



# Multi-scale X-Ray Imaging of Biological Systems

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**10:45 AM**  
**Room 442 Dana Research**  
**Host: Prof Charles DiMarzio, ECE**

## **Abstract**

The capabilities of the Advanced Photon Source, one of the world's premier facilities for x-ray science, are being used for the study of biological systems at length scales from molecules to organisms. Recent advances have greatly expanded the potential of these techniques. Phase-contrast, x-ray fluorescence microscopy, coherent diffraction imaging and x-ray solution scattering each have distinct capabilities for addressing specific biological questions.

In this talk, I will provide specific examples of the application of each of these techniques and I will discuss future directions in the use of x-rays for the study of biological systems.

## **Bio**

Dr. Makowski received his Ph.D. in Electrical Engineering from MIT. His career has included being an Assistant Professor of Biochemistry and Molecular Biophysics at Columbia University, Associate and Full Professor of Physics at Boston University, Professor of Chemistry and Biological Sciences at Florida State University, as well as Director of the Institute of Molecular Physics and the Program in Structural Biology there, Program Director of the Biological Infrastructure and Materials Research programs at NSF, and Director of the Biosciences Division at Argonne National Laboratory. He is currently a Senior Scientist at Argonne and a Senior Fellow of the Computation Institute at the University of Chicago. His research is focused on the development and use of innovative methods for analysis of biophysical data and is highly interdisciplinary, utilizing x-ray and neutron scattering and electron microscopy to address fundamental biological questions.