REQUEST FOR INPUT:
Shaping NSF's TIP Directorate

June 21, 2023

Dear Social Science Community,

The National Science Foundation (NSF) is seeking public input into the development of a roadmap for the newly created Directorate for Technology, Innovation, and Partnerships (TIP). The roadmap will guide the TIP Directorate's activities and directions for the next three years, and COSSA needs your input to help ensure that insights from social and behavioral science research are included—if not prioritized—in efforts to shape the future of U.S. technology development and deployment.

COSSA will be submitting comments to NSF on behalf of the research community before the deadline. We want to hear from you. Comments and ideas for the roadmap should be sent to COSSA by July 13 in order to be considered as part of our submission. We welcome any and all contributions that you think help tell the story of why social and behavioral science must be part of TIP activities. Read on to find out the questions posed by NSF and how you can contribute.

Let's make a difference by engaging in the early process of TIP's development and securing a seat at the table for social and behavioral science research. Your contribution to the process will shape the future of technology and infrastructure for the public good. Thank you for your dedication to advancing social science and its impact on society.

Background

The TIP Directorate was officially launched in 2022 with the passage of the FY 2022 appropriations bill, which provided first-time funding (for more information, see COSSA's Headlines webinar with TIP leadership). The *CHIPS and Science Act* enacted last summer further tasked NSF with developing a roadmap for the new Directorate to guide investment decisions in *use-inspired* and *translational research* over a 3-year time frame, working towards the goal of advancing U.S. competitiveness in the identified key technology focus areas and addressing the identified societal, national, and geostrategic challenges (listed below). It is important to note that the 10 key technology areas and 5 societal, national, and geostrategic challenges were set by Congress in the *CHIPS and Science Act*, thereby requiring NSF to invest in these topics.

Key Technology Areas:

1. Artificial Intelligence, Machine Learning, Autonomy, and Related Advances.
2. High-Performance Computing, Semiconductors, and Advanced Computer Hardware and Software.
3. Quantum Information Science & Technology.
4. Robotics, Automation, and Advanced Manufacturing.
5. Natural and Anthropogenic Disaster Prevention or Mitigation.
6. Advanced Communications Technology and Immersive Technology.
7. Biotechnology, Medical Technology, Genomics, and Synthetic Biology.

8. Data Storage, Data Management, Distributed Ledger Technologies, and Cybersecurity, including Biometrics.
9. Advanced Energy and Industrial Efficiency Technologies, such as Batteries and Advanced Nuclear Technologies.
10. Advanced Materials Science, including composite 2D materials, other next-generation materials, and related manufacturing technologies.

Societal, National, and Geostrategic Challenges:

1. U.S. National Security.
2. U.S. Manufacturing & Industrial Productivity.
3. U.S. Workforce Development & Skills Gaps.
4. Climate Change and Environmental Sustainability.
5. Inequitable Access to Education, Opportunity, or Other Services.

Input Sought

While the role of social and behavioral science in the development and deployment of the technologies listed above may not be obvious to the general public, our community understands that these technologies exist within social contexts. It is important that our community highlights the human aspects of these areas, whether it's behavior, decision-making, community/population/societal impacts, questions of equity, ethics, etc. Below are specific questions raised by NSF in the Request for Information (RFI) as well as additional questions developed by COSSA to help you think about the role of our sciences to TIP.

Questions Raised by NSF:

The RFI lists several questions to help guide input into the roadmap, including (find the full list here):

1. **Prioritization**. What evidence exists that should guide NSF in determining priorities across the technologies listed above in advancing or maintaining U.S. competitiveness? Within each technology area, are there critical use-inspired and translational research topics that should be prioritized for NSF investment in a 1- to 3-year time frame?
2. **Suitability**. Which technologies, or topics within the technologies listed above, are well-suited for the type of use-inspired and translational research that TIP has the mandate to support?
3. **Workforce**. Which of the technologies listed above will have the greatest workforce needs in the next 1 to 5 years, understanding that investments in workforce initiatives often have longer time horizons to produce results?
4. **Addressing societal challenges**. Considering the ways each of the key technology focus areas will impact each of the societal, national, and geostrategic challenges, which of the technology areas should receive investment priority and why?
5. **Additions**. Are there technology areas that should be prioritized for TIP investment in the near term that are not included in the above list?
6. **Crosscutting investments**. What translational research investments can be made to drive innovation by addressing critical needs common to multiple technology focus areas?

Other Framing Questions Raised by COSSA:

COSSA is interested in receiving your ideas related to the above questions *in addition* to other suggestions for ways social and behavioral science can contribute to TIP activities.

For example, COSSA welcomes input on questions such as:

1. Are there any major gaps in the 10 key technology areas or societal, national, and geostrategic challenge areas? How might social and behavioral science research assist?
2. How can implementing social science research within a given technology specialization address challenges seen in society?

3. How could TIP programs be structured best to supply workforce needs? Is there data on or examples of workforce needs in the key technology areas requiring expertise in the social and behavioral sciences?
4. How can social and behavioral science research advance past the fundamental discovery stage toward results and outcomes that directly benefit people through societal or economic impacts?

How Can You Contribute?

1. **Share Your Ideas with COSSA by July 13**: Share your ideas about the role of social and behavioral science research in the activities of the TIP Directorate by ***Thursday, July 13***. COSSA will use community feedback to inform our own submission to NSF.
2. **Submit Your Own Comment to NSF**: COSSA may not be able to accommodate all suggestions into our comment; therefore, in addition to helping guide COSSA's response, consider submitting your ideas directly to NSF (please send us a copy of your submission). Full submission details are included in the RFI. The NSF deadline is July 27.
3. **Share this Call to Action**: Spread this message widely and encouraging fellow researchers, professionals, and enthusiasts to comment. Here, we can create a unified voice that represents our collective commitment.
4. **Connect Us with Experts**: If you know individuals with deep expertise in relevant fields, please connect them with us. Their insights can help inform the community-wide comment that will be submitted.

For questions, please contact Ian Gaines at COSSA at igaines@cossa.org.