

FERMENTATION SHORT COURSE FALL 2023 SPEAKERS



Vijay Singh, IBRL, UIUC

Dr. Vijay Singh is a Founder Professor in Grainger College of Engineering, Distinguished Professor of Bioprocessing in the college of ACES, Executive Director of Integrated Bioprocessing Research Laboratory at the University of Illinois at Urbana-Champaign and Deputy Director of the Center for Advanced Bioenergy and Bioproducts Innovation. His research is on the development of bioprocessing technologies for corn/biomass to ethanol, advanced biofuels, food and industrial products.



Brian Jacobson, IBRL, UIUC

Brian has a joint appointment managing IBRL & the Food Science & Human Nutrition Pilot Processing Plant. He is responsible for all facility operations and manages the pilot plant, laboratory, trades, and student staff/interns in the facilities. Brian developed and manages the Illinois Sustainable Food Project and assists with the Illinois Biodiesel Initiative and several departments' senior capstone courses across campus. He is also a member of the Institute of Food Technologists (IFT), Chicago Section IFT, and serves on the college safety advisory committee.



Matt Stasiewicz. FSHN. UIUC

Dr. Stasiewicz is an Associate Professor of Applied Food Safety in the Department of Food Science and Human Nutrition UIUC. His work uses risk assessment and improved data analytics to advance food safety microbiology. At MSU he earned both a B.S. in Biosystems Engineering, focusing on food process engineering, and a B.A. in Philosophy, focusing on ethics. At Cornell he earned an M.S. and Ph.D. in food microbiology, working on risk analysis. The lab has many projects using simulation and risk assessment to improve sampling and testing for, and management of, foodborne pathogens in large-scale food productions environments.



Mike Miller, FSHN, UIUC

Dr. Miller is a Professor of Food Microbiology and Associate Head for Graduate Programs in the Department of Food Science and Human Nutrition. He is also a co-theme leader in the Microbiome Metabolic Engineering theme at the Institute for Genomic Biology. His work focuses on fermentation: food, industrial and gut. Current projects include: glucosinolate metabolism by gut microbiota; aromatic amino acid metabolism by Lactic Acid Bacteria in fermented foods; and synthetic biology applications for food fermentations.



Michael Tai, Boston Bio Process

Michael is a bioprocess business leader that focuses on scaling up fermentation lab technology into economical commercialization. He has a PhD in Biological Systems Engineering, 6 years experience at ADM across R&D and production, and 2 years at Motif FoodWorks as Head of Bioprocess, developed heme bovine myoglobin bioprocess and successfully scaled up to metric ton level production. Michael co-founded Boston Bioprocess Inc. in 2022 as a scale up platform to help bioingredient companies develop and scale up their bioprocesses to get into commercial manufacture.



Yong-Su Jin, FSHN, UIUC

Dr. Jin is Professor of Food Microbiology in the Department of Food Science & Human Nutrition and a faculty member of the Institute for Genomic Biology (IGB). He is a principal investigator of the Energy Biosciences Institute (EBI), & is also a member of the Center for Advanced BioEnergy Research (CABER) at UIUC. Dr. Jin's research is centered on metabolic engineering of microorganisms to produce biofuels and chemicals from renewable biomass. His research aims to identify, characterize, and engineer beneficial genetic perturbations eliciting rapid and efficient production of target products, such as biofuels, nutraceuticals, and food ingredients.



Liz Tiegland, Tetra Pak

Liz Teigland is an Application Sales Manager at Tetra Pak, specializing in New Food Fermentation. With two decades of experience, Liz honed her expertise in portfolio management, product development, & commercialization. Her skills encompass areas including scale up & scale down, protein fractionation, statistical design, technology transfer, & fermentation development. Liz focuses on DSP for the development of specialty protein ingredients, & growing her skills in talent development & strategic leadership. Liz is an active member of professional communities, including Females in Food, Institute of Food Technologists, & the Good Food Institute.



Richard Mathies, Alfa Laval

Richard Mathies, BS, ChE is a Business Development Manager at Alfa Laval. He has 30 years of practical engineering and sales experience helping customers solve separation related problems. Primarily focused on continuous centrifugation in Life Sciences applications and industries -Biotechnology, Industrial Fermentation but also in Brewery and Specialty Chemicals. In Biotechnology; mammalian and microbial cell separation is of particular focus.



