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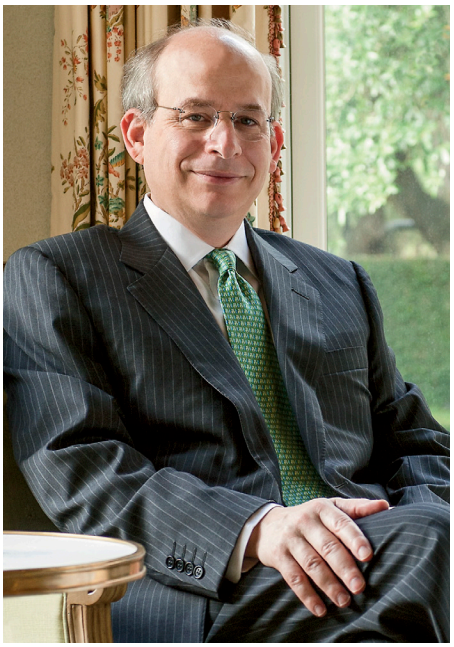
The Long View and the Long Run

One of the features of universities is the long view we take of our mission and activities. That's present in two important ways, namely in both our education and in our research missions. In the education of our students, and particularly our undergraduate education, we are not preparing students for their next job or even for the next five years. Even in this rapidly changing world, we aim to prepare our students for the long run — for the multiple jobs or even careers they will have, and for the different times of their lives, including their retirement.

We hope to play a role in each graduate having a successful, happy and meaningful life. Universities like Rice don't just ask the question of what we can do to assure our students of their next job (although we shouldn't underestimate the importance of that issue), but how we can contribute to each student's lifelong success and satisfaction.

How do you educate for the long term? A recent Gallup-Purdue study identified the "big six" college experiences that make a difference in both employment satisfaction and overall preparation for life after college. The key attributes of an impactful college experience included having professors who inspired students about learning, who cared about the student as a whole person and who served as a mentor — supporting their goals and dreams. Key experiences included a long-term (semester or more) project, an internship that applied classroom knowledge and a high level of engagement in extracurricular activities.

But the long-term view is even more critical to our research mission. In college, I studied the history of science, with a focus on the history of chemistry. My thesis was on a 19th-century German chemist who ended up on the wrong side of the debate over a new structural theory of molecules and in particular organic molecules.



The six-carbon benzene ring was theorized in 1865, and the three-dimensional tetrahedral structure of carbon bonds was first established in 1873. In many ways, these discoveries (and many intervening ones such as the structure of graphite in 1924) laid the foundation for the discovery at Rice University over 100 years later of carbon-60, or buckminsterfullerene ("buckyball"). In turn, that discovery led to the new field of nanotechnology, which is producing at Rice and elsewhere remarkable applications in fields ranging from water purification to medicine to energy.

Even for an individual scientist, a project of discovery can last decades. Rice Professor Pat Reiff, an eminent space physicist, first participated in the formulation of a project idea to explore the magnetopause (which I am sure you know is the boundary between the magnetosphere and the solar wind plasma). One of the projects to emerge from this proposal in 1990 was incorporated in a space mission launched just two months ago, a quarter century after the idea was formulated.

It is part of the nature of human beings to be impatient, to want to solve problems quickly and to move on. Our institutions increasingly, and often unfortunately, reflect diminished attention spans and time horizons. If financial returns do not quickly materialize, many, if not most, of us sell the securities. In many cases, we judge the performance of our politicians over two-year cycles, and that in turn is the view they take. Under many circumstances, after one or two failures, we decide to move on to new people or new projects.

British economist John Maynard Keynes famously remarked that "in the long run, we are all dead." Keynes did not mean to say that we shouldn't be concerned about the long run, but only that we also should be concerned about the impact of the short run. Just because in the long run the economy will find its equilibrium shouldn't lead us away from measures that will stimulate growth and alleviate suffering in the short term.

I don't mean to get into a debate here over Keynesianism, but only to suggest that the mission of great universities, and especially research universities, is biased toward the long run. And that these institutions are essential to the future of our cities, our nations, our society and indeed probably our species (and in fact other species).

Bringing together and supporting people who believe that the discovery of knowledge will in fact make a big difference in the long run, even when we can't yet say what that difference will be, is central to our mission. It took over 200 to 300 years of work in modern chemistry, pursued largely at universities in countries across the globe, to arrive at the buckyball.

Of course, in the spirit of Keynes we must keep our eye on the short-run issues as well — balancing the university's budget, our reputation and rankings, the hypercompetitive environment, and a wide range of urgent and contested issues. But it's ultimately the long run that counts, both for our students and for the world that benefits from our additions to knowledge and understanding.