Biomanufacturing to Address Near-Term Climate Goals

March 3rd, 2023

12:00pm – 1:00pm (ET)

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The growing bioeconomy has the potential to assist in meeting climate and carbon goals. Certain technologies and products have already shown that bio-based processes offer more sustainable and less carbon-intensive methods than traditional manufacturing with petrochemicals. In order to reach the United State's and global climate goals, both near-term and long-term ideas are needed, and innovation will need to come from every area of science and engineering. There will also need to be a favorable environment for these products or processes to be implemented in industry. In this panel, we will explore what biomanufacturing efforts could be most impactful in the near-term, and the research, implementation, societal, and political barriers that exist.

The Goals of this panel are to:

- Discuss specific biomanufacturing processes and biomanufactured products that allow for near-term contributions toward meeting carbon and climate change goals.
- In relation to any biomanufacturing process or biomanufactured product, understand why these entities are considered to be the most likely to have an impact on near-term carbon and climate change goals.
- Explore the technical, societal, and political challenges that are preventing these products or processes from being realized.

FRIDAY, MARCH 3, 2023

12:00–12:30 **Opening Remarks**

Moderator:
Deepti Tanjore, ABPDU

Speakers:
Jeff Lievense, Lievense Bioengineering LLC
Corinne Scown, Lawrence Berkeley National Laboratory
Sarah Richardson, MicroByre

12:30–1:00 **Moderated Q&A with Panel**

Speaker Bios

Jeff Lievense is Founder & CEO of Lievense Bioengineering LLC, and in that capacity, he serves as an advisor to several biotechnology and chemical companies. Previously, he was Senior Advisor to the CEO, Bioengineering & Technology, at Genomatica, a leader in commercial development of biobased process technologies for more sustainable chemical production. He has decades of industrial metabolic engineering, fermentation process development, and process scale-up experience at several companies. His technical contributions span a range of first-of-a-kind biobased processes and products, including landmark achievements in the field: 1,4-butanediol (Genomatica), farnesene (Amyris), 1,3-propanediol (DuPont-Tate & Lyle), and indigo (Kodak-Genencor). As a technology executive and leader, he built effective organizations in large companies, small companies, start-ups, and non-profits. He has served his profession as an instructor, lecturer, invited speaker, and organizer in short courses, workshops, conferences, and university events. Jeff has been recognized for excellence in the field as a recipient of awards from Purdue University, Society for Industrial Microbiology and Biotechnology, American Institute of Chemical Engineers, Novozymes, University of Michigan, and National Academy of Engineering. He earned his BSE degree in chemical engineering (bio option) from the University of Michigan and his PhD in chemical engineering from Purdue University.

Corinne Scown is the Vice President and founder of the Life-cycle, Economics, and Agronomy Division (LEAD) at the Joint BioEnergy Institute (JBEI), Deputy Director for Research of the Energy Analysis and Environmental Impacts (EAEI) Division at Lawrence Berkeley National Lab, Head of Sustainability at the Energy and Biosciences Institute (EBI), and Co-Founder of Cyklos Materials. Scown's expertise includes life-cycle assessment, techno-economic analysis, biofuels and bioproducts, and co-management of energy and water. She has led projects funded by the U.S. Department of Energy, California Energy Commission, California Air Resources Board, and Energy Biosciences Institute. She also frequently collaborates with companies ranging from small startups to large multinational corporations in the bioenergy and bioproducts domain. Scown earned a B.S. in civil engineering with a double-major in engineering and public policy at Carnegie Mellon University, and she received her Ph.D. and M.S. in civil and environmental engineering at UC Berkeley.

Dr. Sarah Richardson is the CEO of MicroByre, a startup venture dedicated to domesticating novel bacteria for biomanufacturing. She founded MicroByre in 2017 with an award from the Department of Energy through Cyclotron Road. Sarah's primary expertise is in industrial biotechnology, with specialties in microbiology and computer science. She is often asked to advise large scale collaborations at the intersection of computational science and biology: she worked on the NCI/DOE Collaborations Working Group for the Frederick National Laboratory Advisory Committee from 2018-2021 and is currently an advisor to the DOE Pacific Northwest National Laboratory's Predictive Phenomics Initiative Science Advisory Committee. She is also the Industry Assessment subcommittee chair for the BioMADE Education and Workforce Development Committee. In 2020 she received the Next Generation Award from the Association for Women in Science. She was named a 2015 SynBio LEAP fellow for vision and excellence in leadership and won the L'Oréal Postdoctoral Women in Science Fellowship that same year. Her Ph.D. at the Johns Hopkins School of Medicine was in Human Genetics & Molecular Biology; her thesis was on the design and construction of a synthetic yeast genome. She went on to be the Distinguished Postdoctoral Fellow in Genomics at the Lawrence Berkeley National Laboratory, first in the laboratory of Eddie Rubin at the Joint Genome Institute and then under Jay Keasling at the Joint Bioenergy Institute. Her work at LBNL centered on non-model microorganisms and cryptic CRISPR systems.