

knowledge alliance

Dr. Chaitan Baru
National Science Foundation
2415 Eisenhower Avenue Alexandria, VA 22314, USA.

Dear Dr. Chaitan Baru,

I am writing on behalf of Knowledge Alliance in response to the National Science Foundation's (NSF's) request for information ([RFI](#)) soliciting comments to inform the development of a roadmap for its newly established Technology, Innovation, and Partnerships (TIP) Directorate. [Knowledge Alliance](#) (KA), a non-profit, non-partisan organization, is comprised of leading education organizations committed since 1971 to the greater use of high-quality and relevant data, research, evaluation, and innovation in education policy and practice at all levels. Collectively, KA and its members promote the use of rigorous research to figure out what works to improve student outcomes, share those findings with policymakers, practitioners, and the general public, and help them put the findings to use. Our members have extensive expertise in STEM, including curriculum development, evaluation, technical assistance, replication, professional development, research, workforce readiness and research-to-practice partnerships. KA members have built trusted relationships with states, districts, and Federal agencies, such as NSF to help ensure they have access to and can conduct research informing the future of STEM across all sectors. KA believes that the effective use of rigorous research and evidence are integral to innovating and improving learning outcomes for every student.

KA believes that each TIP focus area should include an education sub-priority (or separate priority that undergirds all of the topic areas) that addresses K-12, postsecondary, and workforce education.

Education forms the foundation upon which the nation's economic, social, and technological progress is built. Education empowers individuals and society as a whole to meet the challenges of a rapidly evolving world and position the U.S. as a global leader in promoting individual and societal well-being as well as productivity and innovation. Horrifyingly, the math and reading performance of 13-year-olds in the U.S. has hit the lowest level in decades, according to test scores released in June 2023 for the National Assessment of Educational Progress (NAEP), the gold-standard Federal exam. The last time math performance was this low for 13-year-olds was in 1990.¹ To address the critical challenges posed by these scores, TIP must prioritize investing in STEM education starting from kindergarten and continuing through 12th grade, as this early period plays a pivotal role in shaping students' academic journeys and future success. Incorporating robust STEM programs in K-12 schools provides students access to hands-on experiences, cutting-edge technologies, and engaging curriculum that not only fosters academic excellence but also prepares them for the challenges of an increasingly competitive

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and technologically advanced world. Neglecting investments in K-12 STEM education not only perpetuates the cycle of low NAEP scores but also hinders our nation's ability to remain globally competitive. KA recommends that the education sub-priority pay rigorous attention to equity and access among individuals, groups, and places. By emphasizing these key components, the roadmap can effectively drive educational progress and thereby contribute significantly to the advancement of U.S. competitiveness.

Amplify and Leverage NSF's Existing Investments in Education Research and Development (R&D)

NSF plays a crucial role in supporting education research and development in the U.S. NSF presently supports education research and development through funding research projects, educational technologies, teacher professional development, evaluation methods, and initiatives to broaden participation in STEM fields, fostering innovation and evidence-based practices in STEM education. NSF's Education and Human Resources (EHR) Directorate focuses on promoting excellence in STEM education and increasing diversity in STEM fields, contributing to a skilled and inclusive workforce.

Including education sub-priorities in each focus area of TIP is a strategic opportunity to leverage the existing work supported by NSF. By integrating education initiatives across technology-related fields, we can build upon and extend the impact of ongoing research and innovation efforts.

Leverage the Experience of the Regional Educational Laboratories and Comprehensive Centers

The Regional Educational Laboratories (RELs) funded by the U.S. Department of Education's Institute of Education Sciences (IES) support education research, policy, and practice by providing research-based insights and technical assistance to educators, policymakers, and stakeholders within specific geographic regions in the U.S. There are currently ten RELs, each covering a different region of the country.

The Regional Comprehensive Centers (CCs) funded by the U.S. Department of Education's Office of Elementary and Secondary education provide intensive capacity-building services to one or more states to identify, implement, and sustain effective evidence-based practices that support improved educator and student outcomes. Together, the CCs provide services to all 50 States, the District of Columbia, the Bureau of Indian Education, and the U.S. territories and outlying areas. There are 19 regional centers and one national center.

The RELs and CCs are resources that can significantly support and enhance TIP's regional focus on economic development. With expertise in specific geographic areas, and long-standing, trusted partnerships with stakeholders, the RELs possess a deep understanding of regional education needs, workforce demands, and economic challenges. Leveraging the RELs' local context and knowledge can



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help TIP align its technological innovation efforts with the specific needs of each region, enabling the development of evidence-based solutions that promote economic growth.

Additionally, the RELs' established partnerships with educators, policymakers, and community stakeholders can serve as a foundation for TIP to build collaborative networks, ensuring that innovative solutions are effectively integrated into regional economic development strategies.

KA Encourages TIP to Cast A Wide Net for Partners

We encourage that, as TIP thinks about its roadmap and its priorities, TIP is deliberate about casting a wide net to involve individuals and organizations that have stakes in the work and expertise and experiences that will contribute to its success. A diverse range of participants from institutions of higher education as well as research organizations, developers (both non-and-for-profit), and practice and policy entities should be included. Research organizations with a background in education have longstanding relationships with states, municipalities, and communities as well as other research partners, which can and should be leveraged to achieve TIP's goals.

In sum, KA urges NSF to consider the role that education plays in creating the foundation for accomplishing TIP's goals and meeting its challenges. We thank you for the opportunity to comment on this matter. If I can be of any other assistance, please do not hesitate to contact me at rdinkes@knowledgeall.net

Sincerely,



Rachel Dinkes
President and CEO