

Penn State Research

Implications of Convergence

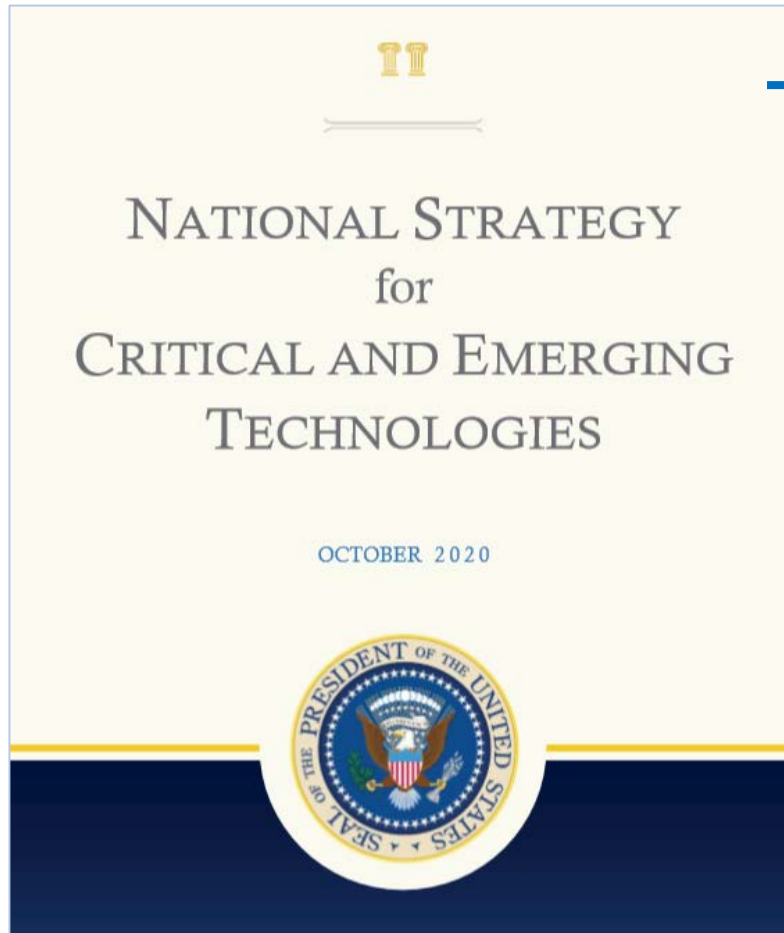
Lora G. Weiss, Ph.D.
Senior Vice President for Research

22 October 2020



PennState
Senior Vice President
for Research

National Strategy for Critical and Emerging Technologies



“In fact, many technology breakthroughs occur at the intersection of two or more disparate technologies.”

“Increase priority of R&D in developing US Gov’t budgets”

WORLD LEADER OF CRITICAL AND EMERGING TECHNOLOGIES

TECHNOLOGY LEADER

TECHNOLOGY PEER

TECHNOLOGY RISK MANAGEMENT

PILLAR I PROMOTE THE NATIONAL SECURITY INNOVATION BASE

- Develop the highest-quality science and technology (S&T) workforce in the world
- Attract and retain inventors and innovators
- Leverage private capital and expertise to build and innovate
- Rapidly field inventions and innovations
- Reduce burdensome regulations, policies, and bureaucratic processes that inhibit innovation and industry growth
- Lead the development of worldwide technology norms, standards, and governance models that reflect democratic values and interests
- Support the development of a robust National Security Innovation Base (NSIB), to include academic institutions, laboratories, supporting infrastructure, venture funding, supporting businesses, and industry
- Increase priority of research and development (R&D) in developing United States Government budgets
- Develop and adopt advanced technology applications within government and improve the desirability of the government as a customer of the private sector
- Encourage public-private partnerships
- Build strong and lasting technology partnerships with like-minded allies and partners and promote democratic values and principles
- With the private sector, create positive messaging to increase public acceptance of critical and emerging technologies (C&ET)
- Encourage state and local governments to adopt similar actions

