

# Notre Dame Science

THE CHARLES EDISON LECTURE SERIES

## *An Integrative Biology Approach to Reverse Engineering Living Systems*

**Jordan Hall of Science**

**November 24, 2009**

**Room 101**

**4:00 PM**

### **Biography**

Eric E. Schadt oversees the scientific strategy for Pacific Biosciences, including creating the vision for next-generation applications of the company's technology, contributing to the evolution of Pacific Biosciences' transformative sequencing technology, and playing a key role in the company's strategic relationships. He is also a founding member of Sage Bionetworks—an open access genomics initiative designed to build and support databases and an accessible platform for creating innovative dynamic disease models.

He joined Pacific Biosciences in May 2009 from Rosetta Inpharmatics, a subsidiary of Merck & Co., Inc. in Seattle, where he was Executive Scientific Director of Genetics.

### **Abstract**

To further our understanding of the complex network of molecular and cellular changes that impact disease risk, disease progression, severity, and drug response, multiple dimensions must be considered together. Schadt presents an approach for integrating a diversity of molecular and clinical trait data to uncover models that predict complex system behavior. By integrating diverse types of data on a large scale he demonstrates that some forms of common human diseases are most likely the result of perturbations to specific gene networks that in turn cause changes in the states of other gene networks both within and between tissues that drive biological processes associated with disease. His work has significant implications for drug discovery.

**Eric E. Schadt**

*Chief Scientific Officer  
Pacific Biosciences*



Department of Biological Sciences  
Center for Biocomplexity  
Eck Institute for Global Health

[science.nd.edu/edison](http://science.nd.edu/edison)

