

# Symposium on Lipid Nanodiscs: Applications in Structural Biology and Drug Delivery

(April 30 – May 01, 2026)

National High Magnetic Field Laboratory, FSU, Tallahassee, FL 31320

## April 30 (Thursday)

8:15-8:30 AM Meet & Greet

8:30 AM Opening Remarks by **Dr. Stacey Patterson**, FSU Vice President for Research

### **Session 1** Structural Biology of Membrane Proteins

8:35 AM **Franz Hagn**, Technical University of Munich, Germany, “Lipid nanodiscs as a versatile tool for high-resolution NMR and cryo-EM studies of membrane proteins”

9:00 AM **Huan Bao**, University of Virginia, “Designer nanodiscs to probe and reprogram membrane biology”

9:25 AM **Kimmo Rantalainen**, Scripps Research Institute, San Diego, “Virus glycoprotein nanodiscs in vaccine development”

9:50 AM **Moitrayee Bhattacharyya**, Yale School of Medicine, “Nanoscale analysis of membrane proteins in neurodegeneration and pain”

10:15-10:35 AM Coffee Break

### **Session 2** Biomembranes

10:35 AM **Wayland Cheng**, Washington University, “Scrutinizing the impact of lipid nanodiscs on the structure and dynamics of a ligand-gated ion channel”

11:00 AM **Anirban Banerjee**, NIH, “In vitro Reconstitution of Protein Palmitoyltransferases in Nanodiscs”

11:25 AM **Kallol Gupta**, Yale School of Medicine, “Nanoscale Molecular Cartography of the Cellular Membranes”

11:50 AM **Matthew Eddy**, University of Florida, “How Lipids Modulate GPCR Activation: Insights from MSP Nanodisc Systems”

12:15 AM – 1:00 PM Lunch Break

1:00 – 1:30 PM MagLab Tour

### **Session 3** Biophysical Studies

1:30 PM **John Hackett**, Florida International University, “Applications of small angle scattering to delineate P450-membrane and redox partner interactions”

1:55 PM **Jiansen Jiang**, NIH, “Molecular basis of transport and activity regulation of renal drug transporter OAT1”

2:20 PM **Brandon Ruotolo**, University of Michigan, “*Mass Spectrometry Technologies for the Rapid Evaluation of Membrane Protein Structure and Stability*”

2:45 PM **Michael Marty**, University of Texas Austin, “In vitro Reconstitution of Protein Palmitoyltransferases in Nanodiscs”

3:10 – 3:30 PM Coffee Break

### **Session 4** NMR

3:30 PM **Clemens Glaubitz**, Goethe University, Frankfurt, Germany, “Studying Integral Membrane Proteins within Lipid Bilayers by Solid-state NMR”

3:55 PM **Loren Andreas**, Max Planck Institute, Gottingen, “A viroporin in Inulin-based nanodiscs”

4:20 PM **Gary Lorigan**, Miami University, “Comparative Biophysical Analysis of SMA, SMA Derivatives, and VEMA Nanodiscs for Membrane Protein Applications”

4:45 PM **Libin Ye**, University of South Florida, Tampa, “Trade-offs between MNG-3/CHS and Nanodiscs Reconstitutions in GPCR Function and Structure Studies”

5:10 PM **Birgit Habenstein**, Assembly mechanisms of plant and bacterial proteins into membrane nanodomains”

**5:35 – 7:30 PM Poster Session & Dinner**

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**May 01, 2026 (Friday)**

**Session 5 Bicelles and Polymer Nanodiscs**

9:00 AM **John Katsaras**, ORNL, An overview of bilayered micelles as studied by neutron scattering

9:25 AM **Manuela Zoonens**, Université Paris Cité, CNRS, France, “Amphipols: Versatile tools for the purification and structural analysis of membrane proteins”

9:50 AM **Vladimir Raus**, Czech Academy of Sciences, “PIPOx: A Versatile Synthetic Platform for Designing Copolymers for Membrane Protein Isolation”

**10:15 – 10:30 AM Coffee Break**

**Session 6 Polymer Nanodiscs**

10:30 AM **Gestél C. Kuyler**, Stellenbosch University, South Africa, “Expanding the Polymer Nanodisc Toolkit: Design and Architectural Expansion of the BzAM Series”

10:55 AM **Barry Bruce**, University of Tennessee, Knoxville, “Unlocking Native Membrane Protein Dynamics through Tunable Copolymer Design”

11:20 AM **Debasis Das**, Indian Institute of Science, Bengaluru, India, “Metallo-enzymatic Hydrocarbon Production”

**12:00 noon – 1:00 PM Lunch**

**Session 7 Drug Delivery and Challenging Membrane Systems**

1:00 PM **S. Thayumanavan**, University of Massachusetts Amherst, “Designer Materials for Intracellular Protein Delivery”

1:25 PM **Birgit Strodel**, Heinrich Heine University Düsseldorf, Germany, “Integrating MD Simulations with Nanodisc Technologies: Atomistic Insights into Lipid Binding and Membrane Protein Dynamics”

1:50 PM **Rituparna Samanta**, University of South Florida, Tampa, “Advancing membrane associated protein complex structure prediction and their design”

2:15 PM **Yan Yan Hu**, FSU, “Structure and membrane interactions of Two Helices from Mycobacterium tuberculosis FtsL, One Transmembrane and One Amphipathic”

2:40 PM Poster Prizes

2:50 PM Closing Remarks

**3:00 PM Coffee & Departure**