

4th Annual Midwest Conference on Protein Folding, Assembly and Molecular Motions

McKenna Center for Continuing Education – University of Notre Dame

May 10, 2008

7:30 – 8:50 *Coffee, juice, and pastries*

8:50 – 9:00 *Opening Remarks* – Patricia Clark

Aggregation and Assembly of Amyloid

Session Chair: Steven Waldauer, Michigan State University

9:00 – 9:30 *Protein Misfolding Done Right: The Biogenesis of Bacterial Amyloid*
Matthew Chapman

Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

9:30 – 9:50 *N-methyl peptide inhibitors of polyglutamine fibrillogenesis*
Jennifer Lanning¹, Tali Gidalevitz², Richard Morimoto² and Stephen Meredith¹
¹Department of Pathology, University of Chicago and ²Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University

9:50 – 10:10 *Studying Aggregated Polypeptide Structures at the Atomic Level with FRET*
Jyothi L. Digambaranath, Benjamin P. Block, Monika Dembinska, and John M. Finke
Department of Chemistry, Oakland University, Rochester, MI

10:10 – 10:40 *Coffee Break*

Molecular Interfaces and Interactions

Session Chair: Lisa Lapidus, Michigan State University

10:40 – 11:00 *A Dominant Conformational Role for Amino Acid Diversity in Minimalist Protein-Protein Interfaces*
Ryan Gilbreth¹, Kaori Esaki¹, Akiko Koide¹, Sachdev Sidhu² and Shohei Koide¹
¹Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL 60637, and ²Department of Protein Engineering, Genentech Inc., South San Francisco, CA 94080

11:00 – 11:20 *Residual Peptide Dynamics in Class I Major Histocompatibility Complex Proteins*
Francis K. Insaiddo and Brian M. Baker
Department of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN

11:20 – 11:40 *Study of Nucleotide Induced Conformational Changes in the Nucleotide Binding Domain of the Hsp70 Chaperone Homolog Thermus Thermophilus DnaK*
Akash Bhattacharya, Grover N.B. Yip, Eric B. Bertelsen, Alexander V. Kurochkin and Erik R.P. Zuiderweg
Biophysics, University of Michigan, Ann Arbor, MI

11:40 – 12:00 *Structure, Dynamics and Membrane Interaction of the Anchor Domain of the Penicillin-binding Protein 5 of Escherichia coli*
Peter I. O'Daniel, Qicun Shi, Jaroslav Zajicek, Shahriar Mobashery
Department of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, Indiana

12:00 – 1:15 *Lunch*

1:15 – 2:45 *Poster Session*

Protein Folding in the Test Tube and the Cell

Session Chair: Seung Joong Kim, University of Illinois at Urbana-Champaign

2:45 – 3:05 *Folding and secretion of the E. coli Pet autotransporter*
Jonathan P. Renn, Mirco Junker and Patricia L. Clark
Department of Chemistry & Biochemistry, University of Notre Dame, Notre Dame, IN

3:05 – 3:25 *Formation of a structural core in rhodopsin under denaturing conditions*
Arpana Dutta, Judith Klein-Seetharaman
Department of Structural Biology, University of Pittsburgh School of Medicine

3:25 – 3:45 *Quantifying the structural requirements of the folding transition state of Protein A and other systems*
Michael C. Baxa^{1,2}, Karl F. Freed³, and Tobin R. Sosnick^{2,4}
¹Department of Physics, ²Institute for Biophysical Dynamics, ³James Franck Institute and Department of Chemistry, ⁴Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

3:45 – 4:05 *Kinetics of Activation/Inactivation of the Chaperone HdeA and Interactions with Acid-Denatured Model Substrate Proteins*
Timothy L. Tapley^{1,2}, Jan Körner¹, Madhuri Barge¹, Ursula Jakob¹, and James C.A. Bardwell^{1,2}
¹Department of Molecular, Cellular and Developmental Biology, and ²Howard Hughes Medical Institute, University of Michigan, Ann Arbor, MI

4:05 – 4:20 *Coffee Break*

4:20 – 4:50 *Subdomain competition, cooperativity and topological frustration in the folding of CheY-related response regulation proteins*

Charles L. Brooks III

Departments of Chemistry and Biophysics, University of Michigan, Ann Arbor, MI

4:50 – 5:00 *Closing Remarks – Marina Ramirez-Alvarado*

5:00 – 6:30 *Closing Reception*