

Contents

Systems Approaches to Dissecting Immunity	1
Alan Diercks and Alan Aderem	
Studying Salmonellae and Yersinia Host–Pathogen Interactions Using Integrated ‘Omics and Modeling	21
Charles Ansong, Brooke L. Deatherage, Daniel Hyduke, Brian Schmidt, Jason E. McDermott, Marcus B. Jones, Sadhana Chauhan, Pep Charusanti, Young-Mo Kim, Ernesto S. Nakayasu, Jie Li, Afshan Kidwai, George Niemann, Roslyn N. Brown, Thomas O. Metz, Kathleen McAteer, Fred Heffron, Scott N. Peterson, Vladimir Motin, Bernhard O. Palsson, Richard D. Smith and Joshua N. Adkins	
ChIP-Seq and the Complexity of Bacterial Transcriptional Regulation	43
James Galagan, Anna Lyubetskaya and Antonio Gomes	
The Role and Contributions of Systems Biology to the Non-Human Primate Model of Influenza Pathogenesis and Vaccinology	69
Carole Baskin	
‘Omics Investigations of HIV and SIV Pathogenesis and Innate Immunity.	87
Robert E. Palermo and Deborah H. Fuller	
Systems Biology of Vaccination in the Elderly	117
Sai S. Duraisingham, Nadine Rouphael, Mary M. Cavanagh, Helder I. Nakaya, Jorg J. Goronzy and Bali Pulendran	

**Systems Biology Analyses to Define Host Responses
to HCV Infection and Therapy** 143
Reneé C. Ireton and Michael Gale Jr.

**Systems Biology Approach for New Target
and Biomarker Identification** 169
I-Ming Wang, David J. Stone, David Nickle, Andrey Loboda,
Oscar Puig and Christopher Roberts

**Insights into Proteomic Immune Cell Signaling
and Communication via Data-Driven Modeling** 201
Kelly F. Benedict and Douglas A. Lauffenburger

Critical Dynamics in Host–Pathogen Systems 235
Arndt G. Benecke