



Introduction to Industrial Innovation & Partnerships (IIP)

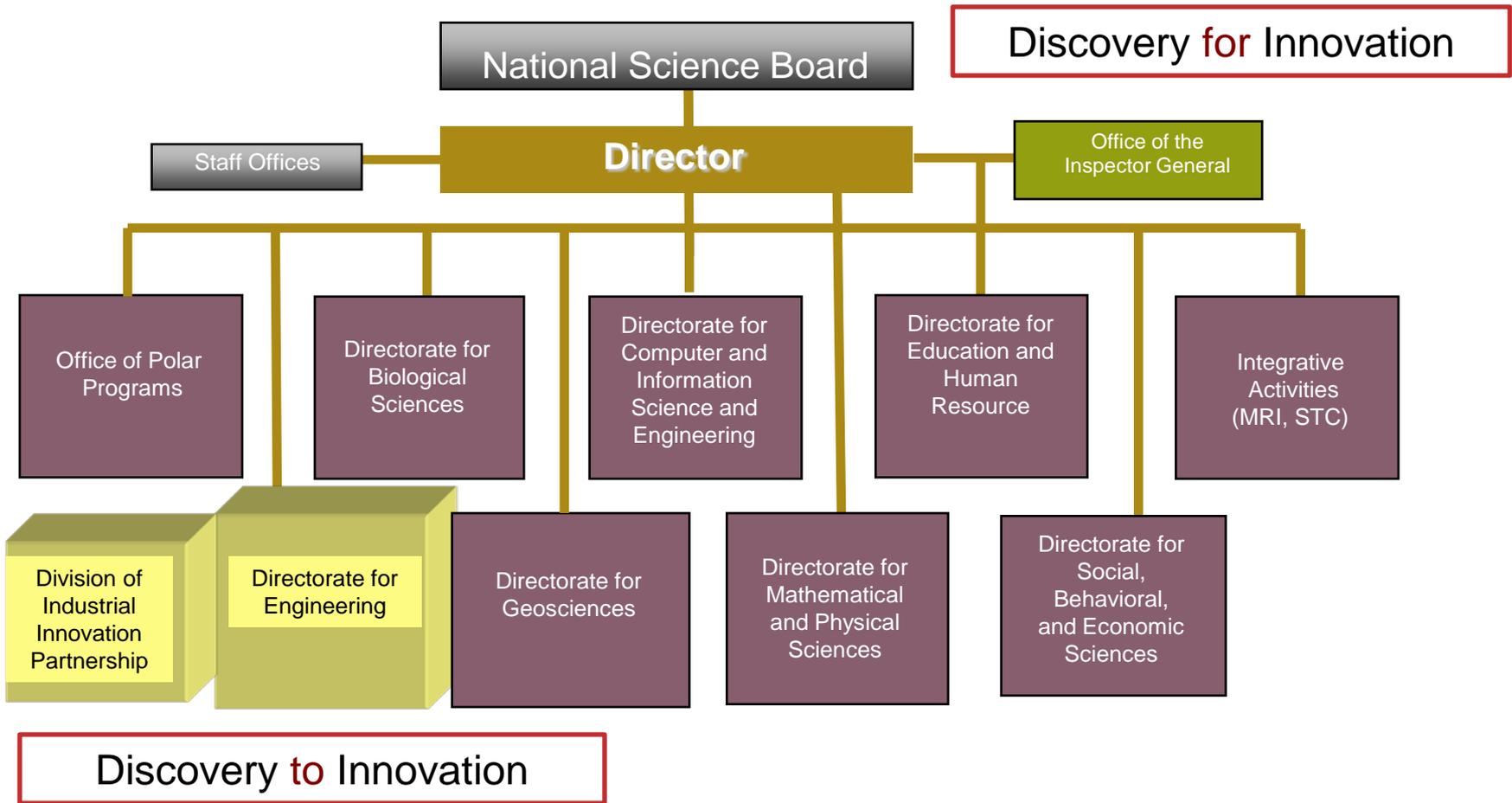
Kesh Narayanan

*Division Director, Industrial Innovation
& Partnerships*





National Science Foundation





Division Director
Kesh Narayanan

Academic Partnerships
Donald Senich

Small Business Partnerships
Joe Hennessey

Grant Opportunities for Academic Liaison with Industry
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AAAS Fellow
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Innovation through Partnerships

