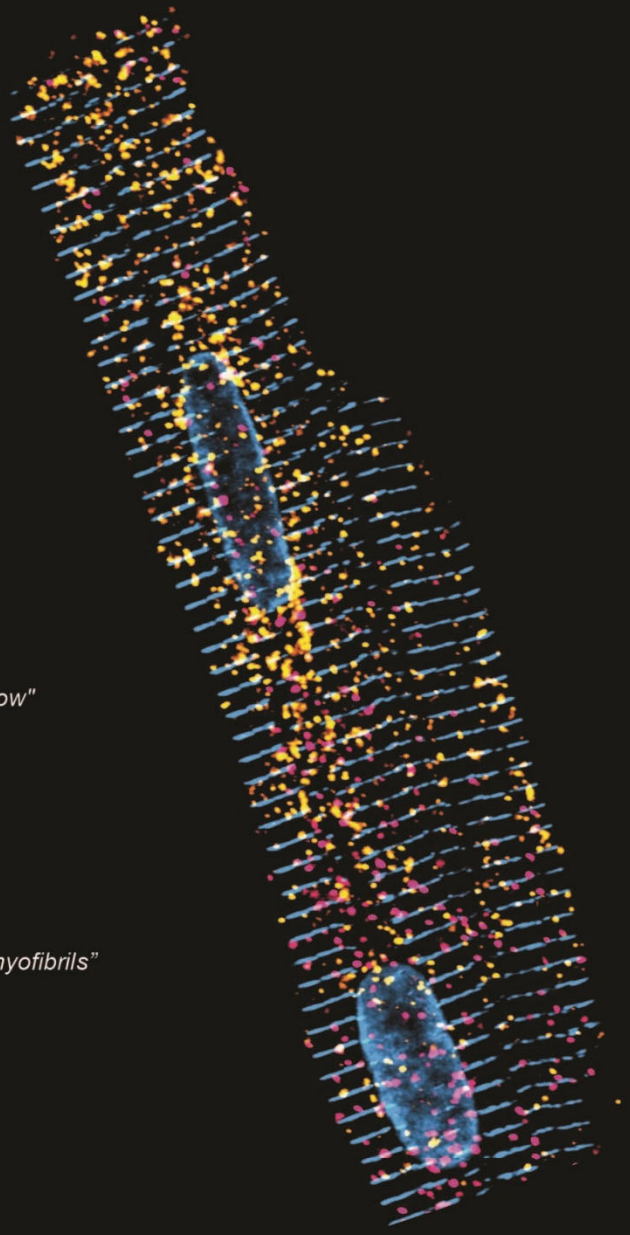
Pennsylvania Muscle Institute
Annual Retreat and Symposium

Perelman School of Medicine
University of Pennsylvania

Formation, Maintenance, and Repair of Skeletal and Cardiac Muscle

November 1, 2022

Arthur H. Rubenstein Auditorium
Smilow Center for Translational Research



Invited Lectures:

Leslie Leinwand, PhD
University of Colorado, Boulder
"Sarcomere dynamics vary between muscle and in health and disease"

Mary Baylies, PhD
Sloan Kettering Institute
"Regulation of the size, number, and function of sarcomeres during drosophila muscle growth"

Dylan Burnette, PhD
Vanderbilt University
"How does a heart grow? A cell biologist wants to know"

Izhak Kehat, MD, PhD
Technion Institute
"Localized translation in cardiomyocytes"

The Sanger Lab
Upstate Medical University
"Assembly and Dynamics of sarcomeric proteins in myofibrils"

William Roman, PhD
Stanford University
"Myofiber self-repair after exercise"

Local Lectures:

Keita Uchida (Prosser Lab)
University of Pennsylvania
"Dynamics of Cardiomyocyte Translation""

Nuoying Ma (Mourkioti Lab)
University of Pennsylvania
"Piezo1 is a key mechanosensor for muscle stem cell morphological state transition and function"

Quentin McAfee (Arany Lab)
University of Pennsylvania
"Truncated titin in human dilated cardiomyopathy"

