

## An Impromptu Tribute to Richard C. Atkinson

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It is a great personal pleasure to have worked with Dick Atkinson for more than 35 years.

Dick's contributions as Chair of the National Research Council's Division of Behavioral and Social Sciences and Education (DBASSE) are further examples of his unending contributions as a scientist, scholar, entrepreneur, university chancellor and president, and national leader in science, engineering and education.

Albert Einstein said, humorously I presume, that compound interest is the most powerful force in the universe. I would like to modify his statement only slightly to suggest that science and engineering are the most powerful forces in the universe. They illuminate the workings of our physical world, enrich our lives far beyond our sense of self, establish principles by which we as humans have organized our societies and our lives, and they have created products and services that generate jobs that give purpose and meaning to our lives.

Dick was grounded in a classical education at the University of Chicago, where he studied Robert Maynard Hutchins' innovative curriculum that focused on the Great Books. However, not fully satisfied, Dick supplemented this curriculum with intense studies in science and mathematics.

Dick has advanced the frontiers of science by developing the most enduring theory of human learning and memory, as well as conducting elegant experiments that have elucidated our understanding of the workings of the brain and the mind.

At Stanford University, Dick held faculty positions in psychology, statistics, engineering and education. He was one of a select group of faculty who worked with Frederick Terman, the Provost of Stanford, to recruit the outstanding faculty that put Stanford on the path to international distinction and created the institutional excellence that is so evident today. Together with Patrick Suppes, Dick developed the first interactive computer system for instruction in mathematics and reading for K-4 students, which has proved to be the prototype for subsequent developments. He was also deeply immersed in science education. And yet, somehow, he found time to co-found a company in the Silicon Valley.

Antoine de Saint Exupery, the French writer and aviator, said, "Perfection is achieved, not when there is nothing left to add, but when there is nothing left to take away." This comment exemplifies Dick, whether in the elegance of his mathematical models, in his prose, or in his manner of speech: he is always clear, concise, and to the point.

Last month, Saul Perlmutter and two colleagues were awarded the Nobel Prize in physics for their discovery that the universe is expanding at an accelerating rate. The force that is driving the acceleration is known as "dark energy." To my mind, Dick Atkinson is the personification of dark energy. He is forever expanding his interests and contributions at an accelerating rate of speed.

Dick's non-scientific contributions have included enabling the Bayh-Dole legislation, which laid the basis for technology transfer as we know it today; creation of the Directorate for Engineering at the National Science Foundation; establishment of the School of Engineering and the School of International Relations and Pacific Studies at the University of California, San Diego; being a leader in electronic publishing of scientific publications; helping to transform San Diego from a quiet navy town into one of the most vibrant science and technology-based intellectual centers and economic regions in the country, which inspired Katherine Graham, the owner and publisher of the Washington Post, to describe this transformation as the "Atkinson Miracle"; creation of the four pioneering multi-disciplinary and multi-campus California Institutes of Science and

Innovation at the University of California; securing the largest increases in state funding for the University of California in recent history; and, reformulating the SAT examination to introduce higher levels of mathematics and the writing sample.

Dick accomplished all this and more, in the face of the human equivalent of “dark matter.” Dark matter is the force, identified by Saul Perlmutter and his colleagues, that is attempting to slow the expansion of the universe. But, just as in our universe, the dark energy that fueled Dick’s drive overcame the countervailing force of human dark matter.

Before I conclude, I would like to acknowledge Rita Atkinson, who has been a colleague and complement to Dick since their days as graduate students at Indiana University. Rita is known for her unparalleled ability to judge the significance of research in the behavioral sciences. She was Dick’s co-author, and later the lead author, of Introduction to Psychology, their college textbook that 30 years ago surpassed Paul Samuelson’s introductory economics textbook as the most widely used textbook in the history of college publishing. Rita is known for her intellectual curiosity, her love of music and art, for her warmth and caring, and for her quick and delightful laugh.

Although Dick may be stepping down as Chair of DBASSE, his interests and contributions will surely continue to accelerate. In view of Dick’s impressive track record to date, I look forward with enthusiasm to what lies ahead!