Engineering's Role in Precision Medicine
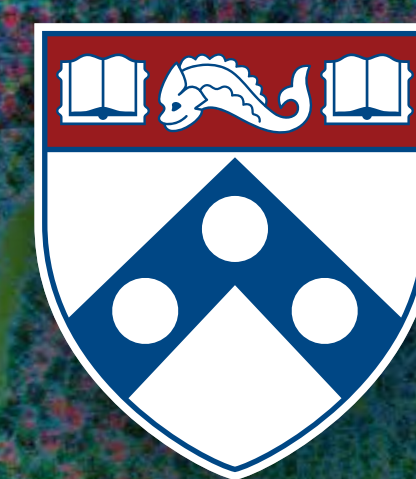
CPE4H
Center for Precision Engineering for Health
UNIVERSITY *of* PENNSYLVANIA

SYMPOSIUM SCHEDULE
SESSIONS HELD IN GLANDT FORUM, SINGH CENTER FOR NANOTECHNOLOGY, UNLESS OTHERWISE NOTED

Friday, November 8, 2024

TIME	TITLE / SPEAKER	LOCATION
7:30 a.m.	Registration and Breakfast	LOBBY, SINGH CENTER
8:00 a.m.	Welcome and Opening Remarks **Daniel A. Hammer**, *University of Pennsylvania, CPE4H Director*	

SESSION 1: TISSUE ENGINEERING

TIME	TITLE / SPEAKER	
8:15 a.m.	*Co-opting developmental programs for precision engineering of synthetic kidney tissue* **Alex Hughes**, *University of Pennsylvania*	
8:35 a.m.	*Identifying local matrix signatures: metabolic labeling in engineered tissues* **Claudia Loebel**, *University of Pennsylvania*	
8:55 a.m.	*Dynamically tunable soft materials platforms to probe and direct tissue regeneration* **Christopher Madl**, *University of Pennsylvania*	
9:15 a.m.	*User-programmable hydrogel biomaterials to probe and direct 4D stem cell fate* **Cole A. DeForest**, *University of Washington at Seattle*	
9:50 a.m.	MORNING COFFEE BREAK	

SESSION 2: DIAGNOSTICS

TIME	TITLE / SPEAKER	
10:20 a.m.	*Material strategies for chronically-stable, high-precision bioelectronic interfaces* **Yuanwen Jiang**, *University of Pennsylvania*	
10:40 a.m.	*Unraveling metabolism across systems and spatial scales* **Yihui Shen**, *University of Pennsylvania*	
11:00 a.m.	*Engineered CRISPR systems for disease treatment and diagnostics* **Xue (Sherry) Gao**, *University of Pennsylvania*	
11:20 a.m.	*In vivo inflammation monitoring via continuous cytokine tracking* **KEYNOTE: Shana Kelley**, *Northwestern University*	
12:05 a.m.	LUNCH	

SESSION 3: PROTEIN DESIGN

TIME	TITLE / SPEAKER	
1:05 p.m.	*Thermal control of cells* **Lukasz Bugaj**, *University of Pennsylvania*	
1:25 p.m.	*Design of programmable protein therapeutics via generative language models* **Pranam Chatterjee**, *Duke University*	
2:00 p.m.	*Immunotherapy for atrial fibrillation using an antibody-siRNA conjugate* **Noor Momin**, *University of Pennsylvania*	
2:20 p.m.	*Protein design using deep learning* **KEYNOTE: David Baker**, *University of Washington at Seattle*	
3:05 p.m.	AFTERNOON COFFEE BREAK & POSTER SESSION	LOBBY, SINGH CENTER

SESSION 4: APPLIED IMMUNOLOGY

TIME	TITLE / SPEAKER	
4:05 p.m.	*High-throughput and high-dimensional profiling of single antigen-specific T cells* **Ning Jenny Jiang**, *University of Pennsylvania*	
4:25 p.m.	*Very Large Scale Microfluidic Integration (VLSMI) for industrial scale generation and discovery of 'designer' hydrogels and lipid nanoparticle formulations* **David Issadore**, *University of Pennsylvania*	
4:45 p.m.	*Lipid nanoparticles for overcoming biological barriers to mRNA delivery* **Michael J. Mitchell**, *University of Pennsylvania*	
5:05 p.m.	*Using the immune system as our new drug paradigm: Lessons from studying T cell exhaustion* **KEYNOTE: John Wherry**, *University of Pennsylvania*	
6:00 p.m.	RECEPTION WITH HORS D'OEUVRES & DRINKS	ONE uCITY SQUARE, FLOOR 10