PILLAR II PROTECT TECHNOLOGY ADVANTAGE

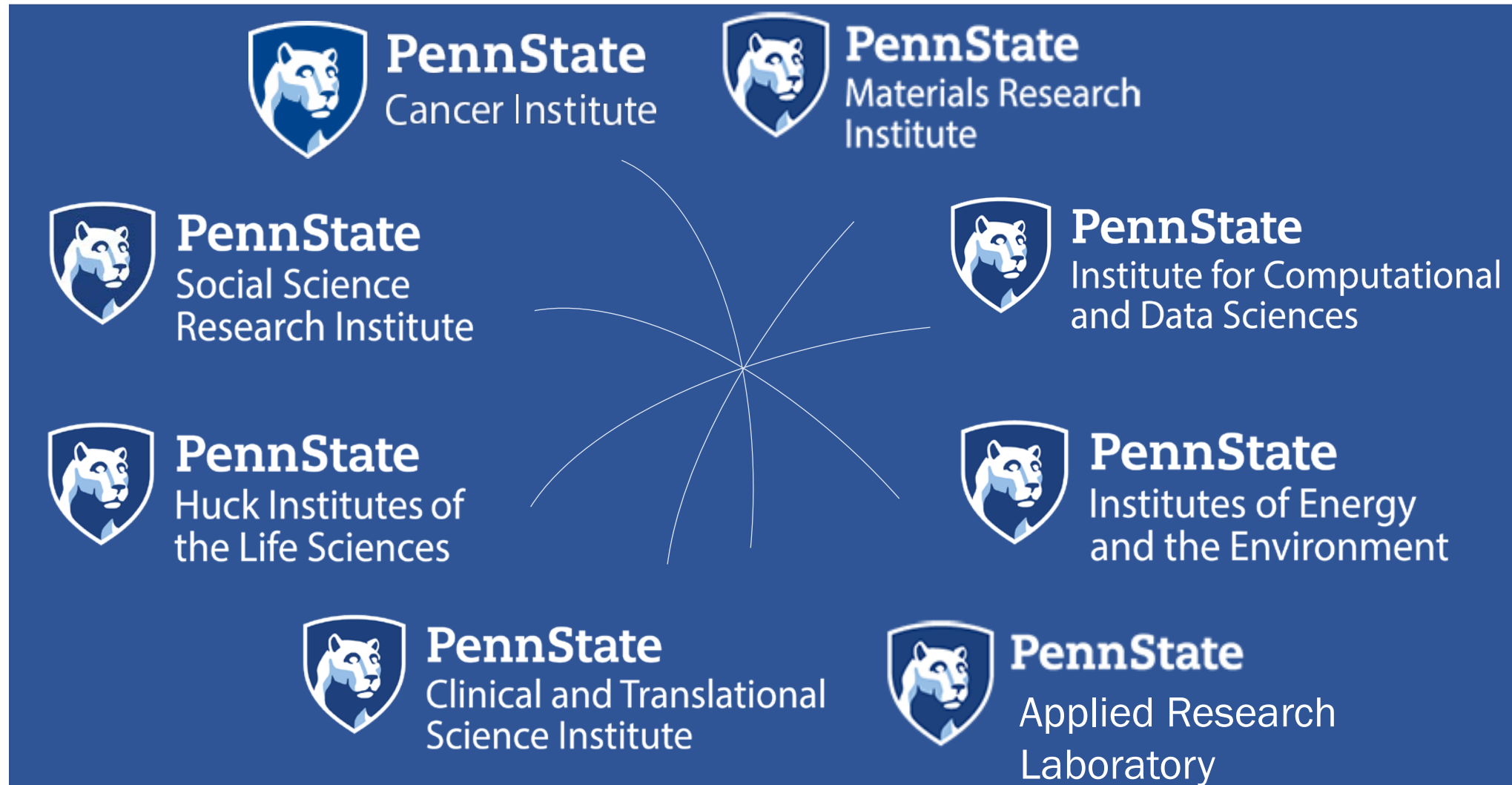
- Ensure that competitors do not use illicit means to acquire United States intellectual property, research, development, or technologies
- Require security design early in the technology development stages, and work with allies and partners to take similar action
- Protect the integrity of the R&D enterprise by fostering research security in academic institutions, laboratories, and industry, while balancing the valuable contributions of foreign researchers
- Ensure appropriate aspects of C&ET are adequately controlled under export laws and regulations, as well as multilateral export regimes
- Engage allies and partners to develop their own processes similar to those executed by CFIUS
- Engage with the private sector to benefit from its understanding of C&ET as well as future strategic vulnerabilities related to C&ET
- Assess worldwide S&T policies, capabilities, and trends, and how they are likely to influence, or undermine, American strategies and programs
- Ensure secure supply chains, and encourage allies and partners to do the same
- Message to key stakeholders the importance of protecting technology advantage and offer practical assistance whenever possible



PennState

Senior Vice President
for Research

Interdisciplinary Research Institutes

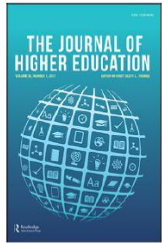


PennState

Senior Vice President
for Research

Interdisciplinary Collaboration & Co-Hires

...it's the culture



The Journal of Higher Education

ISSN: 0022-1546 (Print) 1538-4640 (Online) Journal homepage: <https://www.tandfonline.com/loi/uhej20>

Interdisciplinary Cluster Hiring Initiatives in U.S.
Research Universities: More Straw than Bricks?

