UW Center for Translational Muscle Research

2025 UW CTMR ANNUAL SYMPOSIUM

Friday, November 21, 2025
9:00am – 5:00 pm Pacific Time
Orin Smith Auditorium (Building C)
UW SLU | 850 Republican St | Seattle, WA, 98109

THEME: Modeling & Metabolism in Muscle Research

8:45 am **Coffee and Tea**, Building C Lobby

9:00 am **General Welcome & Keynote Speaker Introduction**
***Mike Regnier, PhD**, CTMR Director*

9:10 am **Keynote Session**
Daniel Beard, PhD, Professor of Cardiovascular Physiology, Molecular and Integrative Physiology, Internal Medicine, Emergency Medicine, and Biomedical Engineering, Medical School and College of Engineering, University of Michigan Medical School
Title: ***The Vicious Cycle of Metabolic and Mechanical Dysfunction in Heart Failure***

10:10 am **Break**

10:30 am **CTMR Pilot Grant Awardees** (Year 6)
*Moderator: **Dave Beck, PhD**, Co-Core Director, CTMR Quantitative Analysis Core*

Silvia Marchianò, PhD, PharmD, Acting Instructor, Department of Laboratory Medicine & Pathology and **Elaheh Karbassi, PhD**, Acting Instructor, Department of Laboratory Medicine & Pathology
Title: ***Mutational screening of ribonucleotide reductase (RNR) activity for improved cell-based heart regeneration***

Joe Powers, PhD, Assistant Professor Department of Laboratory Medicine & Pathology and Mechanical Engineering
Title: ***Measuring and modeling emergent mechanical behavior of remodeled myocytes due to Filamin C deletion***

Wentao Zhu, PhD, Acting Assistant Professor, Department of Anesthesiology & Pain Medicine
Title: ***A Comprehensive Metabolomics Investigation into the Molecular Mechanisms of ZFYVE1 in a Mouse Model of Heart Failure.***

Matthew Childers, PhD, Research Scientist 4, Department of Bioengineering
Aditi Prabhala, MS, Research Scientist, Division of Cardiology
Title: ***Examining the Mechanisms of the Dilated Cardiomyopathy-Associated Myosin Mutation R369Q***

The *UW Center for Translational Muscle Research* is supported by NIAMS Award Number P30AR074990.

Joel Chamberlain, PhD, Research Associate Professor, Division of Medical Genetics,
Title: ***Cell-derived nanoparticle functional assessment in model cells as a delivery platform for muscular dystrophy antisense therapy***

Shabnam Salimi, MD, MSc, FAHA, Acting Instructor, Department of Anesthesiology & Pain Medicine
Title: ***Mechanistic Insights into DOX-induced Accelerated Aging and Mitigation Strategies***

11:30 am **Lightning talks**
*Moderator: **Joe Powers, PhD**, CTMR Faculty*
Riya Keshri, PhD, Postdoc, Ruohola-Baker Lab
Title: ***AI-designed HER2–FGFR Agonist and designed protein cocktail enhance direct myogenic reprogramming***
Bianca Druta, Undergraduate, Bengtsson Lab
Title: ***Evaluating Drug-Responsive Gene Editing Constructs for In Vivo Gene Therapy of Duchenne Muscular Dystrophy***
Kieran Fruebis, Undergraduate, Regnier Lab
Title: ***Hyper- and Hypocontractility: A Functional Assessment of β-Myosin Mutation E525K in Dilated Cardiomyopathy Models***
Emily Li, Undergraduate, Kollman Lab
Title: ***Characterizing Mutations in Glycogen Storage Disease Type VII***
Benjamin Pryce, PhD, Acting Instructor, Division of Gastroenterology
Title: ***Intercellular Signaling within the Muscle Microenvironment Controls Muscle Wasting in Cachexia***
Sasha Smolgovsky, PhD, Postdoc, Davis Lab
Title: ***Establishing Cardiac Fibroblasts as Orchestrators of Cardiac Decompensation in Familial Dilated Cardiomyopathy***
Tristan Wasley, Graduate Student, Regnier Lab
Title: ***Atomistic Modeling of Cardiac Myosin-Binding Protein-C to Elucidate Its Role in Thick Filament Regulation***
Yejin Kwon, Research Assistant, Berndt Lab
Title: ***Genetically encoded fluorescence lifetime H2O2 sensors for quantitative redox imaging***
Taylor Christopherson, Undergraduate, Tanner Lab, WSU
Title: ***Characterization of sarcomeric protein mutations related to the development of cardiac hypertrophy and cellular disarray in transgenic mice.***