Scan to see schedule

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Pennsylvania Muscle Institute Annual Retreat and Symposium 2022

"Formation, Maintenance, and Repair of Skeletal and Cardiac Muscle"

Tuesday, November 1, 2022

Location: Arthur H. Rubenstein Auditorium & Commons,
Smilow Center for Translational Research,
3400 Civic Center Blvd., Philadelphia, PA 19104

Organized by E. Michael Ostap and Benjamin Prosser
www.med.upenn.edu/pmi

Sponsored by the Physiological Society of Philadelphia and the Pennsylvania Muscle Institute

Registration

8:30 – 9:00am **Registration Check-in, Breakfast, Coffee, Poster Setup**
Location: Arthur H. Rubenstein Auditorium & Commons*
**Rubenstein Auditorium is located at the Northwest corner of the 1st floor of Smilow (up the escalator from the ground floor)*

9:00 – 9:15am **Welcome and Introduction**
E. Michael Ostap, PhD
Director, Pennsylvania Muscle Institute
Professor of Physiology

Andrew P. Somlyo Honorary Lectures

9:15 – 10:00am **Mary Baylies, PhD**
Sloan Kettering Institute
"Regulation of the size, number, and function of sarcomeres during drosophia muscle growth"

10:00 – 10:30am **PMI Trainees**
Keita Uchida (Prosser Lab)
University of Pennsylvania
"Dynamics of Cardiomyocyte Translation"

Nuoying Ma (Mourkioti Lab)
University of Pennsylvania
"Piezo1 is a key mechanosensor for muscle stem cell morphological state transition and function"

10:30 – 11:00am **Coffee Break, Posters**

11:00 – 11:45am **William Roman, PhD**
Stanford University
"Myofiber self-repair after exercise"

11:45am – 12:30pm **Izhak Kehat, MD, PhD**
Technion-Israel Institute of Technology
"Localized translation in cardiomyocytes"

12:30 – 1:30pm **Lunch, Posters**

Saul Winegrad Honorary Lectures

1:30 – 1:45pm **Yale E. Goldman, MD, PhD**
University of Pennsylvania
Remembering Professor Saul Winegrad

1:45 – 2:30pm **Leslie Leinwand, PhD**
University of Colorado, Boulder
"Sarcomere dynamics vary between muscle and in health and disease"

2:30 – 3:15pm **The Sanger Lab**
Upstate Medical University
"Assembly and Dynamics of sarcomeric proteins in myofibris"

3:15 – 3:45pm **Coffee Break, Posters**

3:45 – 4:00pm **PMI Trainee**
Quentin McAfee (Arany Lab)
University of Pennsylvania
"Truncated titin in human dilated cardiomyopathy"

4:00 – 4:45pm **Dylan Burnette, PhD**
Vanderbilt University
"How does a heart grow? A cell biologist wants to know"

4:45 – 5:30pm **Reception and Posters**

Pennsylvania Muscle Institute

Perelman School of Medicine
University of Pennsylvania

The Pennsylvania Muscle Institute (PMI) is an internationally renowned center for muscle and motility research supported by Penn Medicine with a mission to:

- Discover the mechanisms of muscle function, muscle disease and motile biological systems through innovative and cross-disciplinary research, and to apply these discoveries to new therapies,
- Develop state-of-the art technologies for the study of muscle and motile systems,
- Provide education and training in muscle biology and motility to scientists, physicians, and students.

Research is conducted by its more than 60 laboratories using biophysics, biochemistry, genetics, physiology and ultrastructure to understand cell migration and intracellular transport, molecular motors, cell division, muscle contraction and development, muscle pathologies and therapies targeted to muscle disease. We are prominent in technological and methodological development for these investigations especially in advanced light microscopy, structural spectroscopy, nanotechnology, biochemical kinetics, image processing, molecular biology, and viral gene targeting. Extramural grants, seminars, symposia, and journal clubs are uniquely initiated and supported by the PMI. Additionally, the PMI sponsors vigorous graduate and post-doctoral training activities, including a NIAMS-supported training program in "Muscle Biology and Muscle Disease."

