



UW Center for Translational Muscle Research

2024 UW CTMR ANNUAL SYMPOSIUM

Tuesday, November 12, 2024

9:00am – 6:30 pm Pacific Time

[Orin Smith Auditorium \(Building C\)](#)

UW, SLU, 850 Republican St. Seattle, WA. 98109 United States

- 8:45 am **Coffee and Tea**, Building C Lobby
- 9:00 am **General Welcome & Introduction to CTMR Cores**
Administrative Core
by [Michael Regnier, PhD](#), Director & [Katie Mitzelfelt, PhD](#), Program Manager
Mechanics and Devices Core
by [Michael Regnier, PhD](#), Core Director
Metabolism Core
by [Dan Raftery, PhD](#), Core Director
Quantitative Analysis Core
by [Jen Davis, PhD](#) & [David Beck, PhD](#), Co-Core Directors
- 9:45 am **CTMR Pilot Grant Awardees** (Year 5)
Moderator: [David Beck, PhD](#), Co-Core Director, CTMR Quantitative Analysis Core
[Shiri Levy, PhD](#), Acting Instructor, Department of Biochemistry
Title: Rejuvenating Aged Muscle Cells Through Epigenetic Reprogramming
[Matthew Campbell, PhD](#), Acting Assistant Professor, Department of Radiology
Title: Decreased force in a human 3D engineered muscle tissue model of aging
[Logan Murphy, PhD](#), Acting Instructor, Department of Physiology & Biophysics
Title: Muscle strength after cervical spinal cord injury
[Matthew Walker, PhD](#), Research Assistant Professor, Department of Anesthesiology & Pain Medicine
Title: Computational approaches to study regulation of mitochondrial RNase P: Implications for muscle mitochondrial biogenesis in heart failure
- 10:45 am **BREAK**

- 11:00 am **Keynote Session Introduction & Moderator**
David Marcinek, PhD, Co-Investigator, CTMR Metabolism Core
- 11:05 am **Keynote Session: Investigators from the Study of Muscle, Mobility, and Aging (SOMMA)**
Steve Cummings, MD, Professor of Medicine, University of California, San Francisco
 Title: *Translational research, cellular epidemiology and SOMMA*
Nancy Glynn, PhD, FACSM, FGSA, Associate Professor of Epidemiology, University of Pittsburgh
 Title: *Perceived and Performance Fatigability in Older Adults: Measurements and Findings from SOMMA*
Paul Coen, PhD, Associate Investigator at the Translational Research Institute, Advent Health Research Institute
 Title: *Mitochondrial energetics and age-related phenotypes in SOMMA*
Panel Discussion, Chair:
Peggy Cawthon, PhD, MPH, Associate Professor, Epidemiology & Biostatistics, University of California, San Francisco
- 12:30 pm **LUNCH BREAK**, C123A/B, boxed lunches provided
- 1:30 pm **Recent CTMR Pilot Grant Awardees (Year 6)**
 Moderator: **Dan Raftery, PhD**, Core Director, CTMR Metabolism
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
 Presented by **Aditi Prabhala**, Master's Student, Bioengineering
 Title: *Examining the Mechanisms of the Dilated Cardiomyopathy-Associated Myosin Mutation R369Q*
Joel Chamberlain, PhD, Research Associate Professor, Division of Medical Genetics, and **Seung Wook Oh, PhD**, Chief Operating Officer, Kinea Bio, Inc.
 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*

2:15 pm

Poster Lightning Talks

Moderator: **Katie Mitzelfelt, PhD**, Program Manager, CTMR

Kyrab Turner, Graduate Student, Tanner Lab, Molecular Biosciences, WSU
Ablation of cardiac myosin binding protein-C induces cell signaling for fibrosis and hypertrophy prior to morphological remodeling of the myocardium

Anna V. Naumova, PhD, Research Associate Professor, Radiology
Circumferential Strain Recovery after Human Cardiomyocyte Transplantation in Minipigs using a Novel Frequency-based Method for Myocardial Tagging and Quantification

Åshild Telle, PhD, Postdoc, Boyle Lab, Bioengineering
Mechanical modeling of cardiac fibrosis with explicit spatial representation of myocyte loss and collagen alignment

