Overview

NSF's Approach to Workforce Development

NSF Support for the Workforce

- Across the Career Continuum
- Partnerships with Industry

Lessons Learned

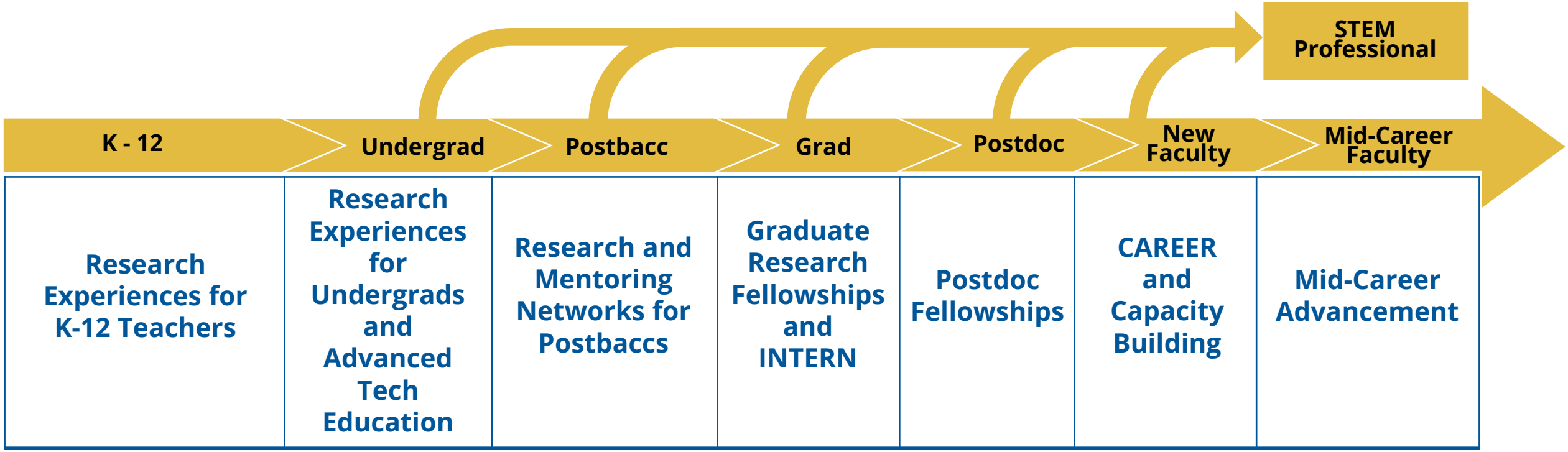
NSF's Approach to Workforce Development

Focus on Individuals at Career Transition Points

Create Opportunity Everywhere

Develop Partnerships

NSF's Support for the Workforce



Education and training components of all awards

Broader Impacts components of all awards

Partnerships with Industry

Advanced Technological Education (ATE) Program

- Largest two-year college investment agency's portfolio
- Mission to improve skills of a diverse set of technicians for high-technology fields
  - Facilitates acquisition of industry-endorsed credentials
  - Develops regional and national approaches to meet employers' needs for skilled technical workers