For questions or inquiries about PMI membership, please contact:

E. Michael Ostap, Ph.D.
Director, PMI
Professor of Physiology
Email: ostap@pennmedicine.upenn.edu

Benjamin L. Prosser, Ph.D.
Associate Director, PMI
Associate Professor of Physiology
Email: bpros@pennmedicine.upenn.edu

Pennsylvania Muscle Institute (PMI)
Perelman School of Medicine at the University of Pennsylvania
700A Clinical Research Building
415 Curie Blvd. Philadelphia, PA 19104

Please visit our website: http://www.med.upenn.edu/pmi/

Guest Speaker Biographies

Mary Baylies, PhD

Full Member/Professor in the Developmental Biology Program in Sloan Kettering Institute at the Memorial Sloan Kettering Cancer Center; joint appointment at Weill Cornell School of Biomedical Sciences in the Cell and Developmental Biology Department

Mary Baylies is a Full Member/Professor in the Developmental Biology Program in Sloan Kettering Institute at the Memorial Sloan Kettering Cancer Center; she also holds a joint appointment at Weill Cornell School of Biomedical Sciences in the Cell and Developmental Biology Department. Her laboratory investigates muscle specification, differentiation, growth, homeostasis, and function, both during normal development and in disease contexts. Dr. Baylies earned her Ph.D. at Rockefeller University in 1991 in the lab of Michael Young, where she investigated molecular mechanisms underpinning circadian rhythms. She completed her postdoctoral work at the University of Cambridge with Michael Bate in 1997, researching muscle development, particularly with a view to understanding the intrinsic and extrinsic programs necessary to build a muscle cell. In 1997, Dr. Baylies joined the faculty at Sloan Kettering Institute, where she investigates the molecular machinery required in making and maintaining muscle fibers. Her research is conducted by developing and applying novel genetic, cell biological, imaging, molecular and mathematical approaches, using models including Drosophila and human iPSC-derived Skeletal myoblasts/myofibers. The ultimate aim of her research is to better understand skeletal muscle, and so contribute to the search for therapies for the treatment of muscle diseases including Rhabdomyosarcoma, Nemaline Myopathy, Centronuclear myopathies, and cancer cachexia. The current focus of her work is on how multinucleated muscle cells are formed, how individual muscles achieve particular sizes and shapes, and how muscle subcellular architecture changes during differentiation, muscle function and in diseases. The work from her group has provided new insights to muscle identity through interactions between signal transduction pathways, transcription factors and chromatin regulators; muscle size through identification of mechanisms involved in muscle fusion, growth, and nuclear scaling; and muscle function through study of genes and mechanisms responsible for myonuclear/organelle movement and positioning and sarcomere/ myofibril growth and maturation. Dr. Baylies has 25+ years' experience in muscle biology and has published over 75 papers with NIH funding.

William Roman, PhD

Stanford University

William Roman obtained his PhD from the Paris Descartes University and the Freie University of Berlin working on nuclear positioning during skeletal muscle development. He then performed his post-doctoral training in the laboratory of Pura Munoz in Barcelona studying how myofibers respond to discrete injuries. In parallel, William leads the tissue engineering MyoChip team in Lisbon aimed at supplementing neurons and a vasculature to in vitro muscle culture. He is currently at Stanford University to apply

imaged-based spatial genomic techniques to muscle specimens and will begin his laboratory on intercellular communication within the muscle organ at Monash University in Australia.

