University futures

In “Science and the Entrepreneurial University” (Issues, Summer 2010), Richard C. Atkinson and Patricia A. Pelfrey remind us of the extent to which the U.S. economy is increasingly driven by science and technology and the central role the U.S. research university plays in producing both new knowledge and human capital. Although policymakers should already be aware that federal support for academic research is critical to economic prosperity, academic leaders would do well to recall that the movement of ideas, products, and processes from universities into application requires diligent guidance.

Atkinson and Pelfrey underscore the imperative for the ongoing evolution of our research universities as well as the continued development of new initiatives to enhance the capacity of these institutions to carry out advanced teaching and high-intensity discovery. The transdisciplinary future technologies development institutes in the University of California system that the authors describe serve as prototypes. The calls for more robust funding, expansion of areas of federal investment, and immigration policies that welcome the best and brightest from around the world equally merit attention.

We can maintain America’s competitive success by working on several fronts simultaneously:

First, advance the integration of universities into coordinated networks of differentiated enterprises, thus expanding our potential to exert impact across a broader swathe of technological areas. Organize research to mount adequate responses at scale and in real time to the challenges that confront us. The need for transdisciplinary organization of teaching and research is obvious, but transinstitutional collaboration among universities, industry, and government both aggregates knowledge and prevents duplication.

Second, accelerate the evolution of institutional and organizational frameworks that facilitate innovation. A slow feedback loop between the economy, Congress, and academia may be to blame, but the pace of scientific understanding and technological adaptation in areas as critical as climate change or renewable energy is lagging. Rigid organizational structures leave us insufficiently adaptive.

Third, rethink the criteria by which we evaluate the contributions of our institutions. Simplistic methodologies that pretend to establish precise rankings abound, but an alternative scheme might evaluate institutions according to their contributions to selected national objectives. We might seek to determine what an institution has done to help build a more sustainable planet, advance the nation’s position in nanotechnology, or gain a fundamental understanding of the origins of the universe. We might even evaluate the impact of universities in aggregate in their capacity to achieve outcomes we desire in our national innovation system.

Finally, we must come to terms with the concept of outcomes. We may be working toward economic security, national security, and positive health outcomes, but we do so in such a generic way that the nature of the entrepreneurial impact of the university remains fuzzy. We need to define its role, measure its impact, and assess its returns to everything from the general stock of knowledge, to advancing specific technological solutions, to advancing our fundamental understanding of who we are and what it means to be human.

MICHAEL M. CROW
President
Arizona State University
Tempe, Arizona