

Trustees, Innovation, and Pathways to the Future of Work

Amid a surge in scientific and technological innovation, the community college sector is needed more than ever.

By Shalin Jyotishi



THERE HAS NEVER BEEN A MORE IMPORTANT TIME for community college trustees to understand and support their institutions' contributions to science and technology-based economic development, emerging technology sectors, and regional innovation ecosystems. Industrial policy is back in the United States, and the community college sector is needed more than ever before.

Scientific and technological innovation spurred by federal and private investments in R&D and economic development efforts is catalyzing a sea of job creation, elimination, and augmentation nationwide. Community colleges will be critical to reskilling and upskilling incumbent workers, expanding pathways for young people beginning their careers, and meeting labor market needs in ways that also diversify the workforce and the jobs that will comprise the future of work.

Community colleges have always been pivotal in providing accessible, affordable, and workforce-oriented career preparation in healthcare, skilled trades, manufacturing, and transportation industries. But all across the country, community colleges are also evolving to meet the workforce needs of the future of work — jobs and industries catalyzed and shaped by emerging technologies.

Today, community colleges have expanded customized training, certificates, associate degrees, apprenticeships, and even applied baccalaureates (available in 24 states) tailored to opening doors to jobs in industries incubated and shaped by artificial intelligence, autonomous vehicles, biotechnology, green energy, and advanced manufacturing — and, as a result, creating inclusive pathways to careers that define the skilled technical workforce for the jobs of today and tomorrow.

The role of community colleges in the innovation economy will only grow due to a massive influx of federal investments from the bipartisan CHIPS & Science Act, alongside the Bipartisan Infrastructure Law and the Inflation Reduction Act. These bills have catalyzed new funding opportunities and the need for community college partnerships, job training, and sector strategy around emerging technology fields.

Notably, CHIPS created the first new arm at the U.S. National Science Foundation in over thirty years — the Technology, Innovation, and Partnerships Directorate. Under the new division, NSF has significantly expanded funding for community colleges in emerging technology fields, building on the successes of NSF's Advanced Technological Education program, which has been in operation since 1994.

The more trustees understand these industrial policy investments and how their states and economies can leverage their funds, the better positioned they will be to help realize the promise of the innovation economy for students. New America provides an overview of these new programs in a recent ACCT in the Know podcast episode.

Why trustees are critical for the community college in the innovation economy

While presidents, deans, workforce leaders, and faculty all have critical roles in unlocking equitable pathways to good jobs resulting from R&D investments, trustees have an especially important role to play.

First, as stewards of an institution, trustees can partner with a president and leadership to take a “forest view” of the college's offerings and their alignment with the region's economic development goals. Depending on state and local policies for college governance, trustees might be elected political appointees or otherwise have political, business, and community ties that could help reinforce their colleges' tether to the needs of their local economy.

Second, trustees offer colleges stability in a time of turbulence. Presidential turnover and retention are becoming a growing problem for all higher education institutions, including community colleges. The latest analysis of the state of higher education presidents conducted by the American Council on Education in 2023 found the lowest tenure length since the association began tracking such data in 2006. The study found that a majority of presidents don't think they will be in their current role in five years — they eye exit opportunities in consulting, non-profits, or returning to faculty ranks.

Generational transitions will also impact college leadership. According to a recent survey from the American Association of Community Colleges, more than half of sitting community college leaders indicate they plan to transition out of their position within the next five years, and one-third expect to retire in that timeframe.

Faculty and staff, too, are in a period of transition. A 2022 survey from the College and University Professional Association for Human Resources found that more than half of surveyed higher ed workers plan to leave their roles. An EAB analysis has found that community colleges have faced a 13% staff decline from 2020-2022, resulting in failed searches, difficulty filling part-time positions, and shortages in student services positions.

That leaves trustees among the last lines of defense to help a college take a long-term perspective and ground itself in times of turnover and change. That viewpoint is especially valuable when considering technology-based economic development predicated on investments in emerging technology sectors and the innovation economy. Silicon Valley wasn't built in a day, nor will new innovation hubs be catalyzed solely by federal investments, the AI revolution, or other future technology-driven paradigm shifts.

Trustees have a critical role to play in understanding, supporting, and advocating for their institutions' roles in job training relating to emerging technologies and to excel as partners in regional innovation ecosystems and technology-based economic development to grow and retain high-paying jobs.

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What trustees and colleges can do: Three case studies

New America's Future of Work and Innovation Economy is dedicated to the study and support of community colleges in technology-based economic development and for job training in evolving and advanced technology sectors. We built on an earlier ACCT In the Know podcast episode and undertook a series of interviews of trustees of three community colleges on the leading edge as workforce partners for the innovation economy — MiraCosta College in California, Miami Dade College in Florida, and Harper College in Illinois. Our conversations focused on the colleges' work and what trustees could do to support their college's role in regional innovation ecosystems.

First, I spoke with Frank Merchant, a MiraCosta trustee since 2015, to learn about a capacity-building effort MiraCosta undertook to better prepare the college for the future of work.

