

Building a Technically Skilled Workforce

Partnerships between Community Colleges and Industries Are the Key

Louis Soares and Stephen Steigleder January 2012

The third report in a series on U.S. science and economic competitiveness from the Doing What Works and Science Progress projects at the Center for American Progress

About this series on U.S. science and economic competitiveness

The U.S. Congress in late 2010 asked the Department of Commerce to complete two studies as part of the reauthorization of the America COMPETES Act. The first, which was released on January 6th, 2012, at the Center for American Progress, focuses on U.S. competitiveness and innovation. The second, due to Congress in early 2013, offers specific recommendations for developing a 10-year national innovation and competitiveness strategy.

We applaud the commissioning of these reports but believe we cannot afford to wait that long to take action. That's why we convened in the spring of 2011 the group of experts listed on the following page. We spent two days in wide-ranging discussion about the competitive strengths and weaknesses of our nation's scientific endeavors and our economy, before settling upon the topics that constitute the series of reports we publish here. Each paper in the series looks at a different pillar supporting U.S. science and economic competitiveness in a globally competitive economy:

- “Rewiring the Federal Government for Competitiveness”
- “Economic Intelligence”
- “Universities and Innovation Networks”
- “Manufacturers in Innovation Networks”
- “Building a Technically Skilled Workforce”
- “Immigration for Innovation”

The end result, we believe, is a set of recommendations that the Obama administration and Congress can adopt to help the United States retain its economic and innovation leadership and ensure that all Americans have the opportunity to prosper and flourish now and well into the 21st century.

Many of our recommendations are sure to spark deep resistance in Washington, not least our proposal to reform a number of federal agencies so that our government works more effectively and efficiently in the service of greater U.S. economic competitiveness and innovation. This and other proposals are sure to meet resistance on Capitol Hill, where different congressional committees hold sway over different federal agencies and their policy mandates. That's why we open each of our reports with this one overarching recommendation: Congress and President Obama should appoint a special commission to recommend reforms that are packaged together for a single up-or-down vote in Congress. In this way, thorough-going reform is assured.

This new commission may not adopt some of the proposals put forth in this series on science and economic competitiveness. But we look forward to sharing our vision with policymakers as well as the American people. President Obama gets it right when he says, “To win the future, we will have to out-innovate, out-educate, and out-build” our competitor nations. We need to start now.

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Introduction and summary

For the United States to keep its leadership position in the global economy, our workforce must be able to keep pace with the knowledge and innovation that drives the development of new industries. On one end of the spectrum, that means incubating the world's best scientists and engineers to continue to break down scientific barriers and invent new technologies. But highly educated scientists and engineers are only a small part of the overall workforce, comprising approximately 5 million of the nation's 150 million workers.¹ Our long-term economic competitiveness also depends on boosting the education and technical skills of millions of middle-skill workers for careers in emerging and highgrowth industries such as health care, biotech, nanotech, clean energy, and advanced manufacturing.

These types of technically skilled workers generally boast an associate's degree or industry-recognized postsecondary credential, but unfortunately we are falling woefully short in our efforts to develop a sufficient number of these middle-skill workers. We are currently on pace to encounter a shortage of nearly 5 million workers with postsecondary credentials—such as welders and nursing assistants—by 2018.² Such an eventual shortage of qualified workers to fill these skilled positions will result in slower economic growth and a lower standard of living.

But there is a solution. We already have an underlying system in place—the community college system—that can be modified and scaled up to meet our long-term needs for middle-skill workers. The community college system sits at the crossroads of higher education and the professional world. Community colleges serve a more diverse student body than fouryear colleges. And they also have experience working directly with private sector employers to design and adapt programs to address specific labor market needs.

To produce more of the skilled workers that America will require to be globally competitive, we recommend implementing a competitive grant program to spur innovation in our community college system. More specifically, the grant competition should be used to scale up the availability of community college and industry partnerships that lead to associate's degrees and one-year certificates with labor market value.

Our proposed Community College and Industry Partnership Grant program would encourage bottom-up collaborations between community colleges and groups of businesses or industries. The grants would combine public and private resources to create alternative college education programs that are tightly linked to regional economic development. By partnering with private industry, these programs ensure that academic credentials are directly linked to current job requirements and that program expansion is based on future job openings.

Indeed, these kinds of private-public partnerships are already proving their worth in meeting the needs of three important constituencies:

- Students and workers obtain postsecondary credentials that prepare them for skilled careers that pay middle-class wages
- Local businesses gain employees with specific skills to match their needs
- Regional economies gain a competitive advantage over their global competitors

We detail two of the more successful of these partnerships in this paper. One involves United Parcel Service, the state of Kentucky, and Jefferson Community and Technical College in Louisville. The other features Columbia Gorge Community College in The Dalles, Oregon, alongside Acciona Energy North America (a unit of Spanish energy company Acciona SA), global engineering company Black and Veatch, chip maker Intel, and the U.S. Army Corps of Engineers to develop a pilot curriculum for a renewable energy technology program.

To expand this kind of necessary collaboration through our proposed Community College and Industry Partnership Grant program, we recommend converting the postsecondary portion of the so-called Perkins Career and Technical Education State Grants—approximately \$300 million to \$400 million annually—into a nationwide grant competition. Shifting to a competitive grant would redirect approximately one-third of Perkins CTE funding, which is now targeted toward these same kinds of middle-skill worker training programs, toward programs with a more direct link to regional labor markets. We also believe that a competition to fund this kind of public-private partnerships holds the greatest potential to spur innovation and attract matching funds from the private sector.

In the pages that follow, this paper makes the case for a competitive Community College and Industry Partnership Grant program. We first discuss our projected shortage of skilled workers and then outline a proposal to increase the number of workers earning associate's degrees and one-year credentials via this grant program—an expansion necessary to support long-term innovation and maintain our economic competitiveness.

Our economic competitiveness depends on the technical skills of millions of middle-skill workers in emerging and highgrowth industries from biotech, to clean energy to advanced manufacturing.

About the Center for American Progress

The Center for American Progress is a nonpartisan research and educational institute dedicated to promoting a strong, just and free America that ensures opportunity for all. We believe that Americans are bound together by a common commitment to these values and we aspire to ensure that our national policies reflect these values. We work to find progressive and pragmatic solutions to significant domestic and international problems and develop policy proposals that foster a government that is “of the people, by the people, and for the people.”

Center for American Progress



About Science Progress

Science Progress, a project of the Center for American Progress, is designed to improve public understanding of science and technology and to showcase exciting, progressive ideas about the many ways in which government and citizens can leverage innovation for the common good. Since its inception in the fall of 2007, Science Progress has helped shape the conversation about our country's investment in science.

science progress

About Doing What Works

CAP's Doing What Works project promotes government reform to efficiently allocate scarce resources and achieve greater results for the American people. This project specifically has three key objectives:

- Eliminating or redesigning misguided spending programs and tax expenditures, focused on priority areas such as health care, energy, and education
- Boosting government productivity by streamlining management and strengthening operations in the areas of human resources, information technology, and procurement
- Building a foundation for smarter decision-making by enhancing transparency and performance measurement and evaluation

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