Izhak Kehat, MD, PhD

Associate Professor and the head of the Department of Physiology, Biophysics, and System Biology at the Ruth and Bruce Rappaport Faculty of Medicine, Technion – Israel Institute of Technology

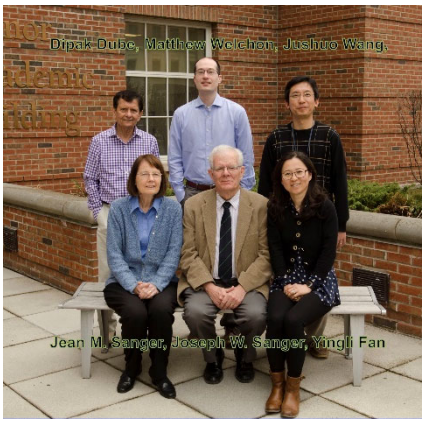
Izhak Kehat MD, PhD received his MD (1997, Suma cum laude) from the Faculty of Medicine, Technion – Israel Institute of Technology. During his PhD (2005), he worked on deriving cardiomyocytes from human embryonic stem cells at the Faculty of Medicine at Technion, under the supervision of Professor Lior Gepstein. He completed a residency in Internal Medicine (2006) at the Rambam Medical Center, Haifa, Israel, and a fellowship in Cardiology at the Rambam Medical Center (2011, in excellence). At Cincinnati Children's Hospital Medical Center (CCHMC, USA) (2006-2010), he was a postdoctoral fellow under the guidance of Prof. Jeffery Molkentin, where he investigated the signals and gene regulation of cardiac hypertrophy. On his return to Israel, he finished a fellowship in clinical Echocardiography, under the supervision of Prof. Yoram Agmon at Rambam Medical Center, department of physiology. Dr. Kehat is an associate professor and the head of the Dept. of Physiology, biophysics, and system biology, at the Ruth and Bruce Rappaport Faculty of Medicine, Technion – Israel Institute of Technology, and a senior cardiologist at the Rambam Medical Center (Haifa, Israel) echocardiography unit. In his research, he aims to understand the structure and function of the sarcomere, the contractile "engine" of muscle and heart, as well as how its deterioration contributes to heart failure. Sarcomere protein components have a short life span; therefore, they need to be replaced constantly. The Kehat lab recently discovered that each sarcomeric 'engine' is maintained by a nano-scale 'factory' in which mRNA is localized, sarcomeric proteins are locally produced, and excess proteins are discarded. The discovery sheds light on the maintenance of sarcomeres and opens up new therapeutic possibilities. The Kehat lab also studies the process of vascular and valve calcifications. Prof. Kehat is a member of the ESC and the AHA, was the secretary of Israel Heart association myocardium and pericardium working group, and is the treasurer of the Israeli sub-section of the ISHR.

Leslie Leinwand, PhD

Molecular, Cellular, and Developmental Biology (MCDB) Distinguished Professor and the Chief Scientific Officer of the BioFrontiers Institute, University of Colorado, Boulder

Leslie Leinwand, PhD is a Molecular, Cellular, and Developmental Biology (MCDB) Distinguished Professor and the Chief Scientific Officer of the BioFrontiers Institute at the University of Colorado Boulder. She received her Bachelor's degree from Cornell University, her PhD from Yale University and did post-doctoral training at Rockefeller University. She joined the faculty at Albert Einstein College of Medicine in New York in 1981 and remained there until moving to Colorado in 1995. She co-founded Myogen, Inc. which was sold to Gilead Pharmaceuticals. More recently, she was a co-founder of Hiberna, Inc, and of MyoKardia, Inc., a

company founded to develop therapeutics for inherited cardiomyopathies. MyoKardia was acquired in 2020 by Bristol Myers Squibb. She is a Fellow of the AAAS, former MERIT Awardee of the NIH, Established Investigator of the American Heart Association and was recently elected to the American Academy of Arts and Sciences and the National Academy for Inventors. She has been honored by the American Heart Association with its Distinguished Scientist Award and its Braunwald Academic Mentorship Award. The interests of Dr. Leinwand's laboratory are the genetics and molecular physiology of inherited diseases of the heart and particularly how biologic sex affects the heart in health and disease. The study of these diseases has required multidisciplinary approaches, involving molecular biology, mouse genetics, mouse cardiac physiology, and the analysis of human tissues. She has also studied the biology of the Burmese python to uncover cardio-protective mechanisms.