Situated in the southern California biotechnology hub, MiraCosta College is a recognized leader in education in emerging sectors. For example, in 2022, MiraCosta launched the nation's first community college baccalaureate in biomanufacturing to meet the workforce needs of Fortune 500 biotechnology giants like Pfizer, Abbott Laboratories, and Thermo Fisher Scientific. MiraCosta was one of the first grantees of NSF's CHIPS-enabled new Experiential Learning for Emerging and Novel Technologies (ExLENT) program, which it is using to scale internships and apprenticeships in the biomanufacturing and microelectronics sector. But MiraCosta's foresight has less to do with chance and more to do with strategy.

In 2019, MiraCosta College partnered with the Institute for the Future, a Palo Alto-based non-profit, to undertake an institution-wide training in "futurist thinking" methods. The president, members of its board of trustees, top administrators, students, faculty, and staff took part in a series of trainings meant to help them foresee long-term trends and assess the possible implications for the institution, students, and neighboring communities. The college used institutional immersion to take an entirely new long-view approach to its strategic planning and operating process.

Not everyone at the institution bought into the trendy-sounding training. "You have to convince people that the futures process thinking is not the flavor of the day but your savior. It was key that I and other trustees go through this entire training process to let everyone in the institution know that this is important," Merchant told me.

Merchant recommended trustees explore similar training approaches that help institutionalize a proactive approach to the innovation economy — emphasizing the value of data to drive decision-making. "Proactive expansion of offerings across these emerging technology areas is something that board members can support," he said.

Next, I spoke with Roberto Alonso, a trustee of Miami Dade College. Miami Dade is one of the nation's leading community colleges in AI education, becoming one of the only institutions to offer credit and non-credit certificates, associate degrees, and bachelor's degrees in applied AI. In 2021, the college named Antonio Delgado its first vice president of innovation and technology partnerships, and he has since gone on to serve as the first two-year representative on NSF's Computer and Information Sciences Directorate Advisory Committee.

In 2024, Miami Dade was awarded a \$2.8 million grant from the NSF to partner with Houston Community College and Maricopa Community College District to launch a consortium dedicated to scaling and improving AI education at two-year institutions.

Alonso emphasized the importance of trustees ensuring that their institutions not only meet employer demands but also include ethics across emerging technology training. "We are democracy's colleges. We are an institution that gives access to all students. If we don't give students the knowledge they need to use AI in a positive way, we won't be tackling the biggest need," Alonso told me. Alonso encouraged trustees to consider how their institutions can foster technologists in the public interest. Miami Dade is a member of New America's Public Interest Technology Network, which cultivates tech professionals who are ethics-savvy.

Alonso, who also serves on the Miami-Dade County School

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Board, also encouraged fellow trustees to tether their institutions' work in regional innovation ecosystems to their local communities through their own relationships. While 70% of Miami Dade's booming AI enrollment is above 26 and 30% above 41, Miami Dade offers an AI summer camp for high school students to immerse in the college's applied AI curriculum at no cost. Additionally, Delgado, in his role as the college's tech workforce leader, serves as a senior advisor for tech talent development to the Mayor of the City of Miami to foster town-gown relationships.

Lastly, I spoke with William "Bill" Kelley, board chair of William Rainey Harper College, located just outside Chicago. Buoyed by a recent half-billion dollar investment in quantum technology, Illinois governor J.B. Pritzker envisions Illinois as a "global quantum capital." Nestled in the heart of a booming quantum science and technology hub, Harper is well-aligned with the future of its region's economic development strategy.

In fall 2022, Harper launched the Innovation Accelerator, a new collaborative unit designed to focus specifically on emerging technology workforce training. Writing for the American Association of Community Colleges, Harper President Avis Proctor described how the accelerator is developing accelerated career pathways in cybersecurity, quantum computing, and cloud-computing.

"Under Dr. Proctor's leadership, we set aside \$900,000 from our HEERF [Higher Education Emergency Relief Fund] funding to create the Innovation Accelerator," Kelley told me. "We complemented that funding from the U.S. Department of Energy, NSF, and other agencies."

Harper was one of the first grantees of NSF's new CHIPS-enabled Enabling Partnerships to Increase Innovation Capacity (EPIIC) grant funding program, which it is using to work with a consortia of two- and four-year institutions to improve employer partnerships in quantum fields. Kelley recommends trustees look at how the entire institution can support its technology goals. For example, Harper engaged its philosophy program to support its ethics course in AI. "We had to reach out to different departments

to work better together, as well as the college's foundation," Kelley told me.

Policy to Empower Community Colleges

Trustees Kelley, Alonso, and Merchant aren't alone as college leaders who support their institution's evolutions to address the future of work, but they are among the early adopters. All three trustees emphasized the need for federal and state governments to better recognize the need and value of community colleges in the innovation economy. Policy innovations such as allowing community college baccalaureates, funding apprenticeship and quality short-term training, and funding startup costs all arose as needs.

On the federal level, Congress has only appropriated a portion of the funding of the CHIPS & Science Act authorizations. In July 2024, four community college presidents, including the presidents of MiraCosta and Harper College, joined New America to publicly call on Congress to fully appropriate funding for NSF. NSF experienced budget cuts in March, hamstringing its support of community colleges. "Getting the other half of the loaf would be huge for the next wave," Kelley said.

As the U.S. government advances the vision of CHIPS and a bipartisan approach to industrial policy, community colleges will be critical to a successful and equitable innovation economy.



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