January 15, 2026

Mary Crowe, Program Officer
National Science Foundation
Directorate for Technology, Innovation and Partnerships
2415 Eisenhower Avenue
Alexandria, VA 22314

Re: Workforce Development in Emerging and New Technologies Request for Information (RFI)

Dear Dr. Crowe,

The American Council on Education (ACE) submits these comments in response to the National Science Foundation (NSF) Directorate for Technology, Innovation and Partnerships (TIP) Request for Information (RFI) titled Workforce Development in Emerging and New Technologies.[1] Below are responses to the questions posed in the RFI.

Question 1: How might NSF TIP collaborate with critical and emerging technology industries to best prepare for future workers and reskill current workers?

While collaboration with industry would allow NSF TIP insight into the most critical and emergent technologies, collaboration with colleges and universities is vital to efficiently prepare future workers and reskill current workers for the rapidly developing needs of the workforce. A recent Google trends analysis demonstrates that nearly 90 percent of professionals aged 30-55 are considering a career change, and of them, 60 percent are open to returning for a graduate degree.[2] Postsecondary education contains the infrastructure and educational and administrative expertise in upskilling and reskilling workers to best suit workforce needs.

Question 2: How might NSF TIP leverage local, state and tribal, including regional, efforts in workforce development to help provide all Americans with the skillset(s) required for careers in critical and emerging technologies or closely aligned fields?

Institutions of higher education should be considered a critical component of workforce development that work in tandem with industry to support the workforce needs of rapidly developing technological advancements. Community colleges, which often engage and form partnerships with local industries, are especially equipped to support specific workforce needs, as recognized by NSF through the Regional Innovation Engines investments that name

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[1] https://www.nsf.gov/tip/updates/nsf-seeks-input-workforce-development-roadmap-technology
[2] July 23, 2025 St. Thomas University online, "Mid-Career Americans are Returning to the Classroom" https://online.stu.edu/degrees/business/mba/mid-career-comeback/

community colleges as partners in regional workforce development.[3] NSF TIP can further leverage the regional impact of postsecondary education, and specifically community colleges, to ensure all Americans are provided with the skillset required for careers in emergent technologies.

Question 3: Beyond questions 1 and 2, are there specific sectors, organizations, or groups that NSF TIP must especially engage to fully address the goals articulated in the workforce roadmap and this RFI? If so, which ones, why, and how?

Institutions of higher education need to be engaged to fully address all the goals articulated in the NSF TIP workforce roadmap.[4] Regarding Goal 1: "Build cross-sector networks to address workforce need," higher education and industry have an existing cross-sector network that supports workforce development, and continued collaboration would address workforce needs. Postsecondary education has also moved to rapidly adapt educational offerings to best support emerging technological and workforce needs, with artificial intelligence curriculum, programs, and initiatives being provided at many institutions nationwide.

Postsecondary education's current investment in skills training provides entry into and advancement among emerging technological careers that address workforce needs, which speaks to Goal 2: "Invest in industry-informed workforce development that increases entry into, retention in and advancement in critical and emerging technology careers." and should be considered a critical component of workforce development.

Finally, regarding Goal 3: "Accelerate the translation of education technology innovation from research to practice for workers across all ages and educational pathways," postsecondary education has long served as a pathway from developing research into practice. According to the NSF's National Science Board, the number of business startups powered by licensed university technology has grown by over 80 percent over the last 15 years, demonstrating postsecondary education's ability to accelerate the translation of education technology innovation from research to industry.[5]

In addition, the roadmap notes that "TIP will partner with other NSF directorates to leverage educational research to ensure that workforce development initiatives are creating on-ramps for all Americans into critical and emerging technology careers." It will be essential that TIP partner and build on the programs funded through the Directorate for STEM Education, already established at NSF.

Question 4: As technology impacts nearly all economic sectors, a full range of technology-enabled roles will require a wide range of skills. Where should NSF TIP emphasize its investments in workforce development in the near and long term?

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[3] November 19, 2024 New America, "Empowering Community College Partnerships for Economic Development and Industrial Policy" https://www.newamerica.org/education-policy/edcentral/empowering-community-colleges-partnerships-for-economic-development-and-industrial-policy/
[4] NSF "Roadmap for Workforce Development for the U.S. National Science Foundation Directorate for Technology, Innovation and Partnerships: Building Pathways and Innovations for the Critical and Emerging Technology Workforce" https://nsf-gov-resources.nsf.gov/files/tip-workforce-development-roadmap.pdf
[5] National Science Board Science and Engineering Indicators "Invention, Knowledge Transfer, and Innovation" https://ncses.nsf.gov/pubs/nsb20241/figure/INV-13

The development of skills to sufficiently support rapidly developing workforce needs among technological industries requires constant investment into upskilling and reskilling workers. Learning and working are part of a cyclical process that consistently develops the workforce to meet the needs of industry. Regarding long-term workforce development, postsecondary education must be supported in tandem with industry to maintain a flexible and adaptable system that is responsive to the changing needs of technology through the education and application of new skills.

Question 5: Which of the critical and emerging technologies specified in Section 10387 of the CHIPS and Science Act of 2022 (Public Law 117-167) will have the greatest workforce needs in the next five years? The next decade?

All of the technologies specified in Section 10387 of the CHIPS and Science Act of 2022 will have significant workforce needs in the long term, requiring skilled workers at all academic levels. Postsecondary education plays a crucial role in providing adaptive and responsive skills training to workers as technology emerges, with many institutions of higher education quickly moving to offer artificial intelligence and machine learning opportunities in support of workforce needs.[6] Workforce development strategies should be comprehensive and focus on skills training to ensure that workers from all academic backgrounds can successfully support workforce needs at all stages of technological development and manufacturing.

Question 6: What may be the most effective strategies to address workforce gaps as critical and emerging technologies are introduced into a range of industries?

Institutions of higher education are uniquely positioned to upskill and reskill current workers, allowing individuals to transition into careers that support emerging technologies. Postsecondary education is also a uniquely adaptable and responsive industry, consistently growing and changing to reflect workforce needs. Workforce gaps can be mitigated by a consistent investment in the collaboration between postsecondary education and industry, ensuring that colleges and universities are fully equipped to educate tomorrow's workforce.

We look forward to continuing to work with you on these important issues. If you have any questions regarding these comments, feel free to reach out to Hironao Okahana, Managing Researcher and Chief of Planning and Impact, at hokahana@acenet.edu.

Sincerely,

Ted Mitchell, President

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[6] May 15, 2025 Forbes, "How Leading Universities are Building the Future of AI"
https://www.forbes.com/sites/avivalegatt/2025/05/15/how-leading-universities-are-building-the-future-of-ai/