

2021 ACS BIOT Meeting

"Resilience of Chemistry"

Atlanta, GA – August 22-26, 2021

Co-chair: Caryn Heldt, Michigan Technological University

Co-chair: Aaron Noyes, Codiak BioSciences

TECHNICAL AREA DESCRIPTIONS

Upstream Processes

Area Coordinators: Melisa Carpio Sartorius

Nitya Jacobs Amgen

Danielle Tullman-Ercek Northwestern

 Research focused on chemistries used to synthesize products from cellular and enzymatic biotechnologies

Sessions

- Upstream Processing: Mammalian-Media and Metabolism
- Upstream Processing: Mammalian-Innovative Technologies
- Upstream Processing: Mammalian-Novel Modalities
- Upstream Processing: Advances in Perfusion and Reactor Engineering
- Upstream Processing: Systems Biology & Omics-Tools and Applications
- Upstream Processing: Engineering Microbial Communities and Non-Model Systems
- Upstream Processing: Process development and challenges for cell-based products
- Upstream Processing: Microbial Metabolic Engineering
- Upstream Processing: Synthetic Biology and Genome Engineering
- Upstream Processing: High-Throughput Screening and Automation

Downstream Processes

Area Coordinators: Wai Keen Chung Biogen

Dan Bracewell UCL

Elizabeth Goodrich MilliporeSigma

• Research focused on chemistries, approaches and tools used to purify products produced via biopharmaceuticals

Sessions

- Downstream Processing: Advances in Chromatographic Separations for mAbs
- Downstream Processing: Advances in Chromatographic Separations for Novel Antibody Structures and Drug Conjugates
- Downstream Processing: Advances in Chromatographic Separations using Novel Stationary Phases
- Downstream Processing: Non-Chromatography Based Separation of Biomolecules
- Downstream Processing: Membrane-Based Downstream Bioprocessing
- Downstream Processing: High-Throughput Screening and Automation of Downstream Process
 Development
- Downstream Processing: in Silico and Mechanistic Modeling of Downstream Bioseparations
- Downstream Processing: Case Studies in Tech Transfer, Scaleup, and Integrated Process Design
- Downstream Processing: Downstream Processing of Non-Antibody Modalities

Downstream Processing: Advances in Process Analytical Technologies for Measurement and Control

Biomedical Technologies

Area Coordinators: John Kim U Alabama

Maryam Raeeszadeh

-Sarmazdeh Nevada-Reno

Research focused on chemistries used in studying, diagnosing, and treating disease

Sessions

- Biomedical Technologies: Imaging, Diagnostics, and Other Integrative Approaches to Study and Model Diseases
- Biomedical Technologies: Stem Cell Therapy and Regenerative Medicine
- Biomedical Technologies: New Technologies in Cell and Microbiome Engineering
- Biomedical Technologies: New Technologies for the Delivery and Targeting of Therapeutics

Biomolecular and Biophysical Processes

Area Coordinators: Mary Krause BMS

Krishna Mallela CU Denver Cesar Calero Sanofi

 Research focused on the chemical and physical properties of biomolecules and their use in biotechnology

Sessions

- Biomolecular and Biophysical Processes: Challenges in developing novel modalities
- Biomolecular and Biophysical Processes: Protein Developability; Physical and Chemical Stability
- Biomolecular and Biophysical Processes: Protein Aggregation and Immunogenicity
- Biomolecular and Biophysical Processes: Formulation strategies and novel routes of administration
- Biomolecular and Biophysical Processes: Advances in process development and manufacturing of biologic drug products
- Biomolecular and Biophysical Processes: Emerging Biophysical and Analytical Characterization Technologies (BPAC)
- Biomolecular and Biophysical Processes: Protein Structure and Function

Big Data

Area Coordinators: Sandeep Kumar BI

Jim Lalonde Inscripta

How to use big data sets to understand multiunit processes and properties of molecules

Sessions

Big Data: Machine Learning approaches to genome engineering

Big Data: Big data in discovery and development of biopharmaceuticals

Integrated and Continuous Processing

Area Coordinators: Lars Pampel Novartis

Nihal Tugcu Sanofi Tim Tully Pfizer

- Current topics in continuous processing
- Sessions
 - Integrated and Continuous Processing: Implementation: It's happening!
 - Integrated and Continuous Processing: Advances in Perfusion Technologies and Process Development
 - Integrated and Continuous Processing: Advances in Automation, Control and PAT
 - Integrated and Continuous Processing: Integrated and Continuous Downstream Processing

Cell and gene therapy

Area Coordinators: Bill Kelly Villanova

Nooshi Sanaie Kite Pharma Mercedes Segura Avro Bio

- Progress in development, upstream and downstream processing of cell and gene therapies
- Sessions
 - Cell and Gene Therapy: Development and Manufacturing of Cell Therapy Products
 - Cell and Gene Therapy: Development and Manufacturing of Gene therapy and Viral Vector Products
 - Cell and Gene Therapy: Next Generation Modalities in Gene and Cell therapy
 - Cell and Gene Therapy: Characterization of Gene and Cell Therapy Starting and Final Products and Regulatory Perspectives

Protein Engineering

Area Coordinators: Nik Nair Tufts

Zhe Rui Codexis

- Progress in protein engineering
- Sessions
 - Protein Engineering: Protein Conjugates, Fusions, and Formulations
 - Protein Engineering: Protein Engineering for Therapeutic, Diagnostic, and Sensor Applications
 - Protein Engineering: Advances in Protein Engineering Technologies
 - Protein Engineering: Enzyme Engineering and Biocatalysis

COVID Vaccine, therapies, and diagnostics/ Pandemic response

Area Coordinators: Varnika Roy GSK

Shannon Servoss U Arkansas Frank Kotch Pfizer

- Progress in pandemic response in all areas of vaccines, therapies and diagnoatics
- Sessions
 - Covid Vaccines, Therapeutics and Diagnostics: COVID Therapeutics: From Discovery to Super-Accelerated CMC Development.
 - Covid Vaccines, Therapeutics and Diagnostics: COVID Vaccines: From Discovery to the Fastest Vaccine Development in History
 - Covid Vaccines, Therapeutics and Diagnostics: COVID-19 Diagnostics and Detection: Technologies,
 Challenges & the Scale-Up of Testing

 Covid Vaccines, Therapeutics and Diagnostics: How COVID-19 Changed My Research Path: The Good, the Bad, and The Ugly

Rapid Fire and Traditional Poster session

Area Coordinators: Kristin Vallente Merck

Kelsey O'Donnell Amgen

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Area Coordinators: Hadley Sikes MIT

Jonathan Royce Bio-Works Technologies

John Welsh Merck & Co.

• Have an idea for a new business? Pitch it to our panel!