

Tuesday, November 8, 2016

- 08:00 – 08:45 **Registration**
- 08:45 – 09:00 **Welcome by Jayant B. Udgaonkar and C. Robert Matthews**

Session 1 – Functional impact of Protein Folding

Chairpersons: Yvonne Chan and Tyler Harmon

- 09:00 – 09:05 **Patricia Clark**
Ignite talk – What can protein function tell us about folding mechanisms, and vice versa?
- 09:05 – 09:25 **Kathryn Geiger**
Trainee talk - Functional instability in Transcription Activator – Like Effectors (TALEs)
- 09:25 – 09:45 **Kapil Dave**
Trainee talk - Effect of fluorescent tags on an enzyme's (PGK) stability
- 09:45 – 10:05 **Luke Wheeler**
Trainee talk - Tracing the evolution of peptide binding specificity in the S100 protein family using phage display and deep sequencing
- 10:05 – 10:30 **Open discussion**
- 10:30 – 11:00 **Tea/Coffee Break**

Session 2 – Intersecting theory and techniques

Chairpersons: Yvonne Chan and Tyler Harmon

- 11:00 – 11:20 **Rohit Pappu**
Tutorial talk – Computational methods to studying protein folding
- 11:20 – 11:25 **Lisa Lapidus**
Ignite talk– Getting to a Predictive Theory of Protein Folding

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- 11:25 – 11:45 **Dipak B. Sanap**
Trainee talk - Interpretation of hydrogen exchange mass spectrometry data using molecular dynamics simulations
- 11:45 – 12:05 **Emily Guinn**
Trainee talk - Using single molecule chemo-mechanical unfolding to probe the effect of environmental conditions on protein folding
- 12:05 – 12:30 **Abani Bhuyan**
PI talk - Internal friction in protein – what is it?
- 12:30 – 13:00 **Open discussion**
- 13:00 –14:30 **Lunch Break**

Session 3 – Protein Dynamics

Chairpersons: Yvonne Chan and Tyler Harmon

- 14:30 – 14:35 **Cathy Royer**
Ignite talk – Pressure for Protein Dynamics: How and Why?
- 14:35 –14:55 **Sureshbabu Nagarajan**
Trainee talk - Dynamics of amyloid beta peptide early aggregation events
- 14:55 –15:15 **Gautam Basu**
PI talk - Direct observation of concerted backbone – side chain dynamics in short linear peptides
- 15:15 –15:35 **Ishita Sengupta**
Trainee Talk-Salt-binding induced oligomerization of the mouse prion protein monitored by real time NMR
- 15:35–16:00 **Open Discussion**
- 16:00 –16:30 **Tea/Coffee Break**
- 16:00 – 19:00 **Poster Session – 1**
- 19:00 –20:30 **Dinner**

Wednesday November 9, 2016

Session 4 – Cooperativity

Chairpersons: Emily Guinn and Katie Geiger-Schuller

- 09:00 – 09:05 **Doug Barrick**
Ignite talk – Ising models and protein folding
- 09:05 – 09:25 **Kelly Jenkins**
Trainee talk - Exploring folding cooperativity of a repeat protein using high pressure fluorescence and NMR
- 09:25 – 09:45 **Santosh K. Jha**
PI talk - Alternatively packed, near – native states of a multi – domain protein
- 09:45 – 10:05 **Tyler Harmon**
Trainee talk - Charge Patterned Sequences Form Helical Structures Through Charge Neutralization
- 10:05 – 10:30 **Open discussion**
- 10:30 – 11:00 **Tea/Coffee Break**

Session 5 – Folding Pathways

Chairpersons: Emily Guinn and Katie Geiger-Schuller

- 11:00– 11:20 **Sagar Kathuria**
Tutorial talk– Microfluidic turbulent mixers, time resolved SAXS and folding intermediates of CheY
- 11:20 – 11:25 **Tobin Sosnick**
Ignite talk – Alternative methods for characterizing the folding transition state
- 11:25 – 11:45 **Krishnananda Chattopadhyay**
PI talk - Subtle changes in the charge distribution at a protein surface can attenuate the competition between early conformational fluctuations and oligomerization

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- 11:45 – 12:05 **Sri Rama Koti Ainavarapu**
PI talk - Structural and mechanistic insights into the copper – modulated unfolding pathways of azurin
- 12:05 – 12:30 **Ranabir Das**
PI talk - Observing a late folding intermediate of ubiquitin at atomic resolution by NMR
- 12:30 – 13:00 **Open discussion**
- 13:00– 14:30 **Lunch Break**

Session 6 – Consequences of Sequence

Chairpersons: Emily Guinn and Katie Geiger-Schuller

- 14:30 – 14:35 **Mike Harms**
Ignite Talk – High order epistasis in protein evolution
- 14:35 – 14:55 **Yvonne Chan**
Trainee talk - Sequence and structure impose limits on the fitness landscape across three TIM barrel orthologs
- 14:55–15:15 **Josh Riback**
Trainee talk - Hydrophobicity modulates IDR collapse and stress granule formation
- 15:15–15:35 **Nilesh Aghera**
Trainee Talk-Homodimeric E.coli Toxin CcdB (Controller of Cell Division or Death B Protein) Folds via Parallel Pathways
- 15:35 – 16:00 **Open discussion**
- 16:00 – 16:30 **Tea/Coffee Break**
- 16:00– 19:00 **Poster Session – 2**
- 19:00– 20:30 **Dinner**

