Morgridge & UW–Madison present

the 2026 Hans Ris Lecture



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Seminar

Wednesday Dec. 2nd, 2026 | 3:00 pm – 4:00 pm

Reception to follow seminar at 4pm
H.F. DeLuca Forum, Discovery Building
330 N Orchard St, Madison, WI

Biohub: Accelerating in situ structural cell biology

Understanding how cells function has been at the heart of biological research for nearly 200 years. Historically, cell biology has taken a reductionist approach, breaking the cell down into components that labs study in detail over many years. Driven by technical revolutions in cell biology, structural biology, genetics, and microscopy over the past few decades, these approaches have provided unprecedented insights into the cell's underlying molecular machines and what they do.

Yet, cell function is carried out not by individual components but by hundreds of interlocking homeostatic systems that are dynamically interconnected in space and time. These can range from metabolic processes like amino acid synthesis and energy metabolism to the far more complex control of cell division, cell-cell signaling and tissue differentiation. A central challenge is to integrate this knowledge into a molecular level holistic picture of how cells, and tissues, maintain themselves and how they can respond to internal and external cues, stressors, and disease-causing perturbations.

At the Biohub we believe that the next big revolution in biology will come from combining the power of structural biology with the complexity of cellular biology to observe and analyze dynamic cellular processes in their native context at a molecular level and using next-generation AI world models to integrate this information into a predictive understanding. While we are far able to do this, I will discuss Biohub efforts to develop new technologies focused on enabling in situ structural cell biology.

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Center for Quantitative Cell Imaging
A Collaborative Biological Imaging Hub