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Plastics 101 Webinar Series: What are Plastics?

THURSDAY, SEPTEMBER 12, 2024

10:00–10:10 **Opening Remarks**

Jenna Jambeck, Georgia Athletic Association Distinguished Professor of Environmental Engineering, University of Georgia; and Co-Chair, NASEM Roundtable on Plastics

LaShanda Korley, Distinguished Professor of Engineering, University of Delaware; and Co-Chair, NASEM Roundtable on Plastics

10:10–10:30 **Past and Future of Plastics**

Rebecca Altman, Writer and Sociologist

10:30–10:40 **Q&A**

10:40–11:00 **What are Plastics?**

Tim Long, Center Director, Bio-design Center for Sustainable Macromolecular Materials and Manufacturing, Arizona State University

11:00–11:10 **Q&A**

11:10–12:00 **Panel Discussion**

Moderator: LaShanda Korley, Distinguished Professor of Engineering, University of Delaware; and Co-Chair, NASEM Roundtable on Plastics

Panelists: Rebecca Altman, Writer and Sociologist; **Tim Long**, Center Director, Bio-design Center for Sustainable Macromolecular Materials and Manufacturing, Arizona State University; **Jill Martin**, Global Sustainability Fellow, Dow

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Speaker Biographies

Rebecca Altman (she/her) holds a PhD in environmental sociology from Brown University and writes about plastics history for the public. Recent essays have explored the 19th-century emergence of plastics, the ascendence of plastic bags, as well as the histories of vinyl, PCBs, PFAS, Bakelite and polystyrene. Her work has appeared in Science, The Atlantic, The Washinton Post, Orion and Aeon Magazine. She guest-edited a series of four essays on plastics and petrochemistry for the environmental literary magazine, Orion and is currently co-teaching a course on environmental non-fiction for The Institute at Brown for Environment and Society (IBES). Rebecca lives in Providence, RI and serves on the Board of Directors of the Science and Environmental Health Network. She is working on her first book, The Song of Styrene: An Intimate History of Plastics, to be published by Scribner Books and Oneworld (UK). Essays -- and their bibliographies — can be found at: www. rebecca-altman.com

Tim Long received his Ph.D. in Chemistry from Virginia Tech, and he subsequently joined both Eastman Kodak and Eastman Chemical companies for eight years upon graduation. He joined the faculty in the Department of Chemistry at Virginia Tech, where he also served as the Director of the Macromolecules Innovation Institute until 2019. In 2020, Prof. Long accepted an interdisciplinary faculty position across the School of Molecular Sciences (SMS) and the School for Engineering Matter, Transport, and Energy (SEMTE) at Arizona State University (ASU) where he launched and now leads the Biodesign Center for Sustainable Macromolecular Materials and Manufacturing (BCSM3). In addition to over 440 peer-reviewed publications, his research awards include the 2023 3M Excellence in Adhesion Award, 2022 Paul J Flory Award, 2020 Virginia Outstanding Faculty Award, 2015 Virginia Scientist of the Year, 2010 Virginia Tech Alumni Research Award, ACS PMSE Collaborative Research Award, PSTC Carl Dahlquist Award, 2019 ACS Rubber Division Thermoplastic Elastomer Award, and the ACS POLY Mark Scholar Award. His most recent research efforts address the need for tailored advanced macromolecules for advanced manufacturing (3D printing), including vat photopolymerization, direct ink write, binder jetting, powder bed fusion, and melt extrusion. His research ranges from controlled polymerization processes for block copolymers to high performance engineering polymers for emerging technology with a lens of earth sustainability.

Jill Martin is a Senior Fellow in the Packaging and Specialty Plastics business of The Dow Chemical Company. For the past (almost) 30 years, she has served in both research and development (R&D) and technical service and development (TS&D) for the Packaging and Specialty Plastics and Hydrocarbons (PSP&H) business. She began her career in R&D working on polyethylene product development including hot melt adhesives, automotive UTH applications, and hygiene absorbent products. In 2003 she joined the TS&D group engaging directly with customers and brand owners in multiple market segments before transitioning into her current role aligned to development of circular and low- carbon solutions for the packaging market segments. In this role she has responsibility for development recycling processes and products in partnership with the packaging value chain and Dow's corporate partners. She received her Bachelor of Science Degree in Chemical Engineering from Carnegie Mellon University in Pittsburgh, Pennsylvania, and a Doctorate in Polymer Engineering and Science from Case Western Reserve University in Cleveland, Ohio. She holds over 30 patents and has presented at more than thirty conferences and workshops on a range of topics from medical devices to innovation in a circular economy for plastics. Martin is a member of the ISTA Global Executive Board and the Great Lakes Energy Institute Industry Advisory Board at Case Western Reserve University.