Bioengineering Cardiovascular Training Program Symposium
Monday May 15, 2023
9:00 – 5:00pm Pacific Time
Orin Smith Auditorium
850 Republican St. Seattle, WA. 98109

9:00am Welcome and Introduction of Keynote Speaker
Michael Regnier, PhD, Director

9:10am Keynote Address
Eleonora Grandi, Ph.D., FHRS, Professor, Department of Pharmacology
Chair, Biophysics Graduate Group Chancellor’s Fellow, University of California Davis
School of Medicine
Sex-specific Predictive Models for Cardiac Health

10:10 Break

10:30am Bioengineering Cardiovascular Training Program Awardees Talks
Ariana Frey, Zheng Lab
Stacking thick perfusable human microvascular grafts to create dense vascularized muscular tissues

Hao Zhou, Scatena Lab & Giachelli Lab
CPB Shear Stress Stimulates Monocytes Adhesion to and Transmigration Through Endothelial Cell Through IL-8 Signaling

Casey Kiyohara, Thomas Lab
Antibody-mediated SARS-CoV-2 entry and conformational regulation

Savannah Bifulco, CardSS Lab
Explainable Machine Learning for AFib: Identifying Risk Factors and Predicting Post-Ablation Recurrence

Kerry Kao, Regnier Lab
A molecular scale investigation of the mechanisms of contractile dysfunction for the hypertrophic cardiomyopathy MYH7 G256E mutation

12:10pm Break
(Feel free to attend the “Monday Noon with ISCRM” seminar, 12:30 – 1:30pm)

1:40pm Bioengineering Cardiovascular Training Program Alumni Talks
Anastasiia Stratiievksa, Ph.D., Research Scientist, Bloodworks Northwest
“How do platelets sense cold? Could one thermosensitive ion channel TRPM8 be responsible?”
Joe Powers, Ph.D. Assistant Professor, Lab Medicine & Pathology and Mechanical Engineering, UW.
"How does your heart feel? Investigating biomechanical signals regulating cardiac structure and function"

2:30pm Career Panel
- Molly Mollica, Ph.D. Assistant Professor, Mechanical Engineering, UMBC
- Meredith Redd Ph.D., Acting Instructor, Bioengineering, UW
- Anastasiia Stratiievska, Ph.D., Research Scientist, Bloodworks Northwest
- Joe Powers, Ph.D., Assistant Professor, Mechanical Engineering, UW

3:30 – 5:00pm Poster session, Atrium of Building C, SL
- Sayantan Jana, Ph.D. Postdoc, Department of Medicine, Gelsolin, an actin remodeling enzyme, is an important mediator of cardiac fibroblast activation and fibrosis
- Agatha Carina Mae, Master's Student, Bioengineering Effects of the MYH7 R369Q dilated cardiomyopathy-causing mutation on myosin crossbridge kinetics
- Zhiying Xie, Graduate Student Quantifying Microvascular Structure in Healthy and Infarcted Rat Hearts Using Optical Coherence Tomography Angiography
- Fan Zhang, Ph.D., Postdoc, Bioengineering Hydrogel composition and stromal cells regulate vascular self-assembly
- Chelsea Gibbs, Graduate Student Changes in Graft-Host Coupling Can Lead to Engraftment Arrhythmia: A Computational Study
- Christian Mandrycky, Ph.D., Postdoc, Bioengineering Embryonic myosin mutations associated with distal arthrogryposis alter the mechanics and maturation of hiPSC derived skeletal muscle
- Max Mahoney-Schaefer, Undergraduate The Effect of Small Molecule Myosin Modulators on ATP Turnover in Pig Cardiac HMM Using Stopped Flow Spectroscopy
- Issac Kim, Undergraduate, Bioengineering Systematic Parameter Analysis for Determination of Reentrant Driver Inducibility
- Jamie Yang, Undergraduate, Bioengineering Optogenetic Suppression of Heart Arrhythmias Resulting from Stem Cell Derived Cardiomyocyte Implantation in Post-Heart Attack Patients
- Dania Ahmed, Undergraduate
Investigating the Role of Desmin Insufficiency in Patient Derived Induced Pluripotent Stem Cell Model of MYH7 Variant Dilated Cardiomyopathy

Åshild Telle, Ph.D., Postdoc
Cell-scale computational modeling of cardiac fibrosis

Abby Nagle, Graduate Student, Bioengineering
Endogenous FRET Measurement of Adhesion Tension in Engineered Human Cells
Topographical Cues Rescue Structural Defects in Non-Contractile Cardiomyocytes

Cherry Leung, Master’s Student, Bioengineering
Developing a FRET-based tension sensor-compatible system for imaging cardiomyocytes under applied strain

Ethan Eldon Mickelson, Graduate Student, Bioengineering
Emergency Resuscitation of Trauma Patients with Potent Oncotic Polymers

Anthony Asencio Graduate Student, Bioengineering
Measuring Myofilament Specific Calcium in Hipsc Cardiomyocytes with Improved Optogenetic Sensors.

Abigail Garcia, Undergraduate Researcher in Chamberlain Lab, Department of Neurology
Effects of MBNL1 Muscle Gene Therapy for Myotonic Dystrophy on Cardiac Function

Trevor Mollot, Graduate Student
A Microneedle Array Device for Improved Cardiac Stem Cell Delivery, Retention, and Distribution

Sonette Steczina, Graduate Student, Bioengineering
Impaired myofibril function in patient-derived cardiomyocytes with the hypertrophic cardiomyopathy-myosin binding protein-C c.772G>A mutation

Kerry Kao, Graduate Student, Bioengineering
A molecular scale investigation of the mechanisms of contractile dysfunction for the hypertrophic cardiomyopathy MYH7 G256E mutation

Casey Kiyohara, Graduate Student, Bioengineering
Antibody-mediated SARS-CoV-2 entry and conformational regulation

Savannah Bifulco, Graduate Student, Bioengineering
Explainable Machine Learning for AFib: Identifying Risk Factors and Predicting Post-Ablation Recurrence

Hao Zhou, Graduate Student, Bioengineering
Cardiopulmonary Bypass shearing in PVC Tubing Results in IL-8 Dependent Monocytic Insult on the Endothelium.

Bioengineering Cardiovascular Training Program (BCTP) is supported by the National Institute of Biomedical Imaging and Bioengineering of the NIH under Award Number T32EB032787 and by the Department of Bioengineering.
Ariana Frey, Graduate Student, Bioengineering

Stacking thick perfusable human microvascular grafts to create dense vascularized muscular tissues

Questions? Please contact: Katie Dickinson, katiejd8@uw.edu
https://sites.uw.edu/bctg/