NSF Reauthorization Legislation

Presentation to ReDAC

September 1, 2021

FY22 Appropriations

- FY21 NSF funding: $8.4B
- President’s proposal: $10.2B
- House proposal: $9.36B
- Senate proposal: TBD

House: Several Bills

- NSF for the Future Act
- DOE Office of Science reauthorization
- NIST reauthorization
- STEM Opportunities Act
- Energizing Technology Transfer Act
- …and more

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Senate:
US Innovation and Competitiveness Act

- NSF reauthorization (aka Endless Frontiers Act)
- DOE Office of Science reauthorization
- NASA reauthorization
- Economic Development Administration programs
- Research security measures
- …and more

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Funding Authorization

- House: $78B over five years
  - $13B over five years to new directorate
- Senate: $81B over five years
  - $26B over five years to new directorate
- FY21 NSF funding: $8.4B

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Directorate for Science and Engineering Solutions (House)

- Five focus areas considering:
  - Climate change and environmental sustainability
  - Global competitiveness and domestic job creation in critical technologies
  - Cybersecurity
  - National security
  - STEM education and workforce
  - Social and economic inequality

Directorate for Science and Engineering Solutions (House)

- Activities:
  - Grants, contracts, cooperative agreements, etc.
  - Use-inspired and translational research and development through a variety of activities
  - Requires development of policies to ensure ethical, legal, and societal considerations are integrated into activities

Directorate for Science and Engineering Solutions (House)

- New programs:
  - Technology Research Institutes in key areas
  - Entrepreneurial Fellowships
  - Scholarships to low-income students at all levels

Directorate for Technology and Innovation (Senate)

- 10 key technology focus areas
  - AI, machine learning, autonomy, and related advances
  - High performance computing, semiconductors, and advanced computer hardware and software
  - Quantum information science and technology
  - Robotics, automation, and advanced manufacturing
  - Natural and anthropogenic disaster prevention or mitigation
  - Advanced communications technology and immersive technology
  - Biotechnology, medical technology, genomics, and synthetic biology
  - Data storage, data management, distributed ledger technologies, and cybersecurity, including biometrics
  - Advanced energy and industrial efficiency technologies, such as batteries and advanced nuclear technologies, including but not limited to for the purposes of electric generation
  - Advanced materials science, including composites and 2D materials

Directorate for Technology and Innovation (Senate)

- Selected activities:
  - Shall support basic and applied research, and technology development through awards to individual researchers, entities, or consortia and through diverse funding mechanisms and models
  - Shall identify opportunities to coordinate and collaborate with other directorates of NSF, other agencies, and external stakeholders on projects or research, development and commercialization
  - Shall fund projects designed to achieve specific technology metrics or objectives
  - May support research and technology infrastructure
  - Shall identify ways to reduce barriers to tech transfer

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Directorate for Technology and Innovation (Senate)

- New programs:
  - University Technology Centers and Innovation Institutes
  - Research and technology development awards in the key technology focus areas
  - Program to develop and operate testbeds and fabrication facilities related to technology focus areas
  - Academic Technology Transfer to advance commercialization of technologies in key areas
  - Capacity Building Program for Developing Universities
  - Scholarships and fellowships in key technology areas

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Other Programs

- R&D partnerships between R1s and “emerging research institutions”
- Equity and broadening participation

Outlook

- Major hurdles: new directorate, funding, EPSCoR
- High priority in both chambers
- Bipartisan
- Negotiations happening now

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