With over 200 types of cancer diagnosed to date, researchers the world over have been forced to rapidly update their understanding of the biology of cancer. In fact, only the study of the basic cellular processes, and how these are altered in cancer cells, can ultimately provide a background for rational therapies.

Bringing together the state-of-the-art contributions of international experts, *Systems Biology of Cancer* proposes an ultimate research goal for the whole scientific community: exploiting systems biology to generate in-depth knowledge based on blueprints that are unique to each type of cancer.

Readers are provided with a realistic view of what is known and what is yet to be uncovered on the aberrations in the fundamental biological processes, deregulation of major signaling networks, alterations in major cancers, and the strategies for using the scientific knowledge for effective diagnosis, prognosis, and drug discovery to improve public health.

**Sam Thiagalingam** is an Associate Professor of Genetics & Genomics, Medicine, and Pathology & Laboratory Medicine at the Boston University School of Medicine. He played a major role in establishing an association between genomic instability and loss of heterozygosity (LOH) in human cancers. He was the first to show that SMAD4 inactivation is a critical event during the late stages of colon cancer progression, and sustained TGFβ signaling events are required to maintain epigenetic memory during breast cancer progression. Dr. Thiagalingam also proposed a simple minded multi-modular molecular network (MMMN) cancer progression model as a road map to visualize the various gene alterations in modules of networks of pathways. His long-term goal is to identify novel cancer biomarkers and therapeutic targets by contributing to the “big picture” of interconnected networks of events that mediate cancer progression to metastasis using breast and colon cancers as the model systems.
To my parents

Vanniyan Sambunathan Seenithamby Sisupalapillai Sambasivamoorthy
and

Paramsothy Thangaretnaammal Malar Eliyathamby Sambasivamoorthy
for their righteous living and the respect for freedom of expression.
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The heterogeneity in alterations and the failure to
detect consistent changes in a unique set of gene(s)
or gene products in similar and histologically well
defined neoplasms pose a challenge for the accurate
diagnosis, prognosis and therapy of cancer. Conse-
sequently, there is a need to integrate the individual
observations made in tumor cells derived from
numerous sources using the systems biology
approach to identify a panel of alternate target
genes/gene products as biomarkers for diagnosis
and/or prognosis and as targets for therapy. This goal
could be achieved with efficacy by dissecting alter-
ations in cancer in interconnected modular networks
of pathways represented in multi-modular molecular
networks (MMMN) specific for progression of indi-
vidual cancers. This landmark volume consisting of a
collection of chapters examines the fundamentals of
the molecular basis of the genesis of cancer in parts
devoted to the overall big picture, basic biochemical
events, manifestation of fingerprints of alterations,
units of coordinated events, state of knowledge of
the integrated progression of events for specific
cancers and the future prospects and implications of
the various MMMN cancer progression models in the
fight against cancer.

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