Debris Program at the Environmental Protection Agency, Region 9. Prior to coordinating EPA's Marine Debris Program, Anna-Marie's focus on water protection and restoration led her to work as a Remediation Project Manager overseeing the cleanup of military bases. She is one of EPA's lead scientists investigating the potential health effects of marine plastics and continues to pursue this area of research in her current position with EPA's Office of Research and Development (ORD), Regional Science Program.



Rachael Miller

Rachael Miller is Co-Founder and Executive Director of Rozalia Project, a group dedicated to protecting and cleaning the ocean using technology, innovation, solutions-based research and engaging STEM programs. Through this group, she has helped design the Cora Ball, a product designed to collect microfibers released during machine-washing of synthetic fabrics.



Beth Jensen

Beth Jensen is Senior Director of Sustainable Business Innovation for the Outdoor Industry Association (OIA), a membership-driven trade organization for the outdoor industry. Using their many connections with leading outdoor industry companies such as Patagonia, Polartec, and Timberland, the OIA is promoting awareness of microplastics and microfiber pollution within the outdoor community and is helping develop tools and resources around best practices. Jensen is an advisory board member for the

Northwest Green Chemistry Center.



Gregory Rutledge

Gregory Rutledge is a professor in the Department of Chemical Engineering at MIT. He is an elected fellow at the American Institute of Chemical Engineers, a fellow of the American Chemical Society, and the recipient of the Fiber Society Founder's Award. Rutledge's research interests revolve around polymer science and engineering, statistical thermodynamics, molecular simulation and nanotechnology. His research group seeks to deepen understanding of the properties and processing of polymeric materials

from a fundamental knowledge of their chemistry and molecular level structure. Rutledge also acts as the faculty coordinator for MIT's engagement with Advanced Functional Fabrics of America (AFFOA).



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Markus Buehler

Markus Buehler is professor and head of MIT’s Department of Civil and Environmental Engineering and is the principal investigator at the Laboratory for Atomistic and Molecular Mechanics. His research interests revolve around making bio-inspired nanotechnology sustainable and scalable for large-volume materials application. He is editor-in-chief of *BioNanoscience* and editor for journals including *Nanotechnology*, *Computational Materials Science*, and the *International Journal of Applied Mechanics*. Buehler is the recipient of numerous awards including the Harold E. Edgerton Faculty Achievement Award, the Alfred Noble Award, and the Presidential Early Career Award for Scientists and Engineers.



Benedetto Marelli

Benedetto Marelli is a professor in the Department of Civil and Environmental Engineering at MIT and is the principal investigator in the Laboratory of Advanced Biopolymers. Marelli’s research interests include bio-inspired materials, self-assembly, mechanical and optical properties, 3D printing, and emerging technologies. With his research group, Marelli studies structural polymers, biomineralization and self-assembly.



Admir Masic

Admir Masic is a professor in the Department of Civil and Environmental Engineering at MIT and the principal investigator of the Laboratory for Multiscale Characterization and Materials Design. Masic’s research focuses on developing high performance in situ and multiscale characterization techniques to investigate complex hierarchically organized materials. With his research group, Masic studies ancient technologies as a means to develop new durable and sustainable building materials.



Brian Anthony

Brian Anthony is the Associate Director of MIT.nano, the Director of MIT’s Master of Engineering in Manufacturing Program, and the principal investigator for the Device Realization Lab. The focus of Anthony’s research is computational instrumentation, the design of instruments and techniques to monitor and control physical systems. His work involves systems analysis and design, calling upon mechanical, electrical and optical engineering, along with computer science and optimization. He has extensive experience in market driven technology innovation as well as business entrepreneurship.



Scott Gallager

Scott Gallager is associate scientist at the Woods Hole Oceanographic Institute. Gallager’s research focuses on how planktonic organisms live in and adapt to their environments, and their functional morphology and biophysics. Central to his work is the development of instrumentation for quantifying the micro-scale to meso-scale distributions and the physical environment of plankton. Along with a team of coworkers, Gallager designed and has been implementing OceanCubes – an un-manned underwater

ORGANIZING TEAM

John Fernández - *Director, ESI*

Amanda Graham – *Executive Director, ESI*

Chris Noble – *Director of Corporate Engagement, ESI*

Sheri Brodeur – *Director of Corporate Relations, MIT Industrial Liaison Program*



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