The Sanger Lab

SUNY Upstate Medical University

Jean M. Sanger, PhD (Professor, Department of Cell and Developmental Biology); Joseph W. Sanger, PhD (Professor, Department of Cell and Developmental Biology); Yingli Fan, PhD (Research Associate, Department of Cell and Developmental Biology); Dipak K. Dube, PhD (Research Professor of Medicine, Adjunct Research Professor of Department of Cell and Developmental Biology); Matthew Welchon, MS; Jushuo Wang, PhD (Research Assistant Professor, Department of Cell and Developmental Biology).

Our research advances the understanding of fundamental molecular and biochemical mechanisms of cellular function and development. The aims of our training and educational programs are to apply biological knowledge to critical medical problems and empower the next generation of scientists, clinicians, and educators.

Dylan Burnette, PhD

Associate Professor of Cell and Developmental Biology,
Vanderbilt University School of Medicine

Dr. Dylan Burnette has been using high resolution microscopy to study cells for over 20 years. His laboratory at Vanderbilt University focuses on how cells grow and divide. He is interested in how these processes contribute to the function of heart muscle. He trained as a graduate student with Dr. Paul Forscher at Yale University and as a post-doctoral fellow with Dr. Jennifer Lippincott-Schwartz at the National Institutes of Health.

Honorary Lectures

Andrew P. Somlyo, M.D.
(1930 – 2004)

Professor of Physiology and Pathology and founding Director of the Pennsylvania Muscle Institute, Dr. Somlyo was a luminary in the field of smooth muscle physiology. His research (in collaboration with Dr. Avril Somlyo) played a key role in showing that actin-myosin interactions are responsible for force generation in smooth muscle. With colleagues at the University of Pennsylvania, Dr. Somlyo developed electron probe microanalysis to determine local ion concentrations in tissues at nanometer resolution. Additionally, his pioneering work in signaling revealed the mechanisms that regulate contraction of smooth muscle independently of the membrane potential – a process he termed pharmacomechanical coupling. Dr. Somlyo had a passion for science that is evident in the remarkable imprint that he left on the field of muscle physiology and on his students and colleagues. He was also a noted collector of Asian art. Dr. Somlyo left Penn Medicine in 1988 to chair the Department of Molecular Physiology and Biological Physics at the University of Virginia School of Medicine.

Saul Winegrad, M.D.
(1931 - 2020)

Professor Emeritus of Physiology at the Perelman School of Medicine, Dr. Winegrad was a founding member of the Philadelphia muscle-centric group known as the Myo-Bio Club, now the Pennsylvania Muscle Institute. A native Philadelphian, Dr. Winegrad received his BA in chemistry in 1952 and his MD in 1956, both from the University of Pennsylvania. After interning in Boston, Dr. Winegrad held a research fellowship at the NIH. Sir Andrew Huxley invited him to spend a year at University College London, after which Dr. Winegrad joined the Penn faculty as assistant professor of physiology and medicine, in 1962. Seven years later, he became a full professor. He founded and organized the Biomedical Graduate Studies program, which oversees all of Penn Perelman School of Medicine graduate groups. The Saul Winegrad Award for Outstanding Dissertation was established for the graduate groups upon Dr. Winegard's retirement. Dr. Winegrad's research interests were in cardiac muscle physiology at the sub-cellular level, specifically the role of myosin binding protein (MyBP-C) and its phosphorylation in the contractile function of the heart with particular attention to structure-function correlation and interaction with other myofibrillar proteins. He was recognized internationally for his research and was a Fulbright Fellow, National Science Foundation Fellow, Guggenheim Fellow and Fogarty-CNRS International Fellow. He served as vice president for research for the American Heart Association (AHA) and received the National Award of Merit from the AHA.

