This book provides an overview of key conceptual and molecular technologies being deployed in immunogenomics, followed by detailed evaluations of the impact of genomics and systems biology on important areas such as cancer immunology, autoimmunity, allergy and the response to infection.

Genomics is finally changing from an academic discipline to one with real clinical relevance. The study of immune regulation in response to pathogen invasion, to the presence of malignant or allogeneic tissue and, in some cases, to normal autologous tissue requires techniques that study the behaviour of whole systems in parallel. A genome-wide, systems biology approach is needed to understand the genetic and environmental factors that regulate the healthy immune system and its response to pathogens as well as to malignant cells arising within the body. It will also facilitate determining what goes wrong when the immune system attacks normal host cells, as in autoimmune diseases such as Type 1 diabetes.

This book provides an overview of key conceptual and molecular technologies being deployed in immunogenomics, followed by detailed evaluations of the impact of genomics and systems biology on important areas such as cancer immunology, autoimmunity, allergy and the response to infection. It will be of interest to all those working in immunology, as well as to bioinformaticians and specialists such as oncologists and microbiologists.