12:00 pm **Lunch Break & Poster Session**, C123A/B, Qdoba Catering provided

2:00 pm **CTMR Investigator Talks**
*Moderator: **Mike Regnier, PhD**, CTMR Director*
Princess Imoukhuede, PhD, Hunter and Dorothy Simpson Endowed Chair and Professor, UW Bioengineering

Title: ***Systems Bioengineering for Vascular Signaling and Women's Health: Mechanisms, Models, and Diagnostics***

Mike Geeves, PhD, Emeritus Professor of Physical Biochemistry, University of Kent

Title: ***Regulation of thick filaments: Seeking the Super Relaxed State (SRX) in myosin and muscle***

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http://ctmr.washington.edu/

3:00 pm **Recent CTMR Pilot Grant Awardees** (Year 7)
*Moderator: **Jen Davis, PhD**, Co-Core Director, CTMR Quantitative Analysis Core*

Shabnam Salimi, MD, MSc, FAHA, Acting Instructor, Department of Anesthesiology & Pain Medicine
Title: ***From Metabolomics to Epigenetics Signatures of Aging Skeletal Muscle and Mice Frailty***

Guy Odom, PhD, Research Associate Professor, Department of Neurology
Title**: *Linking cardiac biophysical performance to protein redesign of micro-utrophin in DMD mice***

Wentao Zhu, PhD, Acting Assistant Professor, Department of Anesthesiology & Pain Medicine
Title: ***Investigating the Metabolic Basis of Chronic Pain in Spinal Muscular Atrophy (SMA) Through Comprehensive Metabolomics Analysis***

Matthew Childers, PhD, Research Scientist 4, Department of Bioengineering
Bert Tanner, PhD, Associate Professor, Washington State University
Title: ***Molecular dynamics simulations of myosin and thick-filament regulatory protein phosphorylation***

Pat Boyle, PhD, Associate Professor, Department of Bioengineering

Joe Powers, PhD, Assistant Professor Department of Laboratory Medicine & Pathology and Mechanical Engineering
Title: ***Effects of filamin C deletion on multiscale structure-function relationships in muscle***

Alec Smith, PhD, Assistant Professor, Department of Neurobiology & Biophysics
Title: ***Investigating the functional effect of b-adrenergic stimulation on CRISPR-edited human iPSC-derived myoblasts harboring ALS-associated mutations***

3:30pm **Break**

3:45 pm **Special Session on Metabolomics in Partnership with Nutrition Obesity Research Center (NORC)**
*Moderator: **Dan Raftery, PhD**, Core Director, CTMR Metabolism*
Ellen Schur, MD, Professor of Medicine, Director of NORC
An Introduction to NORC
Rong Tian, MD, PhD, Professor, Departments of Anesthesiology & Pain Medicine and Bioengineering
Title: ***NAD metabolism in human failing heart***
Karin Bornfeldt, PhD, Professor, Departments of Laboratory Medicine & Pathology and Medicine
Title: ***A Multiomics Approach to Understanding Diabetic Dyslipidemia***

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Scan below for a digital copy of the **ABSTRACT BOOK** of poster presentations

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Questions? Please contact: Katie Mitzelfelt, kmitz@uw.edu

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