POSTER EASEL	Presenter Name	Poster Abstract Title	Authors
1	**Adam Fenton**	FMRP granules are positioned along mitochondria to regulate fission in neurons	Adam Fenton, Charles Bond, Melike Lakadamyali, Thomas Jongens, Erika Holzbaur
2	**Aleksandr Maiorov**	Reconstitution of the CENP-C-dependent kinetochore assembly pathway using CENP-C multimers in vitro	Aleksandr Maiorov, Ekaterina V. Tarasovetc, Ekaterina L. Grishchuk
3	**Alisya Anlas**	Mechanical regulation of chromosome loss in lung cancer spheroids	Alisya Anlas, Brandon H. Hayes & Dennis E. Discher
4	**Anastasiia Masaltseva**	Positive feedback loop in platelet dense granule secretion promotes rapid formation of a thrombus shell	Anastasia A. Masaltseva, Taisiya O. Shepelyuk, Fazoil A. Ataullakhanov, Dmitry Yu. Nechipurenko, Ekaterina L. Grishchuk
5	**Anil Chougule**	Mechanisms of Nonmuscle Myosin II Turnover in the Cellular Contractile System	Anil Chougule and Tatyana Svitkina
6	**Anna Kashina**	Differential N-terminal processing of beta and gamma actin	Li Chen, Pavan Vedula, Hsin Yao Tang, Dawei W Dong, Anna S Kashina
7	**Artur Meller**	Drug specificity and affinity are encoded in the probability of cryptic pocket opening among myosin isoforms	Artur Meller, Jeffrey M Lotthammer, Louis G Smith, Borna Novak, Lindsey A Lee, Lina Greenberg, Leslie A Leinwand, Michael G Greenberg, Gregory R Bowman
8	**Bishal Basak**	Modulation of autophagic flux during mitochondrial stress in neurons	Bishal Basak and Erika L.F. Holzbaur
9	**Cameron Thompson**	In vitro Study of Mitochondrial Motility and Myosin-19 Dynamics	Cameron P. Thompson, Erika L. F. Holzbaur, E. Michael Ostap
10	**Changsong Yang**	Actin polymerization promotes invagination of flat clathrin-coated lattices in mammalian cells by pushing at lattice edges	Changsong Yang, Patricia Colosi, Siewert Hugelier, Daniel Zabezhinsky, Melike Lakadamyali and Tatyana Svitkina
11	**Coral Kasden**	Micro-utrophin gene therapy is protective against acute cardiac injury in the mdx muscular dystrophy mouse	Coral Kasden, Christopher Greer, Ben Kozyak, Hansell Stedman
12	**Dan Dou**	Distinct Pathogenic Mutations in LRRK2 Disrupt Axonal Transport of Autophagosomes	Dan Dou, C. Alexander Boecker, Erika L.F. Holzbaur
13	**Daria Amiad Pavlov**	The LINC complex mediates chromatin organization and mRNA localization in the adult cardiomyocyte	Daria Amiad Pavlov, Lauren Testa, Taryn Wilson, Alexey Bogush, Benjamin Prosser
14	**Ekaterina Tarasovetc**	Clustering of scaffolding protein CENP-T activates recruitment of Ndc80 complexes to assemble functionally active kinetochore-like particles	Ekaterina V. Tarasovetc, Gunter B. Sissoko, Iain M. Cheeseman, Ekaterina L. Grishchuk
15	**Elana Baltrusaitis**	Mechanism of MIRO-mediated activity and recruitment of cytoskeletal effector TRAK in mitochondrial dynamics.	Elana Baltrusaitis, Erika Ravitch, Roberto Dominguez
16	**Elizabeth Pruzinsky**	The Role of the Nuclear Receptor Co-regulator RIP140 (Nrip1) in the Control of Muscle Fitness	Elizabeth Pruzinsky, Tsunehisa Yamamoto, Tejvir Khurana, Kirill Batmanov, and Daniel P. Kelly
17	**Emily Scarborough**	RNAs are localized and translated at discrete cardiomyocyte microdomains	Emily A. Scarborough, Keita Uchida, Izhak Kehat and Benjamin L. Prosser
18	**Faviolla Baez-Cruz**	Drosophila Myo1C and Myo1D are high duty ratio motors with very high ADP affinity	Faviolla A. Baez-Cruz, E. Michael Ostap

