

Spring 2025 PMI Symposium & Retreat

From Molecules to Movement: Cytoskeletal Insights into Muscle Function and Neuronal Health

Thursday, April 17, 2025

POSTER LIST

#	Title & Authors(s) [presenter in bold] (Presenters should be by their posters: ODD #s – AM session @ 10:15am, EVEN #s – PM session @ 2:30pm)
1.	<i>Unconventional Gliding of Kinetochore-Associated Ndc80 Protein Along Microtubules Under Dragging Force</i> Vladimir Demidov, Fedor Balabin , Ivan Gonchar, Fazly Ataulakhanov, and Ekaterina Grishchuk
2.	<i>Structural-functional characterization of the MIRO1-TRAK1 complex</i> Elana Baltrusaitis , Erika Ravitch
3.	<i>Decoding the Mitophagic Stress Response: a stress-dependent pathway modulating mitochondrial quality control in neurons</i> Bishal Basak , Erika Holzbaur
4.	<i>Cell contractility effects on fibrillar collagen in developing and mature hearts</i> Susanna Belt , Karanvir Saini, Dennis Discher
5.	<i>Investigating the role of KIF1A in neuronal autophagy</i> Carris Borland , Jayne Aiken, Jacob Popolow, Erika Holzbaur
6.	<i>Investigating the molecular mechanisms of thin-filament length regulation at the pointed end</i> Shayna Brotzman , Malgorzata Boczkowska, and Roberto Dominguez
7.	<i>Microtubule depolymerization at kinetochores restricts anaphase spindle elongation</i> Geng-Yuan Chen , Changfeng Deng, David M. Chenoweth, Michael A. Lampson
8.	<i>Novel gene therapy designs for Duchenne Muscular Dystrophy ameliorate disease progression in mouse models</i> Dongwook C. Choe , Coral Kasden, Gargi Ghosh, Tanvi Singh, and Hansell Stedman
9.	<i>TRPML1 Positions Lysosomes to Regulate the Plasticity of Peripheral Astrocytic Processes</i> Maeve Coughlan , Madison Fuller, Serena Chen, & Sandra Maday
10.	<i>Comparative Analysis of iPSC-Derived and Primary Skeletal Myocytes in a Neurovascular Triculture Model</i> Jay Dave , Wenli Yang, D. Kacy Cullen, Suradip Das
11.	<i>Impaired Myofibril Relaxation Across Human HFpEF Subphenotypes</i> Axel Fenwick , Vivek Jani, Weikang Ma, Kavita Sharma, Thomas C. Irving, David A. Kass, Anthony Cammarato
12.	<i>Characterization of stiffness-dependent phosphorylation events downstream of TCR engagement</i> G. Garcia Molina , G. L. Frazer, J. K. Burkhardt
13.	<i>Structural Characterization of TRPML1 Modulation and Lysosomal Tubulation</i> Aria Garrett , Elaine Mihelc, Ruth Pumroy, José Jesús-Peréz, Bridget McVeigh, Vera Moiseenkova-Bell
14.	<i>Differential Modulation of β-Cardiac Myosin Conformations by Cardiomyopathy-Associated Mutations in the Converter Domain</i> Jinghua Ge , Sebastian Duno-Miranda, Arun Kumar Somavarapu, Skylar M.L. Bodt, Ruchi Gautam Sharma, Samantha E. Previs, Angela Ploysangngam, Roger Craig, Raul Padron, David M. Warshaw and Christopher M. Yengo