Thursday November 10, 2016

Session 7 – The Unfolded State

Chairperson: Gautam Basu

- 09:00 – 09:30 **Rohit Pappu**
Unfolded states under folding conditions
- 09:30 – 10:00 **Satoshi Takahashi**
*Dynamics of protein folding studied by single molecule
fluorescence measurements at microsecond resolution*
- 10:00– 10:30 **Govardhan Reddy**
Protein collapse and folding
- 10:30– 11:00 **Tea/Coffee Break**

Session 8-Folding Mechanisms- I

Chairperson: Abani K. Bhuyan

- 11:00–11:30 **Tobin Sosnick**
*The dimensions of the denatured state ensemble (DSE) and the
degree to which water is a good solvent*
- 11:30-12:00 **Michael Harms**
*Physical origins and evolutionary effects of high-order epistasis in
genotype-phenotype maps*
- 12:00– 12:30 **Gerhard Hummer**
Native and nonnative interactions in protein folding
- 12:30–13:00 **Shachi Gosavi**
*Understanding the effect of non-folding factors on the folding
landscapes of proteins*
- 13:00 – 14:15 **Lunch Break**

Special Sponsor Talk (GE)

14:15-14:25 **DevChandran**
Continuous Chromatography

Session 9 – Membrane Protein Folding

Chairperson: Ravindra Venkatramani

14:30–15:00 **Tae-Young Yoon**
Mapping the energy landscape for second-stage folding of a single membrane protein

15:00– 15:30 **Paula Booth**
Biological self-assembly – membrane lipids and protein folding

15:30– 16:00 **R. Mahalakshmi**
Balancing protein folding and aggregation by interface residues

16:00 –16:30 **Tea/Coffee Break**

Session 10 – Folding in the Cell

Chairperson: Raghavan Varadarajan

16:30–17:00 **Jane Clarke**
Protein folding –on and off the ribosome

17:00–17:30 **Patricia Clark**
Kinetic effects on protein folding in vivo

17:30 – 18:00 **Lila M. Gierasch**
The allosteric landscape of Hsp70 chaperones—molecular machines that help proteins fold and stay folded

18:00 –18:30 **Hideki Taguchi**
Conversion of a chaperoninGroEL-independent protein into an obligate substrate, and vice versa

19:00 – 20:30 **Dinner**

Friday November 11, 2016

Session 11 – Folding Mechanisms II

Chairperson: Santosh K Jha

- 09:00–09:30 **Thomas Kiefhaber**
The dry molten globule and its role in protein folding and function
- 09:30–10:00 **Catherine Royer**
Pressure-based mapping of protein conformational landscapes
- 10:00–10:30 **Douglas Barrick**
Folding of repeat and globular consensus proteins
- 10:30–11:00 **Tea/Coffee Break**

Session 12 – Folding and Misfolding

Chairperson: Krishnananda Chattopadhyay

- 11:00–11:30 **Michael Woodside**
Effects of an anti-prion pharmacological chaperone on the folding dynamics of single PrP molecules
- 11:30–12:00 **Sheena Radford**
The challenges and opportunities of understanding protein folding and protein misfolding in health and disease
- 12:00–12:30 **Lisa Lapidus**
Monomer dynamics control the first steps of aggregation and folding
- 12:30–13:00 **Jooyoung Lee**
Protein structure prediction/determination by global optimization
- 13:00–14:30 **Lunch Break**

Session 13- Misfolding and aggregation

Chairperson: Kanchan Garai

- 14:30–15:00 **Sudipta Maiti**
A reaction coordinate for amyloid beta misfolding
- 15:00–15:30 **Yuji Goto**
Revisiting supersaturation as a factor determining amyloid fibrillation
- 15:30–16:00 **Samrat Mukhopadhyay**
Water in amyloidogenic intrinsically disordered proteins
- 16:00 –16:30 **Tea/Coffee Break**

Session 14 –Native-State Dynamics

Chairperson: Sri Rama Koti Ainavarapu

- 16:30–17:00 **Tahei Tahara**
Microsecond protein dynamics revealed by two-dimensional fluorescence lifetime correlation spectroscopy
- 17:00–17:30 **Gilad Haran**
Every molecule is special: enzyme molecules in action
- 17:30–18:00 **Athi Naganathan**
A general mechanism for mutation-induced destabilization and modulation of allosteric coupling in proteins
- 18:00–18:30 **Hagen Hofmann**
Observation of nanometer fluctuations in a multifunctional protein complex
- 18:30–18:45 **Conclusion**
- 19:00 – 20:30 **Dinner**