A pivotal moment for our Nation and society

- Climate change
- Equitable access to education, health care
- Critical and resilient infrastructure
Meeting this moment with science & engineering

- Pace of discovery accelerated by data, emerging technologies
- Demand for societal impact
- Opportunity to leverage partnerships
Meeting this moment with an intentional focus

Pure Basic Research

Use-Inspired Basic Research

Bohr  Curie

Quest for Fundamental Understanding

Pasteur

Translation Innovation

Pure Applied Research

Carver  Edison

Consideration of Use
Existing NSF research directorates and offices

- Biological Sciences
- Engineering
- Mathematical & Physical Sciences
- Computer & Information Science & Engineering
- Geosciences (including Polar Programs)
- Integrative Activities
- Education & Human Resources
- International Science & Engineering
- Social, Behavioral & Economic Sciences
- Mathematical & Physical Sciences
- Computer & Information Science & Engineering
- Geosciences (including Polar Programs)
- Integrative Activities
- Education & Human Resources
- International Science & Engineering
- Social, Behavioral & Economic Sciences
A new “horizontal” to enhance use-inspired and translational research

DIRECTORATE FOR TECHNOLOGY, INNOVATION AND PARTNERSHIPS (TIP)
### TIP FY 2022 funding ($M)

<table>
<thead>
<tr>
<th></th>
<th>FY 2022 Request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Ecosystems (IE)</td>
<td>$335.00</td>
</tr>
<tr>
<td>Partnerships Office (PO)</td>
<td>50.00</td>
</tr>
<tr>
<td>Technology Frontiers (TF)</td>
<td>150.00</td>
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<tr>
<td>Translational Impact (TI)</td>
<td>329.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$864.87</strong></td>
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</tbody>
</table>
Partnerships as a Foundation: $50M

Accelerate Partnerships

Realigned investments: $364.87M

New investments: $500M
Realigned investments: $364.87M

New investments: $500M

Technology & Innovation Ecosystem: $485M
- Convergence Accelerator
- I-Corps
- Regional Innovation
- Industries of Tomorrow co-investment
- Entrepreneurial Fellows

Partnerships as a Foundation: $50M
- Accelerate Partnerships
Partnerships as a Foundation: $50M

Technology Translation: $329.87M
- PFI
- SBIR/STTR
- Innovative Pathways

Technology & Innovation Ecosystem: $485M
- Convergence Accelerator
- I-Corps
- Regional Innovation
- Industries of Tomorrow co-investment
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Realigned investments: $364.87M
New investments: $500M

Technology Translation: $329.87M

Technology & Innovation Ecosystem: $485M

Partnerships as a Foundation: $50M

Accelerate Partnerships
FY 2022 NSF priorities

- **Enhance Fundamental Research and Development**
  - Support research across the spectrum of science, engineering, technology, and education

- **Strengthen U.S. Leadership in Emerging Technologies**
  - Includes the establishment of a new directorate for technology, innovation, and partnerships within NSF to advance science and engineering research and innovation

- **Advance Equity in Science and Engineering**
  - Increase participation in science and engineering of individuals from racial and ethnic groups underrepresented in these fields

- **Advance Climate Science and Sustainability Research**
  - Advance use-inspired, solution-oriented research and innovation in climate and clean energy-related research

- **Continue construction of forefront infrastructure**
  - Continue construction of major NSF research facilities
Enhancing the Lab-to-Market Platform

Educate
SBIR and STTR
NSF I-Corps™

Validate
Transition to Practice

Demonstrate
Partnerships for Innovation

Translate

NSF
Enhancing the Lab-to-Market Platform

- Mature ideas or research results
- Demonstrate as usable capabilities
- For the research community or industry

$150K-$1M per project

$12M per year

SBIR and STTR

Transition to Practice

NSF I-Corps™ Partnerships for Innovation
Enhancing the Lab-to-Market Platform

- Transition to Practice
- Partnerships for Innovation
- SBIR and STTR
- NSF I-Corps™

$250K-$550K per project
$30M in FY 2022

- Create collaborations with industry
- License NSF-funded research outputs to third-party corporations or to start-up companies
Enhancing the Lab-to-Market Platform

- Train NSF-funded faculty, students in innovation, entrepreneurship to spur translation of research to market
- Product-Market Fit
- Nearly 800 startups created to date

>250 Teams per year
$40M in FY 2022
Enhancing the Lab-to-Market Platform

- R&D funding to develop transformative, deep tech, high-impact technologies
- Transforms scientific discovery into products and services with commercial and societal benefit

$250K Phase I, $1M Phase II, $500K Phase IIB
$274.64M in FY 2022
Regional Innovation Accelerators

- Cultivate new innovation ecosystems at the scale of individual communities and/or regions throughout the U.S.
- Address major scientific and technological goals while ensuring broad societal benefits
- Balance technical and geographic innovation; incentivize partnerships; serve as hubs for NSF’s broader portfolio
Regional Innovation Accelerators

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foundational science drivers

societal impacts, economic growth, new jobs

- Iterative co-design / co-creation
- Earlier engagement of broadest set of stakeholders to motivate / shape research
- Intentional co-funding (e.g., cost-share) and access to range of resources
Regional Innovation Accelerators

- Point examples of local/regional innovation ecosystems today
Regional Innovation Accelerators

• Point examples of local/regional innovation ecosystems today
• Creating opportunities for every community, state
NSF Entrepreneurial Fellows

- Pathways for Ph.D.-trained scientists and engineers
- Forging connections between academic research and government, industry, and investors
- Training to become leaders capable of maturing promising ideas and technologies from lab to market
TIP summarized

• Use-inspired, challenge-driven, convergent research
• Innovation and technology translation
• Leveraging the virtuous cycle of foundational and use-inspired research

• Long-term, large-scale
• Public-private partnerships
• Education, workforce, diversity
Questions?