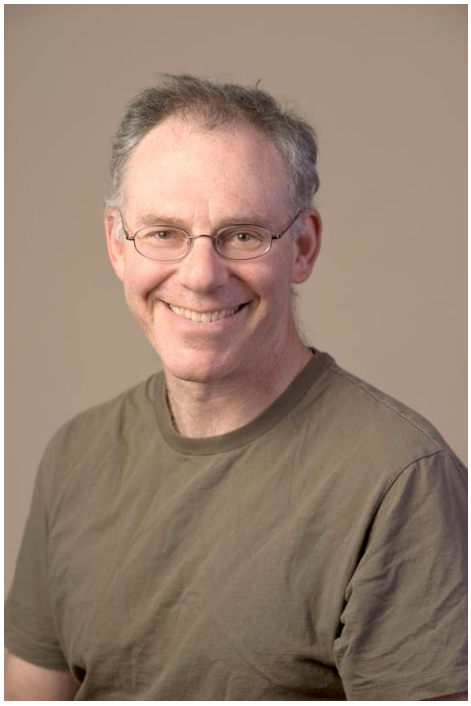
BIOL 145/201

Department of Biological Sciences Seminar Series



"Toward Predictive Understanding In Biology"

Daniel Herschlag, Ph.D.

Professor of Biochemistry
Stanford University School of Medicine

1:30-2:30 PM, Wednesday, April 6, 2022

Hybrid Format | In-Person: Duncan Hall 249
Zoom ID: 833 0935 8529

Abstract: The overarching goal of the Herschlag lab is to understand the chemical and physical principles that underlie biological processes. These principles are needed to understand how biology works and how it evolved, as the fundamental physical and chemical properties of biomolecules enable and constrain biological function and evolution. This understanding will ultimately permit precise and impactful molecular manipulation for engineering and therapy. In particular we focus on predictive models for RNA folding, RNA/protein interactions, and enzyme catalysis. I will describe the conceptual approaches needed to build this predictive understanding and new high-throughput methods that provide 1000s of accurate kinetic and thermodynamic constants and have wide applications. Our progress in these aims, opportunities to utilize these new approaches, and challenges that remain will be discussed.

Biography: Dr. Herschlag has been at Stanford for 30 years, following graduate work at Brandeis and postdoctoral work at the University of Colorado. He has identified new concepts in macromolecular folding, in RNA and protein catalysis, and in molecular evolution, and he has uncovered new principles of cellular RNA processing and organization. His research has been highly collaborative and multi-disciplinary. Dan has been recognized at Stanford and nationally for his mentoring, and is passionate about graduate education and postdoctoral training. Former trainees include faculty at research and teaching institutions, scientists in biotechnology, and individuals who have pursued creative career paths.

SJSU