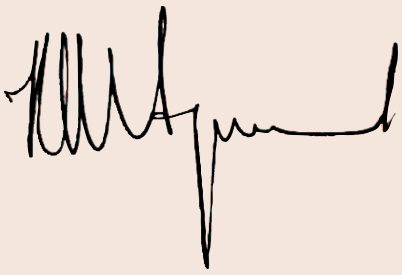
In my introduction to the 2005 special issue of the *IBM Journal of Research and Development* devoted to the Blue Gene® system (Vol. 49, No. 2/3), I noted that the performance, stability, flexibility, and innovative design of the Blue Gene system "opens the door to tackling a wide range of complex problems" and that we were "well on our way to accelerating scientific discovery."

The current issue on Applications of massively parallel systems provides ample evidence that IBM researchers, together with our collaborators, are leveraging the enormous potential of the Blue Gene supercomputer to advance the state of the art of molecular dynamics, geophysical imaging, drug discovery, quantum chromodynamics, nuclear fusion, neuron modeling, climate simulation, and turbulence. It is by no means a stretch to say that the solutions to some of the previously intractable problems described in this special issue can be transformational in industries such as life sciences and energy.

At the same time, the Blue Gene Project continues to drive innovations across the entire systems stack, from architecture and design, compilers, operating systems, parallel algorithms, and integration to the most energy-efficient and usable supercomputers that are the fastest, most cost-effective supercomputers in the world. This issue features the first detailed public look at the next-generation Blue Gene/P™ system, which will lead our industry into petascale computing that involves systems capable of delivering more than 10^{15} floating-point operations per second.

I am proud to be associated with the development of massively parallel systems and the many external partnerships that make this all possible. Please join me in celebrating the continued acceleration of discovery represented by this special issue.



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