Quinn Bloom, Michaela Curran & Steve Brint

***"There are exceptions to this rule.
One university in our sample stood
out..."***

Dec 3, 2019

Differentiators

- Genuine partnership between deans & directors
 - Shared vision, shared expectations
- Institute directors are top scholars
 - Exceptionally attractive to junior hires
- Professional staffing of shared resources
 - Dedicated staff maintain and operate core facilities
- Seed grants
 - High risk-high payoff collaborations, bold forays into new research directions, and creation of new partnerships.
 - ~41% receive external funding

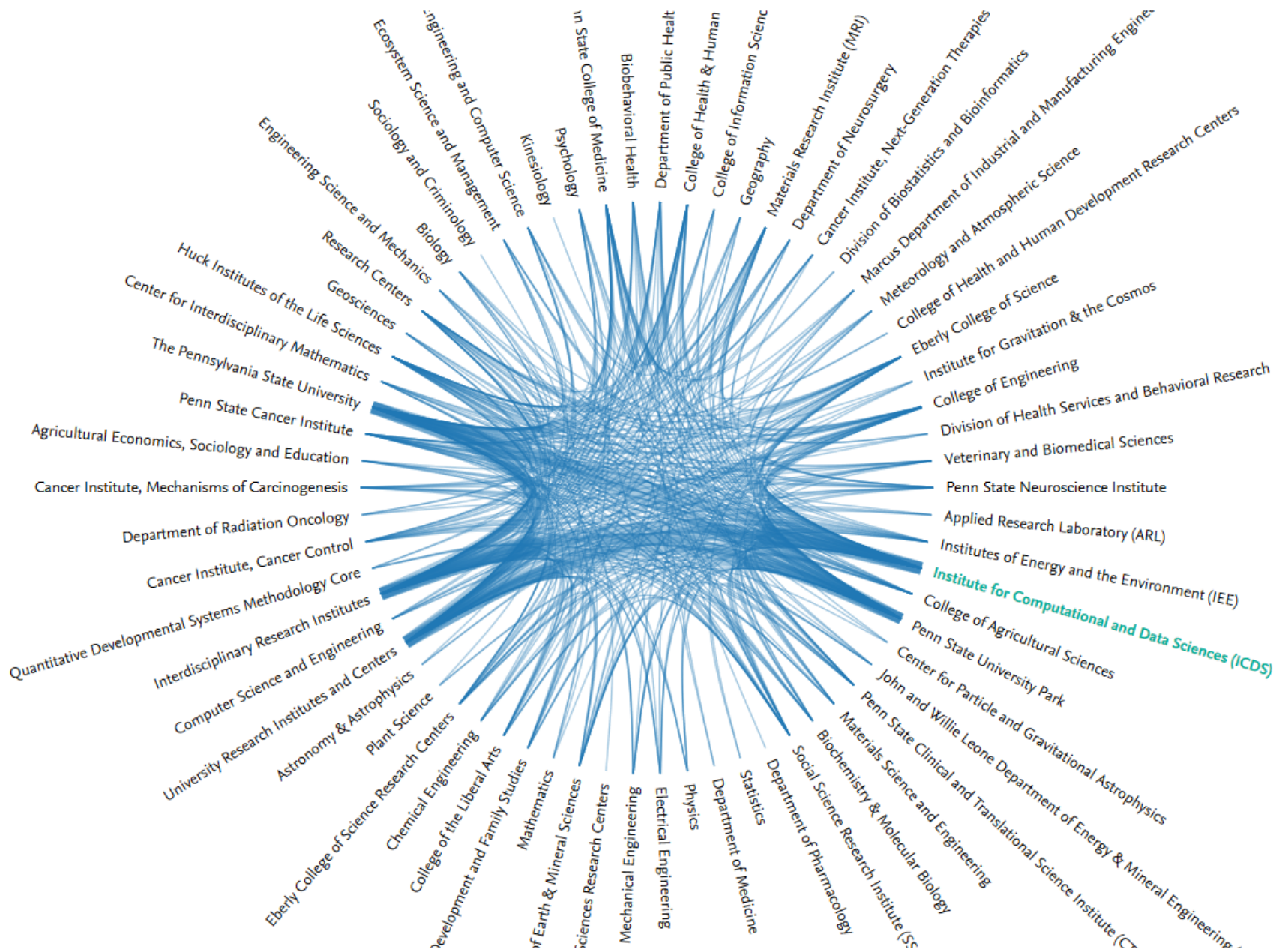


PennState

Senior Vice President
for Research

ICDS Collaborations (Units with 15 or more shared publications) with Penn State Internal units 2020-present

Source: [Pure.psu.edu](https://pure.psu.edu)



THANK YOU