Lindsey Anderson, PhD, Acting Assistant Professor, Geriatric Research, VA Puget Sound
Metabolomic Perturbations during Androgen Deprivation Therapy are Associated with Decline in Function but not Lean Mass

Trevor Mollot, Graduate Student, Sniadecki Lab, Bioengineering
Conditions for Optimal Acute Retention of Stem Cell-derived Cardiomyocytes for Intramyocardial Injections in Sprague Dawley Rats

Riya Keshri, PhD, Postdoc, Ruohola-Baker Lab, Biochemistry
A direct reprogramming of fibroblast into skeletal muscles targeting receptor signaling pathways with AI-designed heterofusions

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

Christian Mandrycky, PhD, Postdoc, Mack & Regnier Labs, Bioengineering
Modeling distal arthrogryposis with stem cell derived skeletal muscle

2:45 pm

Poster Break & Scavenger Hunt, Building C Lobby

4:00 pm

CTMR Investigator Talks

Moderator: **Jen Davis, PhD**, Co-Core Director, CTMR Quantitative Analysis Core

Jenny Robinson, PhD, Assistant Professor, Orthopaedic Surgery & Sports Medicine & Mechanical Engineering

Title: *Tools to Interrogate Sex Differences in Estrogen Signaling for Musculoskeletal Applications*

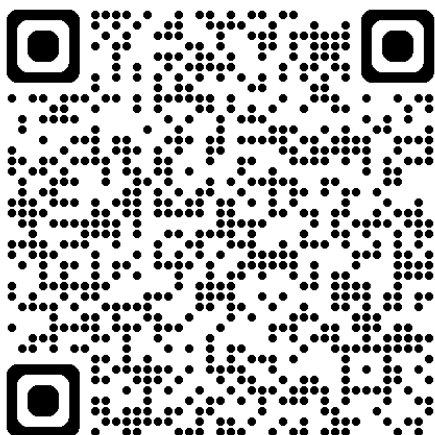
Bert Tanner, PhD, Associate Professor, Washington State University
Title: *Emulating muscle-tendon dynamics via real-time feedback at the onset of contractile activation in single skeletal muscle fibers*

Hichem Tasfaout, PharmD, PhD, Acting Assistant Professor, Department of Neurology
Title: *SIMPLI-GT: A Novel Gene Replacement Method to Express Large Proteins in Musculoskeletal Diseases*

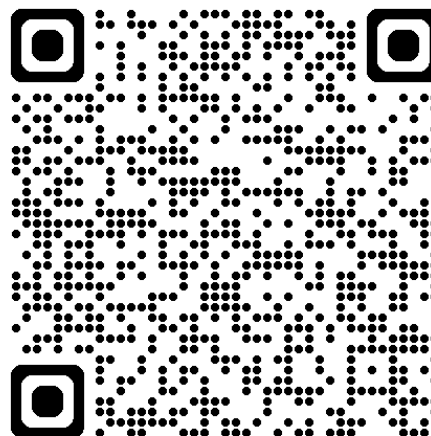
Loretta Little, Managing Director, Washington Research Foundation
Title: *Pathways to Commercialization*

- 5:00 pm **Featured Research Talk**
Introduction & Moderator: [Michael Regnier, PhD](#), Director, CTMR
[Shelly Sakiyama-Elbert, PhD](#), Professor Department of Bioengineering and Vice Dean of Research and Graduate Education, UW School of Medicine
Title: *Strategies for spatial and temporal control of drug delivery to enhance motor nerve regeneration.*
- 5:20 pm **CTMR Renewal Celebration**, Building C Lobby
Speakers:
[Michael Regnier, PhD](#), Director, CTMR
[Shelly Sakiyama-Elbert PhD](#), Vice Dean, UW School of Medicine
[Jihui Yang, PhD](#), Vice Dean, UW College of Engineering
[Jen Davis, PhD](#), Interim Director of The Institute for Stem Cell & Regenerative Medicine, Director of the Center for Cardiovascular Biology
Poster Scavenger Hunt Drawing
- 5:40 pm **Poster Session and Reception**, Building C Lobby
Appetizers, beer, wine, and soft drinks will be served

Scan below for a digital copy
of the schedule



Scan below for a digital copy
of the Abstract Book of poster presentations



Guest WIFI



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

<http://ctmr.washington.edu/>