19	**Fred Fregoso**	Bridging mechanism between Arp2/3 complex and actin filaments explains Cortactin synergy with nucleation promoting factors	Fred E. Fregoso, Peter J. Carman, Malgorzata Boczkowska, Trevor van Eeuwen, and Roberto Dominguez
20	**Jenn Petrosino**	tRNA localization in myocytes is a microtubule-dependent process	Jennifer M. Petrosino1, Keita Uchida, Vasiliki Courelli, Kenneth B Margulies, Michael Ibrahim, Benjamin L. Prosser
21	**Ji-Hyung Lee**	An essential telomere protein for muscle stem cell function and regeneration during homeostasis, disease, and aging	Ji-Hyung Lee and Foteini Mourkioti
22	**Jody Dantzig**	YPet Through the Eyes of mCLIFY	Him Shweta, Kushol Gupta, Yufeng Zhou, Xiaonan Cui, Selene Li1, Yale E. Goldman, and Jody A. Dantzig
23	**Jonathan Edwards**	CFL1-Mediated Actin Remodeling: A Potential Right Ventricular Failure-Specific Therapeutic Target	Jonathan Edwards, MD; Gen Uy; Spencer Williams; Jeffrey Brandimarto, MS; Joshua Rhoades, MS; Ling Lai MD, PhD; Joanna Griffin MS; Kyle Barrie; Kenneth Bedi; Kenneth Margulies, MD; Zoltan Arany, MD, PhD
24	**Joseph Cirilo**	Impact of MYO3A Motor Properties on Actin Protrusion Length and Dynamics	J. A. Cirilo, Jr., X. Liao, B. J. Perrin, C. M. Yengo
25	**Juliet Goldsmith**	Proteomic profiling identifies distinct mechanisms for the autophagic clearance of nucleoid-enriched mitochondria in Parkinson's disease	Juliet Goldsmith, Alban Ordureau, C. Alexander Boecker, Madeleine Arany, J. Wade Harper, Erika Holzbuar
26	**Karanvir Saini**	Tension-suppressed degradation of collagen controls tissue stiffness scaling with fibrillar collagen	K. Saini, S. Cho, M. Tewari, A. Jalil, M. Wang, M. Vashisth, A. Kasznel, K. Yamamoto, D. Chenoweth and D. E. Discher
27	**Keita Uchida**	Translational Activation of Single Cardiomyocytes	Keita Uchida, Emily Scarborough, Jennifer Petrosino, Benjamin Prosser
28	**Li Chen**	Arginylation Regulates Cytoskeleton Organization and Cell Division and Affects Mitochondria in Fission Yeast	Li Chen and Anna Kashina
29	**Luther Pollard**	Ensembles of human Myo19 bound to calmodulin and regulatory light chain drive multi-micron transport	Luther W. Pollard, Stephen M. Coscia, Nicholas J. Palmer, Erika L. F. Holzbaur, Roberto Dominguez and E. Michael Ostap
30	**Mai Wang**	Unraveling differences in copy number variation (CNV) between liquid and solid tumors & tissue models	Wang, Mai., Hayes, B., Phan, S and Discher, D. E.
31	**Marcus Wagner**	Targeting Co-Chaperones of HSP70 To Regulate Sarcomeric and Z-disc Protein Expression	Wagner, M.J., Branscom, G., Alcaro L., Yob, J. and Sharlene M. Day, MD
32	**Mengqi Xu**	Myosin-I facilitates symmetry breaking and promotes the growth of actin 'comet tails'	Xu Mengqi, Pollard LW, Rebowski G, Boczkowska M, Dominguez R, Ostap EM
33	**Michael Tobin**	Gaussian curvature dilutes the nuclear lamina, favoring nuclear rupture, especially at high strain rate	Michael P. Tobin, Charlotte R. Pfeifer, Irena L. Ivanovska, Dennis E. Discher
34	**Natasha Jaiswal**	Role of Skeletal Muscle AKT Signaling in the Regulation of Glucose Homeostasis	Natasha Jaiswal, Matthew Gavin, Louise Lantier, David H. Wasserman and Paul M. Titchenell
35	**Nora Yucel**	Characterizing the mechanisms and role of acetate generation during skeletal muscle glucose disposal	Nora Yucel, Ioana Soaita, Megan Blair, Zoltan Arany
36	**Pavan Vedula**	Actin' Different? Distinct in vivo functions of cytoplasmic actin proteins	Pavan Vedula, Marie Fina, Sergei S. Nikonov, Dawei W. Dong, and Anna Kashina