Education Applications
Glenn Larsen, Ian Bennett,



IIP Budget (in Millions)

	2007	2008	2009	2009 ARRA
Small Business	\$ 108.23	\$ 109.00	\$ 119.2	\$ 49.91
Academic	\$ 21.86	\$ 21.76	\$ 21.73	\$ 4.4
Total	\$130.09	\$130.77	\$140.93	\$54.70

1. Small Business Innovation Research (SBIR)
Set-Aside = 2.5% extramural research \$ of NSF
2. Small Business Technology Transfer (STTR)
Set-Aside = 0.3% extramural \$



SBIR/STTR Clusters

1. Nanotechnology, Advanced Materials & Manufacturing (NAM)
2. Biotechnology and Chemical Technology (BCT)
3. Information & Communication Technology (ICT)
4. Education Applications (EA)



SBIR/STTR Proposal Pressure

Year		2007	2008	2009
Ph I	proposals	2,114	1,856	1,829
	awards	403	319	370
	Funding Rate	19%	17%	20%
Ph II	proposals	223	306	305
	awards	89	108	146
	Funding Rate	40%	39%	43%

60%
Increase



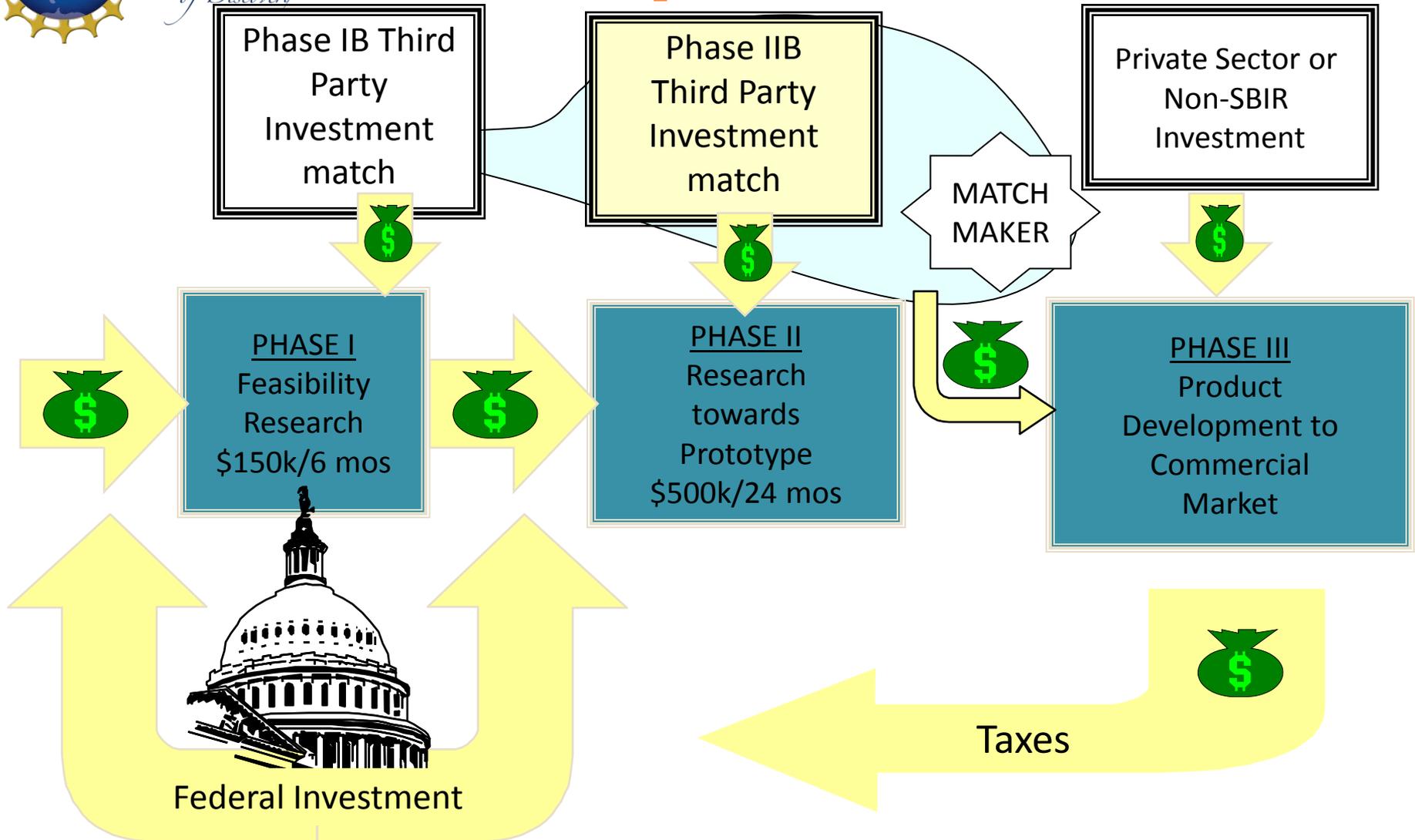
Year	2007	2008	2009	2010
Total # of Proposals	2585	2406	2285	3633



