

Meeting Organizer:

Patricia L. Clark, *University of Notre Dame*

Program Committee:

Connie Jeffery, *University of Illinois at Chicago*

Lisa Lapidus, *Michigan State University*

Conference Venue:

Jordan Hall of Science

University of Notre Dame

574-631-6456

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Department of Chemistry & Biochemistry, University of Notre Dame

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18th Midwest Conference on Protein Folding, Assembly & Molecular Motions

April 26, 2025

Jordan Hall of Science – University of Notre Dame

8:15 – 8:55 *Coffee, juice, and pastries*

8:55 – 9:00 *Opening Remarks* – Patricia L. Clark

Opening Plenary Speaker

9:00 – 9:30 Molecular basis of protein quality control

Smriti Sangwan

Department of Pharmacology, Northwestern University, Chicago, IL 60611

Protein Structure & Stability

Chair: Jacob Diehl (Clark Lab, University of Notre Dame)

9:30 – 9:50 Exploring inner-ear cadherin-23 domain stabilities as a source of elasticity
using HDX-MS and Simulations

Nicholas Bayhi, Quratulayn Ashraf, Marcos Sotomayor, Tobin Sosnick

Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

9:50 – 10:10 Structural and Functional Characterization of *Pseudomonas Aeruginosa* Virulence
Factor AaaA, an Autotransporter with Arginine-Specific Aminopeptidase Activity
Md Shafiqur Rahman, Erandi Jayawardana Arachchige, Katharina Singendonk,
and Kelly H. Kim

Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI
48824, USA

10:10 – 10:25 Coffee Break

10:25 – 11:25 Community Hour

High Throughput Approaches

Chair: Josh Mitchell (Rothstein Lab, Western Michigan University)

11:25 – 11:45 hu.MAP3.0: Atlas of human protein complexes by integration of > 25,000
proteomic experiments

Samantha N. Fischer, Erin R. Claussen, Savvas Kourtis, Sara Sdelci, Sandra
Orchard, Henning Hermjakob, Georg Kustatscher, Kevin Drew

Department of Biological Sciences, University of Illinois at Chicago, Chicago, IL 60607

11:45 – 12:05 Measuring Spycatcher Reactivity in High-Throughput
Tanu Priya, Sara Volz, Karla Yao, Carlos Lazo, Kotaro Tsuboyama, Gabriel Rocklin
Department of Pharmacology, Northwestern University, Chicago, IL 60611

12:05 – 1:20 *Lunch*

1:20 – 1:55 *Poster Session 1: even numbered posters*

1:55 – 2:30 *Poster Session 2: odd numbered posters*

Protein Aggregates & Condensates

Chair: Blessing Oloydye (Brooks Lab, University of Michigan)

2:30 – 2:50 What Triggers Tau Misfolding and Aggregation in Alzheimer's Disease and Related Dementias?
Ekaterina Creamer, Dmitry Malyshka, Austin Allen, Mason Orshoski and Jeff Kuret
Ohio State Biochemistry Program, The Ohio State University, Columbus, OH

2:50 – 3:10 Chaperone Regulation of Biomolecular Condensates in Bacteria
Y Hoang and Anthony Vecchiarelli
Department of Molecular and Cellular Biology, University of Michigan, Ann Arbor, MI

3:10 – 3:30 High-precision spectroscopy of disordered nanoscale Pab1 condensates and molecular chaperones with ABEL-PIE
Kavya Vaidya, Ayesha Ejaz, Kyle Lin, D. Allan Drummond, Allison H. Squires
Pritzker School of Molecular Engineering, University of Chicago, Chicago, IL

3:30 – 3:45 *Coffee Break*

Disrupting & Restoring Protein Function

Chair: Tulika Sharan (Raman Lab, University of Wisconsin-Madison)

3:45 – 4:05 Towards the Discovery of Small Molecules that Restore the Expression and Function of CTD Variants
Jacklyn M. Gallagher, Charles P. Kuntz, Haritha Manoharan, & Jonathan P. Schleich
Department of Chemistry, Purdue University, West Lafayette, IN

4:05 – 4:25 Understanding and disrupting the chaperone-RNR complex
Chathura Paththamperuma, Yevheniia Bushman, Erica Flores and Andrew W. Truman
Department of Biological Sciences, University of North Carolina, Charlotte, NC, USA

Closing Plenary Speaker

4:25 – 4:55 A Massive Membrane Protein Assembly Regulates ATP-Dependent Protein Degradation

Naseer Iqbal, Alireza Ghanbarpour

Department of Biochemistry and Molecular Biophysics, Washington University in St. Louis

4:55 – 5:00 *Closing Remarks – Lisa Lapidus*

5:00 – 6:15 *Closing Reception*