



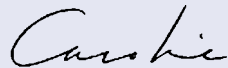
Advances in computing—coupled with increasing use of computing in biology to manage, interpret, and gain knowledge from the vast quantity of data generated by high-throughput biology—are creating extraordinary changes in the fields of biology and medicine. In the last few years, biologists have come to depend on a variety of computational techniques that serve as a crucial part of their scientific toolkit. A key goal of systems biology research is to integrate component data from a variety of fields, including information gained from genetic and protein sequences and biochemical pathways, in order to develop a complete understanding of larger biological systems such as cells and entire organisms. The papers in this issue emphasize the importance of computing and computing tools that are used to advance the systems approach in biology.

In order to succeed, systems biology researchers rely on interdisciplinary teams to collaborate on diverse topics that range from information technology to the behavior of organ systems. Through interdisciplinary efforts, teams of computational scientists and engineers work with biology experts to address important problems and develop new algorithmic techniques that take advantage of increasing computational power. The authors of the papers in this issue of the *IBM Journal of Research and Development* provide examples of this dependency and synergy.

For more than ten years, IBM scientists, working with peers in other industries and academia, have developed and integrated advanced computational hardware and software to provide the infrastructure that enables advances in systems biology. IBM is also famous for providing computational-science assistance to the company's partners. The IBM Healthcare and Life

Sciences Industry unit, the Computational Biology Center in the IBM Research Division, and the Deep Computing unit in the IBM Systems and Technology Group all serve as focal points for these efforts.

I am proud to be associated with this partnership and to support the efforts of the many people at IBM and their colleagues in this exciting and rapidly evolving systems biology field.



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