



**The College of Pharmacy and  
The Eppley Institute  
Present:**

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***The Tenth Structural Biology and  
Molecular Biophysics Workshop***

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<b>Time</b>	<b>Location</b>	<b>Workshop Events for Thursday August 1, 2024</b>
8:30am	MSC 3rd floor	Pick up registration materials and set up posters Continental breakfast provided
9:30am	MSC 3002	"Tuning protein function: Rheostats, toggles, and neutrals, oh my!" Dr. Liskin Swint-Kruse (University of Kansas Medical Center)
10:30am	MSC 3002	"Evolution of ion coupling in glutamate transporters " Dr. Olga Boudker (Cornell University, National Academy of Sciences Member)
11:30am	MSC 3002	"Visualizing structural dynamics in the 7SK RNA, a major regulator of transcription elongation" Dr. Catherine Eichhorn (University of Nebraska at Lincoln)
12:30pm	MSC Atrium	Lunch, Posters & Corporate Sponsor Displays Box lunch included
12:45pm	MSC 2018	<i>Xenocs</i> "Laboratory High-Throughput Small Angle X-ray Scattering (SAXS) for Biologics in Solution "
2:00pm	MSC 3002	"Substrate flexibility controls the efficiency of uracil removal by Uracil-DNA glycosylase" Dr. Marcia Levitus (Arizona State University)
3:00pm	MSC 3002	"Biothermodynamics still amazes me" Dr. Tobin Sosnick (University of Chicago )
4:00pm	MSC 3rd floor	Poster Session, Poster Prize (awarded at 5:30) and Corporate Sponsor Displays with refreshments
6:00pm		Workshop concludes.



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**Olga Boudker, Ph.D.**  
*Professor*  
*Department of Physiology and*  
*Biophysics*  
*Cornell University*  
*Howard Hughes Medical*  
*Institute Investigator*  
*National Academy of Sciences*  
*Member*

Olga Boudker completed her undergraduate studies at Novosibirsk State University in the Russian Federation. She then received her M.Sc. and Ph.D. from the Weizmann Institute in Israel and the Johns Hopkins University in Baltimore. During her Ph.D., Boudker focused on the thermodynamics of protein folding and conformational changes, working under the guidance of Ernesto Freire. After a brief postdoctoral period at MIT, she joined the lab of Eric Gouaux at Columbia University, where she started working on the structure and mechanism of glutamate transporters. In 2005, Boudker launched an independent research program at Weill Cornell Medicine, focusing on the structure, mechanism, evolution, and modulation of membrane ion-driven transporters. She rose through the ranks and is now a Professor and Acting Chair of the Department of Physiology and Biophysics. Among other awards, she received the Michael and Kate Barany Young Investigator from the Biophysical Society, the Cole Award from the Membrane Biophysics Subgroup, and the Javitz Neuroscience Award from the National Institute of Neurological Disorders and Stroke. She became an HHMI Investigator in 2015 and was elected to the National Academy of Sciences in 2022.



**Marcia Levitus, Ph.D.**  
*Professor*  
*School of Molecular Sciences*  
*Biodesign Institute*  
*Arizona State University*

Dr. Marcia Levitus is a Professor of Chemistry and Biochemistry at Arizona State University. Her research primarily focuses on single-molecule biophysics and molecular photophysics. Her current projects aim to elucidate the thermodynamics and conformational dynamics of protein-protein and protein-nucleic acid interactions, contributing valuable insights to the field of biophysical chemistry.

She earned her Ph.D. in Chemistry from the University of Buenos Aires, Argentina, in 1998, where she specialized in photochemistry. Following her doctoral studies, she conducted postdoctoral research at UCLA from 1998 to 2000 and at UC Berkeley from 2000 to 2004, focusing on organic photochemistry and single-molecule fluorescence.

Throughout her career, Dr. Levitus has been recognized with several awards, including the NSF CAREER Award in 2007, the Young Investigator Award from the Interamerican Photochemical Society in 2010, and a teaching award from the Student Affiliates of the American Chemical Society at Arizona State University in 2019. She currently serves as editor-in-chief of the leading journal in fluorescence research, *Methods and Applications in Fluorescence*.



**Catherine Eichhorn, Ph.D.**  
*Assistant Professor*  
*University of Nebraska at Lincoln*

Dr. Eichhorn is an Assistant Professor of Chemistry at the University of Nebraska – Lincoln. She received her BA in Chemistry at Bryn Mawr College and Ph.D. in Chemical Biology at the University of Michigan Ann Arbor. Her graduate research with Hashim Al-Hashimi focused on the conformational dynamics and biophysical properties of RNA to understand riboswitch-ligand recognition using solution NMR spectroscopy. Her postdoctoral research with Juli Feigon focused on structure and assembly of the core 7SK ribonucleoprotein complex using solution NMR spectroscopy, X-ray crystallography, and biochemical approaches. In her independent career, her research group works to understand the folding and function of regulatory RNAs and RNPs using integrated structural biology, biophysical, and chemical biology tools.



**Liskin Swint-Kruse, Ph.D.**  
*Department Chair*  
*Biochemistry and Molecular Biology*  
*University of Kansas Medical Center*

Dr. Liskin Swint-Kruse earned a BS in Chemistry from Baylor University and a PhD in Biochemistry from the University of Iowa, where she worked with Dr. Andrew Robertson to assess the relationship between overall protein stability and local structural fluctuations. She then performed post-doctoral work in the W. M. Keck Center for Computational Biology with Drs. Kathleen Matthews (Rice University) and Monte Pettitt (University of Houston). She then moved to the University of Kansas Medical Center, where she is now Professor and Chair in the Department of Biochemistry and Molecular Biology and previously served as the Associate Director of the Interdisciplinary Graduate Program in Biomedical Sciences. The main research interest of the Swint-Kruse laboratory relates to the evolution of protein functional variation, which has implications for advancing personalized medicine and understanding pathogen evolution. Other interests include engineering synthetic transcription repressors for biotechnology and the regulation of central metabolism in  $\gamma$ -proteobacteria.



**Tobin Sosnick, Ph.D.**  
*Department Chair*  
*Biochemistry and Molecular Biology*  
*University of Chicago*

Dr. Sosnick has been the chair of the Department of Biochemistry and Molecular Biology for the past decade. He joined the University of Chicago in 1996. His research is based on the premise that rigorous and innovative studies of basic processes have broad implications in many areas of biological research. Dr. Sosnick received his Ph.D. in low temperature physics from Harvard University in 1989. He transitioned to biophysics during his post-doctoral training with J Trehwella (Los Alamos) and SW Englander (UPENN) where he applied small-angle X-ray scattering, hydrogen exchange, and NMR to study protein folding and dynamics. Current research interests include experimental and computational studies of the function, folding, and dynamics of soluble and membrane proteins including properties of disordered proteins; phase separation, folding of ion channels and mechanobiology, and LOV2-based optogenetics. Prof. Sosnick is co-director of the Graduate Program in Biophysical Sciences, a unique dual-mentored graduate training program he developed.

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