37	**Peter Carman**	Cryo-EM structures of actin filaments	Peter J. Carman, Kyle R. Barrie, Rachel H. Cerón, Malgorzata Boczkowksa, Grzegorz Rebowski, Roberto Dominguez
38	**Quentin McAfee**	Truncated titin in the myocardial sarcomere in human dilated cardiomyopathy	Quentin McAfee, Christina Chen, Yifan Yang, Matthew Caporizzo, Michael Morley, Apoorva Babu, Sunhye Jeong, Jeffrey Brandimarto, Kenneth C. Bedi Jr, Emily Flam, Joseph Cesare, Thomas P. Cappola, Kenneth Margulies, Benjamin Prosser, Zolt Arany
39	**Rachel Ceron**	A solution to the long-standing problem of actin expression and purification	Rachel H. Ceron, Peter J. Carman, Grzegorz Rebowski, Malgorzata Boczkowska, Robert O. Heuckeroth, and Roberto Dominguez
40	**Ricardo Whitaker**	Dysregulated macrophage phenotype in fibrotic VML injury	Ricardo C. Whitaker and Kara Spiller
41	**Shilong Yang**	Membrane curvature governs the distribution of Piezo1 in live cells	Shilong Yang, Xinwen Miao, Steven Arnold, Boxuan Li, Alan T. Ly, Huan Wang, Matthew Wang, Xiangfu Guo, Medha M. Pathak, Wenting Zhao, Charles D. Cox, Zheng Shi
42	**Sienna Pyle**	The role of telomeric protein repeat binding factor 2 (TRF2) in cardiac development and disease	Sienna Pyle, Foteini Mourkioti
43	**Sierra Palumbos**	Interplay between secretory autophagy and macroautophagy in neurons	Sierra Palumbos, Juliet Goldsmith, Erika Holzbaur
44	**Skylar Bodt**	Dilated cardiomyopathy mutation (E525K) in human beta-cardiac myosin enhances actin-activated phosphate release but stabilizes the auto-inhibited super relaxed state	Skylar Bodt, David V. Rasicci, Rohini Desetty, and Christopher M. Yengo
45	**Srikar Donepudi**	Recruitment of small heat shock proteins to aggregates in myopathy model propagates contractile dysfunction	Srikar Donepudi, Anhelina Volchok, Vedasri Madala, Jana Smuts, Tali Gidalevitz
46	**Stephen Coscia**	An interphase actin wave promotes mitochondrial content mixing and homeostasis	Stephen M. Coscia, Andrew S. Moore, and Erika L. F. Holzbaur
47	**Wentao Wang**	Constructing Synthetic Organelles for Mammalian Cellular Engineering	Wentao Wang, Mikael Garabedian, Rachel Welles, Matthew Good
48	**Xi Chen**	The role of a RhoGEF-anillin module in septin ring disassembly after cytokinesis	Xi Chen and Erfei Bi
49	**Xingyuan Fang**	Investigating the mechanism of APC-mediated branched actin formation at the microtubule tip	Xingyuan Fang, Tatyana M. Svitkina
50	**Yale Goldman**	Understanding the function and mechanism of sex-specific RNA helicases DDX3X and DDX3Y using smFRET	Amber Yanas, Clark Fritsch, Hui Shen, Him Shweta, Michael C. Owens, Yale E. Goldman, Kathy Fange Liu