

FERMENTATION AND THE ART OF SCALING UP

SHORT COURSE

Agenda

Day 1, March 28, 2023: Introduction to Fermentation

Time	Topic	Lead
7:30 – 8:00am	Registration & Breakfast	IBRL
8:00 – 8:30am	Welcome, Introductions, Course and Fermentation Overview, Dry Grind Ethanol introduction	Vijay Singh
8:30 – 9:15am	Example Fermentations <ul style="list-style-type: none"> - Food - High Value Compounds 	Mike Miller, UIUC
9:15 – 10:30am	Fermentation Design	Tim Cooper, Danimer Scientific
10:30 – 10:45am	Break	
10:45 – 11:45am	Fermentation Prep, Media, & Sterilization	Matt Stasiewicz, UIUC
11:45 – 12:45pm	Lunch	
12:45 – 1:45pm	Aerobic Vs. Anaerobic Fermentations	Mahfuzul Islam, ADM
1:45 – 2:45pm	Growth, Metabolism, & Regulation	Yong-Su Jin, UIUC
2:45 – 3:00pm	Break	
3:00 – 5:00pm	DEMOS <ul style="list-style-type: none"> - Trends & BioCommand - Sterile Lab Technique: Seed Culture/Inoc - Fermenter Infrastructure - Fermenter Sterility & Sterile Sampling 	Kseniya Sheshukova Marissa Castner Phil Manning Kevin Wu
5:30pm – 7:30pm	Brewery Tour and Reception	Riggs Brewery

Day 2 March 29, 2023 Equipment Decisions and Process Optimization

Time	Topic	Lead
8:00 – 8:30am	Breakfast	
8:30 – 9:30am	Fermentation Scale-Up Considerations	Brad Stasny, Eppendorf
9:30 – 10:15am	Laboratory Automation & iBioFAB	Steve Lane, UIUC
10:15 – 10:30am	Break	
10:30 – 11:30am	Centrifugation	Richard Mathies, Alfa Laval
11:30 – 12:30pm	Chromatography	Antoine Charbonneau, Novasep
12:30 – 1:30pm	Lunch	
1:30 – 2:30pm	Smartflow Membrane Technology	Kelly Johnson & Jason Bell SmartFlow
2:30 – 2:45pm	Break	
2:45 – 4:45pm	Pilot Plant DSP Demonstrations <ul style="list-style-type: none"> - Centrifugation - TFF Membrane Filtration - Ceramic Membrane - SmartFlow Technology Lab Demos <ul style="list-style-type: none"> - YSI - HPLC - UV-Vis Spectroscopy - Microscopy 	Eric Wolfe Kseniya Sheshukova Suneet Takhar
5:00 – 7:00pm	Reception at I-Hotel	Research Poster Presentation

Day 3 March 30, 2023 Economic Analysis and Process Modeling

Time	Topic	Lead
8:00 – 9:30am	Networking Breakfast	
9:45 – 11:15am	Facility Construction Considerations	Kris Chatrathi, Black & Veatch
11:15 – 12:15pm	New Fermentation-Based Markets	Audrey Gyr, GFI
12:15 – 1:15pm	Lunch	
1:15 – 2:00pm	Integrating Process Design, Simulation, TEA, and LCA	Jeremy Guest, UIUC
2:00 – 3:30pm	Process Modeling & Economic Analysis	April Hoffart, ADM
3:30 – 3:45	Certificates & Group Photo	