15.	<i>Model of membrane delivery and flow during cytokinesis</i> Shuhan Geng , Dimitrios Vavylonis
16.	<i>Peri-mitochondrial actin filaments inhibit Parkin assembly via disruption of ER- mitochondrial contact</i> Amrapali Ghosh , Tak Shun Fung, Maite R Zavala, Zuzana Nichtova, Dhaval Kumar Shukal, Marco Tigano, Gyorgy Csordas, Henry N Higgs and Rajarshi Chakrabarti
17.	<i>Interfering with ER Calcium Stores Inhibits Clustering of IRE-1 in Response to ER Stress</i> Bryce Jurkouich , Mingjie Ying, Daniela Ricci, Romie Azor and Yair Argon
18.	<i>Moesin regulates integrin-dependent T cell migration</i> Marie Juzans , Dong-Hun Lee, Daniel A. Hammer, and Janis K. Burkhardt
19.	<i>Leveraging Optogenetic Platforms to Study the Role of RNA Granule Transport in Axon Development</i> Siddharth Karthikeyan , Stephen Tymanskyj, Le Ma
20.	<i>Endurance exercise training partially rescues aged metabolic phenotypes and improves healthspan in mice lacking a functional circadian clock</i> Ronan Lordan , Sarah L. Teegarden, Sean Kelch, Taylor Hollingsworth, Georgios Paschos and Garret A. FitzGerald
21.	<i>In vitro approach to investigate the molecular context-dependent interactions between the Ndc80 complex and its kinetochore receptor CENP-T</i> A. Maiorov , E. Tarasovetc, A. Mukhina, J. E. Mick, F. I. Ataulakhanov, J. G. DeLuca, E. Grishchuk
22.	<i>Breaking Synapses: Defining functional phenotypes of SynGAP1 haploinsufficiency in vitro for gene therapy research</i> Nicolas Marotta , Alex Felix PhD, Jennine Dawicki-McKenna PhD , Benjamin L. Prosser PhD
23.	<i>Map7 coordinates motor recruitment to regulate transport selectivity at branch junctions</i> E. Moese , S. Tymanskyj, L. Ma
24.	<i>Fibroblastogenic Progenitor-Mediated Skeletal Muscle Regeneration After Injury is Disrupted During Whole-Body Weight Loss</i> Natalie Moore , Cindy Lu, Sarah Traynor, Carmen Flesher, David Merrick
25.	<i>Parkin-dependent mitophagy and NF-κB signaling in neurons</i> Neha M. Nataraj , Erika L.F. Holzbaur
26.	<i>Skeletal muscle and adipose tissue-specific roles of ActRIIA/B in regulating body composition and metabolic homeostasis during obesity</i> Elizabeth Nunn , Matthew Gavin, Joe Baur, Paul Titchenell
27.	<i>PAI-1's role in defining the "myospan" of skeletal muscle</i> Indira Paddibhatla , Rohan Wishard, Sogol Sedighi, Axel Fenwick, D. Brian Foster, Mesut Eren, Anthony A. Kalousdian, Douglas E. Vaughan, and Anthony Cammarato
28.	<i>Autophagic stress activates distinct compensatory secretory pathways in neurons</i> Sierra D. Palumbos , Jacob Popolow, Juliet Goldsmith, Erika L.F. Holzbaur
29.	<i>Investigating how DISC1 regulates mitochondrial trafficking</i> Tania A. Perez , Gabrielle Glass, Erika L. F. Holzbaur
30.	<i>Active transport of tRNAs facilitates distributed protein synthesis in muscle</i> Jennifer M. Petrosino , Vasiliki Courelli, Keita Uchida, Barry Cooperman, Alexey Bogush, Benjamin L. Prosser
31.	<i>Investigating the Role of Rubicon in neuronal LRRK2 mediated secretion</i> Jacob Popolow , Peace Oloko, Sierra Palumbos, Bishal Bisak, and Erika Holzbaur
32.	<i>Cardiac tissue balance between contractility and extracellular matrix rigidity</i> K. Saini , S. Cho, M. Tewari, S. Belt, A. Kumar, B. Lee, B. Taichman, A. Jalil, M. Wang, A. Kasznel, K. Yamamoto, N. Kumar, D. Chenoweth, K. Margulies, and D. E. Discher

33.	<i>NPF binding to Arp2 is allosterically linked to the release of ArpC5's N-terminal tail and conformational changes in Arp2/3 complex</i> <u>Andrew J. Saks</u> , Kyle R. Barrie, Grzegorz Rebowksi, and Roberto Dominguez
34.	<i>Microtubule dynamics control directional growth in the heart</i> <u>Emily A. Scarborough</u> , Rani M. Randell, Keita Uchida, Benjamin L. Prosser
35.	<i>An Osteoarthritis Model in Long-Evans Rats: A time-course of tibialis anterior strength and measures of mechanosensitivity and pain behavior</i> <u>Albino G. Schifino</u> , Ph.D., Helen Wilcockson, M.S., Anderson McClain Marshall, Benjamin Binder-Markey, DPT, Ph.D., Marika Williams, DVM, Lara Longobardi, Ph.D.
36.	<i>Investigating platelet activation and aggregation using microfluidic-based experimental approaches</i> <u>Taisia O. Shepeliuk</u> , Rustem I. Litvinov, Praharsa Konde, Michele P. Lambert, John W. Weisel, Fazly I, Ataullakhanov, Ekaterina L. Grishchuk
37.	<i>Novel TUBB2A variant linked to pediatric neurodegeneration leads to hyperstable microtubules and increased mitochondrial respiration</i> <u>Dhyanam P. Shukla</u> , Jesús A. Tintos-Hernández, Xilma R. Ortiz-González
38.	<i>Investigating the protective functions of stress granules in the heart</i> <u>Kathlyene R. Stone</u> , Emily A. Scarborough, Benjamin L. Prosser
39.	<i>Tropomyosin 3.1 inhibits Myosin-19 and is localized to mitochondrially-associated actin</i> <u>Cameron P. Thompson</u> , Luther W. Pollard, Erika L.F. Holzbaur, E. Michael Ostap
40.	<i>Sites of translation initiation relocate following hypertrophic stimulation in cardiomyocytes</i> <u>Keita Uchida</u> , Emily Scarborough, Ben Prosser
41.	<i>Pseudo-acetylation of Lysine 326 and 328 on cardiac actin impairs relaxation and enhances force production in murine cardiomyocytes</i> <u>Rohan Wishard</u> , Kripa Chitre, Axel Fenwick, Aditi Madan, Vivek Jani, Ankit Garg, Michael J. Rynkiewicz, William Lehman, and Anthony Cammarato
42.	<i>Relating tenocyte chromatin states to native tendon physiology using Expansion Microscopy</i> <u>Marcus Woodworth</u> , Tristan McDonnell, and Melike Lakadamyali
43.	<i>Myosin-I Synergizes with Arp2/3 Complex to Enhance Pushing Forces of Branched Actin Networks</i> <u>Mengqi Xu</u> , David M. Rutkowski, Grzegorz Rebowski, Malgorzata Boczkowska, Luther W. Pollard, Roberto Dominguez, Dimitrios Vavylonis, E. Michael Ostap
44.	<i>INF2 regulates IP3-mediated ER calcium release</i> <u>Maite R Zavala</u> , Amrapali Ghosh and Rajarshi Chakrabarti