Marissa Nyland, IBRL, UIUC

Marissa Nyland joined IBRL in January 2022 as a member of the fermentation team. In March of 2023, she was promoted to Pilot Plant Specialist. She has a Bachelor's in Chemical Engineering from the University of Illinois at Urbana-Champaign. Previously, Marissa worked as a chemistry technician and nuclear equipment operator at Clinton Power Station and a technology transfer specialist at a pharmaceutical manufacturing facility.



Antoine Charbonneau, Applexion

Antoine Charbonneau is Process & Sales Manager for the Applexion American team, based in Denver. He has been working for Applexion for more than 6 years, specializing in various markets including Food, Functional ingredient and Bio industries (Fermentation) activities. Prior to that, he worked for several years as Process Engineer in Shanghai, China where he designed and engineered number of projects in the field of biotech and food & beverage, either for complete turnkey plants, or specific purification process units. He also published scientific articles in international reviews such as the Sugar Journal.



Phillip Crawford, Synonym

Phillip is the Associate Director of Project Engineering at Synonym & has 10 years of experience in the biopharmaceutical & industrial fermentation industries. Before Synonym, he worked at C16 Biosciences leading the tech transfer & startup of their first microbial oil production facility & worked at Novavax designing a facility for COVID-19 vaccine production. Early in his career, he worked at Genentech manufacturing biopharmaceuticals & managing equipment improvement projects & at Impossible Foods developing the soy leghemoglobin recovery process & increasing heme commercial production capacity. He is a licensed Professional Engineer and PMP.



April Hoffart, *ADM*

April Hoffart is the Sr. Modeling Capability Manager at ADM in the Science & Technology division, where she leads a team of engineers and student interns in building computer simulations to help optimize existing processes and to bring to light the value and risk potentials for new technology development. She has over 18 years of experience in the food and beverage industry, and has held a variety of roles in production, quality assurance, process development, and project management and R&D. She is a graduate of the University of North Dakota, where she earned a B.A. in Psychology, a B.S. in Chemical Engineering, and a Master of Science in Chemical Engineering.



Sarang Sunil, PhD Candidate, Department of Civil and Environmental Engineering UIUC Sarang, a current Mavis Future Faculty Fellow & Ravindar K. and Kavita Kinra Fellow, develops tools to design, simulate, & evaluate (via techno-economic analysis & life cycle assessment) biorefineries to characterize their financial viability & environmental sustainability & set development targets in projects funded by the DOE CABBI, BioMADE, & others. He also serves as a consultant with Bluestem Biosciences, where he develops tools to design & evaluate biorefineries for biochemical pathways. With his work, he aims to expedite the growth of early-stage bioprocessing technologies by prioritizing research, development, & deployment.



Ryan Caufield, Brendan Brown, Merrick

Ryan is a senior process engineer with more than a dozen years of design, commissioning, and operations experience in the bioprocessing industry. He leads the process development of novel projects that require scaling up first-of-a kind technologies from conceptual design through commissioning. He has experience in sterile fermentation, hygienic downstream processing, biofuel production (fermentation and thermochemical), and renewable natural gas. He enjoys figuring out what will work, how to build it, and the best way to run it.

Brendan has 9 years of experience as a process engineer with a focus on sustainable biofuels & alternative protein projects. He has a special interest in process modeling, particularly using Aspen Plus.



Ran Chao, LifeFoundry

Dr. Chao co-founded LifeFoundry in 2017 with the goal of transforming R&D in biotechnology through the close-loop integration of machine learning algorithms with high-throughput design-build-test cycles. Their new generation platform, the D.A.R.W.In. (Directed Autonomous BioResearch Workspace Infrastructure), facilitates protein engineering, metabolic pathway construction, large-scale genome optimization, etc. As a part of his PhD research, he and his colleagues designed and developed iBioFab, a fully automated and highly versatile robotic system for synthetic biology and a series of high-throughput molecular biology methods at the Institute of Genomic Biology. He is published in reputable journals and accumulated over 1,400 citations.