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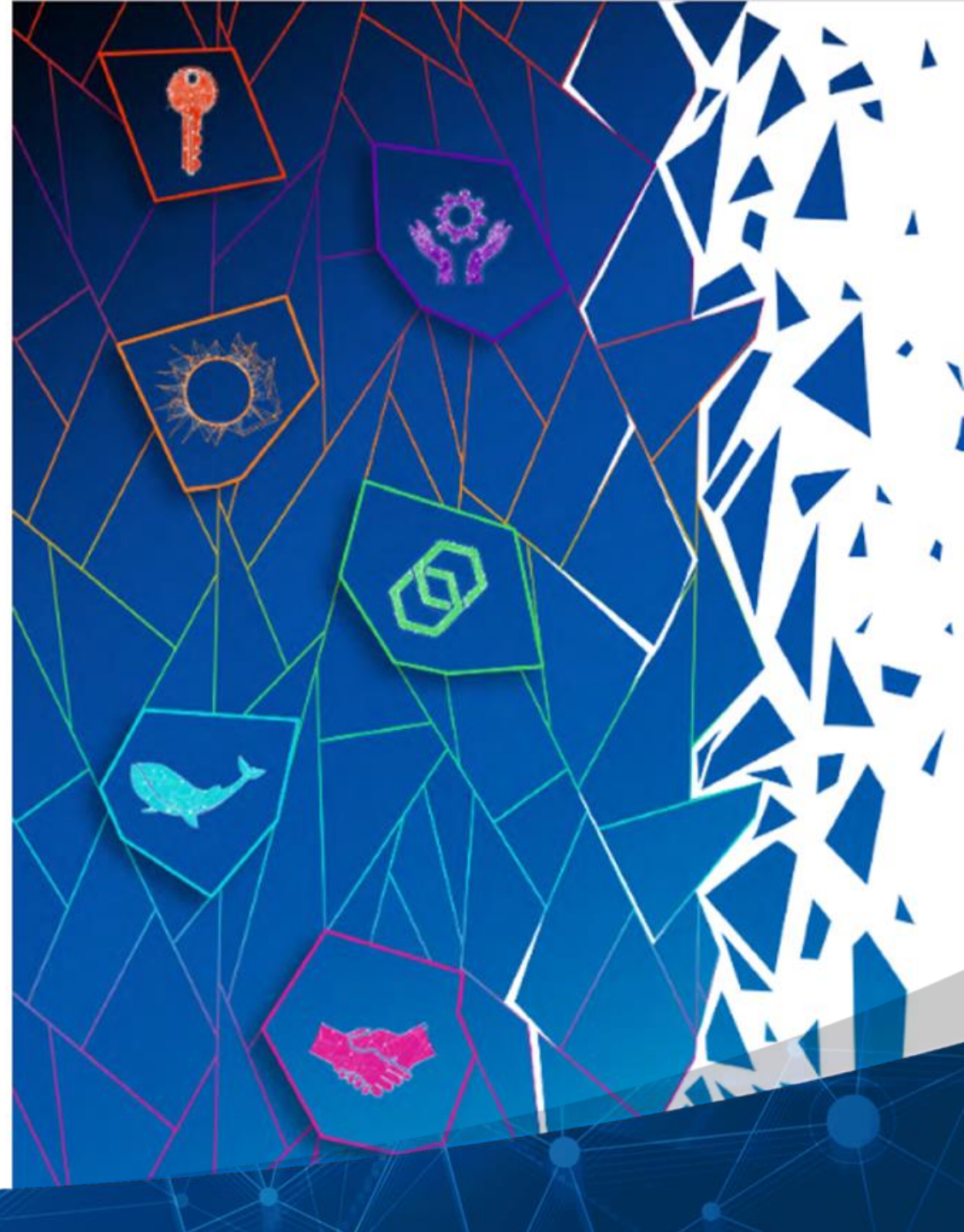
Convergence Accelerator

