

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

Day-1 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

Chair: (Rams) Ayyalusamy Ramamoorthy

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

10:15-10:35 AM Coffee Break

Session 2 Biomembranes

Chair: Prof. Elizabeth Stroupe, FSU

10:35 AM **Anirban Banerjee**, NIH, “In vitro Reconstitution of Protein Palmitoyltransferases in Nanodiscs”

11:00 AM **Kallol Gupta**, Yale School of Medicine, “Nanoscale Molecular Cartography of the Cellular Membranes”

11:25 AM **Matthew Eddy**, University of Florida, “How Lipids Modulate GPCR Activation: Insights from MSP Nanodisc Systems”

11:50 AM **John Hackett**, Florida International University, “Applications of small angle scattering to delineate P450-membrane and redox partner interactions”

12:15 AM – 12:45 PM Lunch Break

12:45 – 1:30 PM **MagLab Tour by Ms. Malathy Elumalai, MagLab**

Session 3 Biophysical Studies

Chair: Dr. Lissa Anderson, MagLab

1:30 PM **Jiansen Jiang**, NIH, “Molecular basis of transport and activity regulation of renal drug transporter OAT1”

1:55 PM **Brandon Ruotolo**, University of Michigan, “Mass Spectrometry Technologies for the Rapid Evaluation of Membrane Protein Structure and Stability”

2:20 PM **Michael Marty**, University of Texas Austin, “Design of Fluorescent Membrane Scaffold Proteins for Nanodiscs”

2:45 PM **Lissa Anderson**, ICR Facilities, NHMFL

2:55 PM **Frederic Mentink-Vigier**, Solid-State NMR Facilities, NHMFL

3:05 PM **Sungsool Wi**, “NMR of Nanodiscs and Bicelles”, NHMFL

3:15 – 3:30 PM Coffee Break

Session 4 NMR Structural Studies of Membrane Proteins

Chair: Prof. Yan Yan Hu, FSU

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 **Birgit Habenstein**, University of Bordeaux, CNRS, “Assembly mechanisms of plant and bacterial proteins into membrane nanodomains”

4:45 PM **Gary Lorigan**, Miami University, “Comparative Biophysical Analysis of SMA, SMA Derivatives, and VEMA Nanodiscs for Membrane Protein Applications”

5:10 PM **Libin Ye**, University of South Florida, Tampa, “Trade-offs between MNG-3/CHS and Nanodiscs Reconstitutions in GPCR Function and Structure Studies”

5:35 – 7:30 PM Poster Session, Chair: Dr. Sungsool Wi

Dinner at the MagLab

Day-2 May 01, 2026 (Friday)

Session 5 Bicelles and Polymer Nanodiscs

Chair: Dr. Loren Andreas, Max Planck Institute, Gottingen

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 Nanodiscs and Lipid-Peptide Interface

Chair: Prof. Thai Thayumanavan, University of Massachusetts Amherst

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

11:20 AM **Yan Yan Hu**, FSU, “Structure and membrane interactions of Two Helices from Mycobacterium tuberculosis FtsL, One Transmembrane and One Amphipathic”

11:45 AM **Dongheon Lee**, FAMU-FSU College of Engineering, “Kinetic Monte Carlo simulation of hetero-multivalent interactions between protein and gangliosides on model membranes”

12:10 noon – 1:00 PM Lunch

Session 7 Drug Delivery and Challenging Membrane Systems

Chair: Dr. Vladimir Raus, Czech Academy of Sciences

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

1:25 PM **Birgit Strodel**, Heinrich Heine University of 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 **Mandip Sachdeva**, FAMU, Exosomes based Drug Delivery

2:45 PM Poster Prizes & Closing Remarks