Schedule	
8:00 AM - 10:00 AM	Arrival, breakfast, poster setup
10:00 AM - 10:15 AM	Welcome
10:15 AM - 11:15 AM	Session 1
11:15 AM - 11:25 AM	Break
11:25 AM - 12:40 PM	Session 2
12:40 PM - 2:00 PM	Lunch, poster viewing, sponsor booths
2:00 PM - 3:15 PM	Session 3
3:15 PM - 3:25 PM	Break
3:25 PM - 4:40 PM	Session 4
4:40 PM - 5:00 PM	Break
5:00 PM - 6:00 PM	Keynote: Dr. Kenneth A. Taylor, Florida State University *The striated muscle thick filament: more complicated than you thought* Introduction by Prof. David Derosier
6:00 PM - 7:30 PM	Dinner, poster viewing, sponsor booths

12 October 2023

8th Annual SoCal CryoEM Symposium

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Session 1		
10:15 AM - 10:30 AM	**Kai Sheng** Scripps	Discovery of RNA folding structrome by assistance of anti-sense oligonucleotides
10:30 AM - 10:45 AM	**Xiyu Dong** Scripps	Assembly of Bacterial Ribosome with Circularly Permuted rRNA
10:45 AM - 11:00 AM	**Baocheng Liu** UCLA	Structure of active human telomerase with telomere shelterinprotein TPP1
11:00 AM - 11:15 AM	**Yao He** UCLA	Structure of Tetrahymena telomerase-bound CST with polymerase α-primase

Session 2		
11:25 AM - 11:40 AM	**James Ferguson** Scripps	Modelangelo in Action: An Integrative Analysis for Rapid Monoclonal Antibody Identification and Characterization from Polyclonal Serum
11:40 AM - 11:55 AM	**Pierre Nottelet** UCSB	Structural characterization of a bacterial antibody-degrading system
11:55 AM - 12:10 PM	**Haoyang Li** LJI	Penetrate the dense glycan shield of Lassa virus --- cryo-EM structures reveal hidden viral vulnerability.
12:10 PM - 12:25 PM	**Fumiaki Ito** USC	Structural basis for differential antagonism of APOBEC3G and APOBEC3H by HIV-1 Vif
12:25 PM - 12:40 PM	**Ravi Yadav** USC	Structural Basis of Complement Receptor Activation

Session 3		
02:00 PM - 02:15 PM	**Rebeccah Warmack** Caltech	Anaerobic cryoEM of the nitrogenase enzymes
02:15 PM - 02:30 PM	**Joshua Hutchings** UCSD	In situ structure and model of the nuclear basket
02:30 PM - 02:45 PM	**Lindsey Young** UCSD	A Generalized Nanogold Tagging System for the Identification of Macromolecules in In Situ Tomograms
02:45 PM - 03:00 PM	**Geoff Perumal** Thermo Fisher Scientific	Thermo Fisher Scientific: Tomo 2.0: Improving cryo lamellae quality through fluorescent targeting approaches and lift out
03:00 PM - 03:15 PM	**Xian Xia** UCLA	Probing dsRNA virus assembly by an integrative approach of cryoEM and cellular cryoET

Session 4		
03:25 PM - 03:40 PM	**Roger Castells-Graells** UCLA	A Designed Imaging Scaffold Breaks the Barrier to High-Resolution Structure Determination of Small Proteins by Cryo-EM
03:40 PM - 03:55 PM	**Anna Shiriaeva** UCLA	MicroED of GPCRs
03:55 PM - 04:10 PM	**Niko Vlahakis** UCLA	Electron beam-induced 3D crystal reorientation
04:10 PM - 04:25 PM	**Kendrick Nguyen** UCSD	Activation and assembly of dynein transport complexes by Lis1
04:25 PM - 04:40 PM	**Jiuwei Liu** UCR	Structural basis for the allosteric regulation and dynamic assembly of DNMT3B

The striated muscle thick filament: more complicated than you thought

Kenneth A. Taylor
Institute of Molecular Biophysics
Florida State University

Striated muscles are composed of two types of filaments. One, the thin filament is primarily composed of the protein actin. The other, the thick filament, is composed of primarily the protein myosin. The structure of the thin filaments has been well described, but our knowledge of the thick filament has lagged far behind. That is changing because of microscope and software advances. Thick filaments were first described in detail in 1963 by Hugh Huxley. In the 1970s a pair of models were proposed to describe the arrangement of myosin tails. In the remaining 40+ years, other than low resolution structures of the myosin head arrangement, almost no progress was made. The first breakthrough was the cryoEM structure of tarantula thick filaments in 2005 followed in 2016 by a subnanometer reconstruction of thick filaments from the flight muscle of the large waterbug, Lethocerus sp., that distinguished between the two models proposed 40 years earlier. Invertebrates have some advantages for myosin filaments because they are helical structures, whereas vertebrate thick filaments are not truly helical. Even that disadvantage has been overcome and now there are several subnanometer resolution structures of vertebrate thick filaments from cardiac muscle under different conditions and from different species using different techniques. This lecture will discuss this progress and what has been learned, what remains to be determined and how it might be determined.

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