PI-identified partners:
identified by teams

+

NSF-identified partners:
proactively engaged by NSF
via **public events**

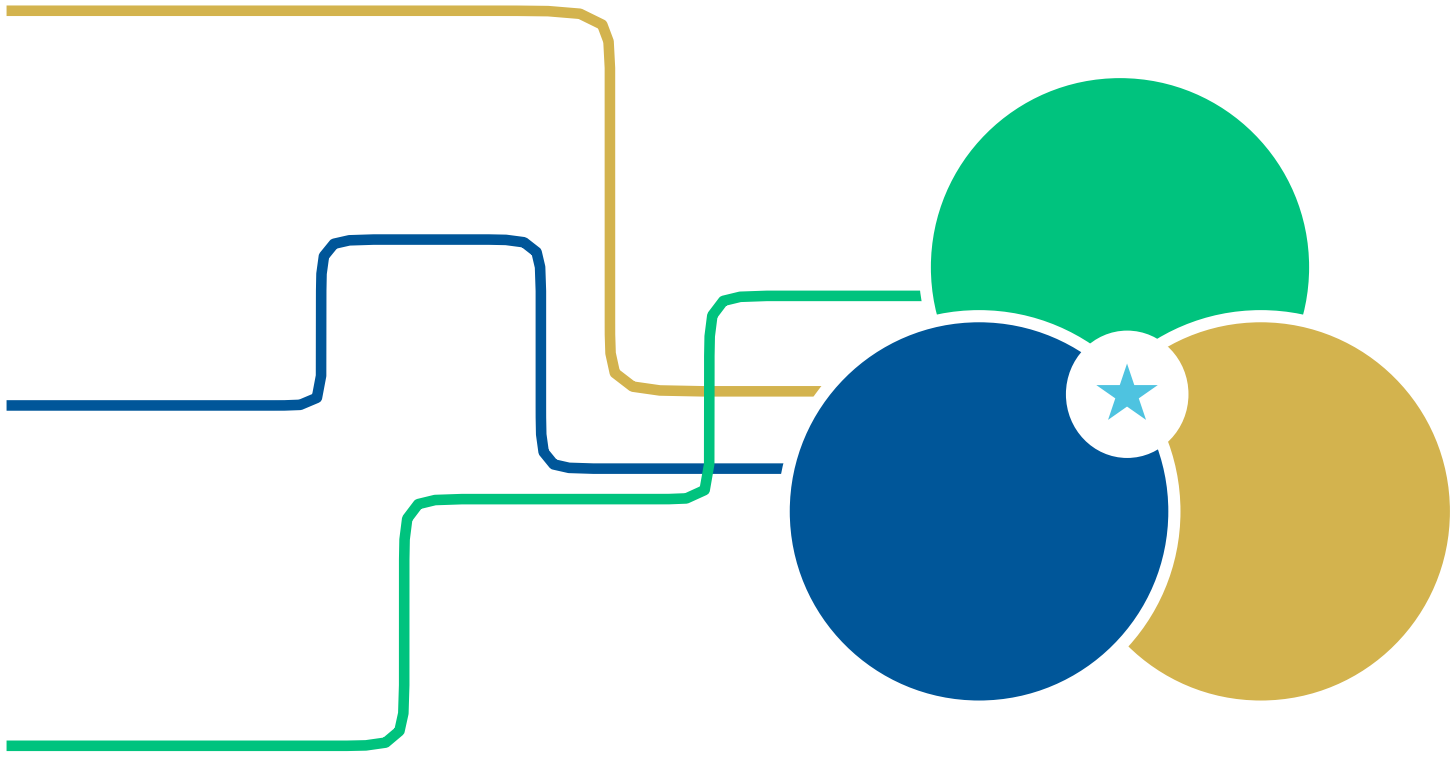


Industry/University Cooperative Research Centers (IUCRC)

Government
Governance structure,
Additional research projects,
funding

Universities
Infrastructure, human capital,
technical expertise

Industry
Research projects, funding



Regional Innovation Engines

- Catalyzes and fosters regional innovation ecosystems across the U.S. to:
  - Advance critical technologies
  - Address national and societal challenges
  - Foster partnerships
  - Promote and stimulate economic growth and job creation
  - Spur regional innovation and talent
- Nearly 700 concept outlines published

Gift Model: NSF and Boeing

Roughly 3,000 students (graduate and undergraduate) as well as 130 faculty members have benefited each year from PEER initiative awards.

Joint Program Model: NSF and Intel

Joint Programs:

- Cyber-Physical Systems Security and Privacy
- Visual and Experiential Computing
- Computer-Assisted Programming for Heterogeneous Architectures
- Information-Centric Networking in Wireless Edge Networks
- Foundational Microarchitecture Research
- Machine Learning in Wireless Networks

Typical model for *each* joint solicitation:

- Total investments: $6-8 million
- Funding ratio: 1:1 NSF: intel
- Awards: ~2-6 awards, $500,000-$3 million used over 3 years

New investment of $10 million in semiconductor workforce and technologies

Lessons Learned

Recruitment and Retention

Mutual Benefits

Varying Models