Celebrating
60 Years
of Discovery

NSF SBIR/STTR Innovation Model

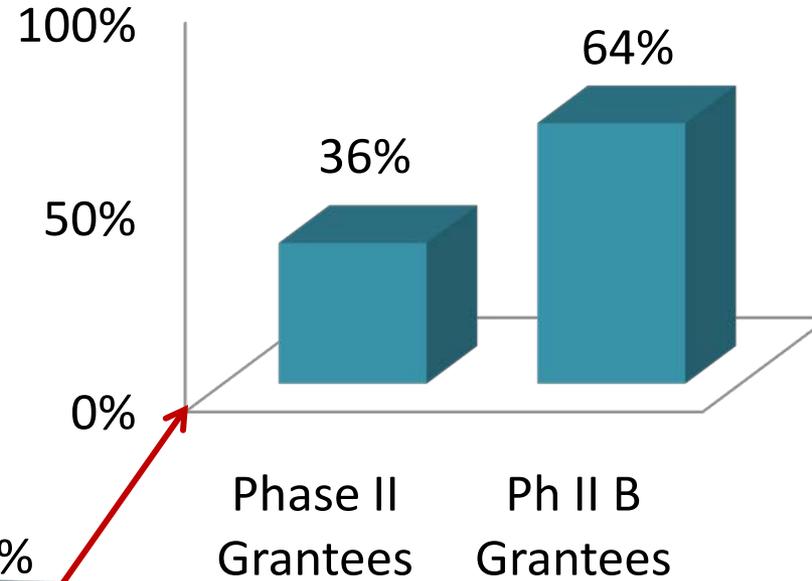
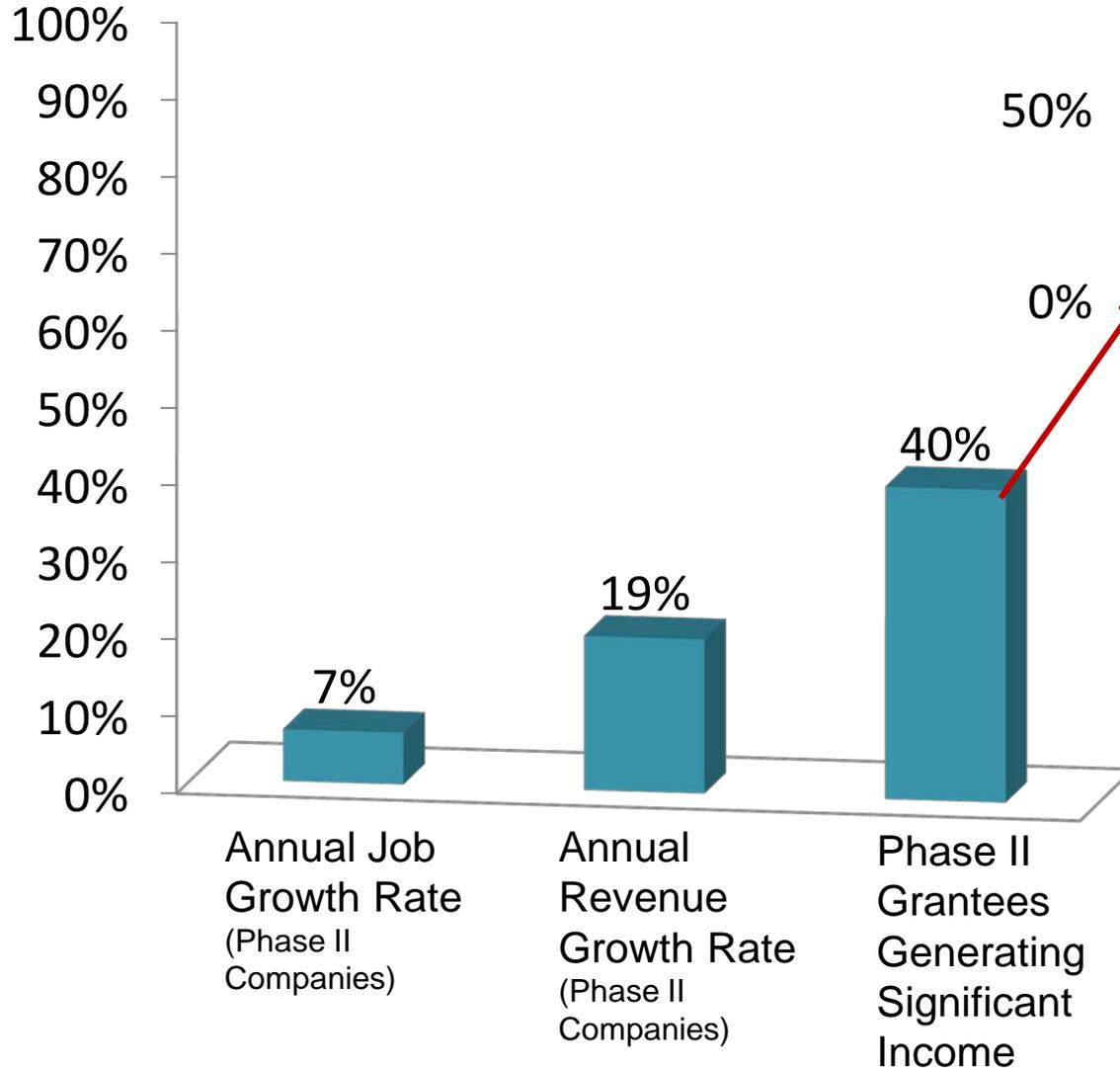
Unique to NSF





Impact on Economy

Phase II Vs Phase IIB Commercialization Rates





Academic Proposal Pressure

		2007	2008	2009	total
GOALI	proposals	231	264	312	807
	awards	95	112	154	361
PFI	proposals	209	29	66	304
	awards	12	14	19	45
I/UCRC	proposals	238	190	228	656
	awards	80	56	90	226



Academic Proposal Pressure

		2007	2008	2009	total
GOALI	proposals	231	264	312	807
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*I/UCRC	proposals	238	190	228	656
	awards	80	56	90	226

*I/UCRC Interagency and International

- DOD, NASA, DOE, DHS, DOC, Justice, NSA
- UK, Northern Ireland, Japan, India, Haiti



I/UCRC: The Mechanism

I/UCRCs work like a research “franchise” with operational guidelines and evaluation tools

**Government
NSF**

Center catalyzed by a small investment from NSF.

NSF takes a supportive role throughout the life of the center.

**I/UCRC
Discovery
&
Innovation**

An I/UCRC is primarily funded by industry members

Single or multi-university

**University
Members**

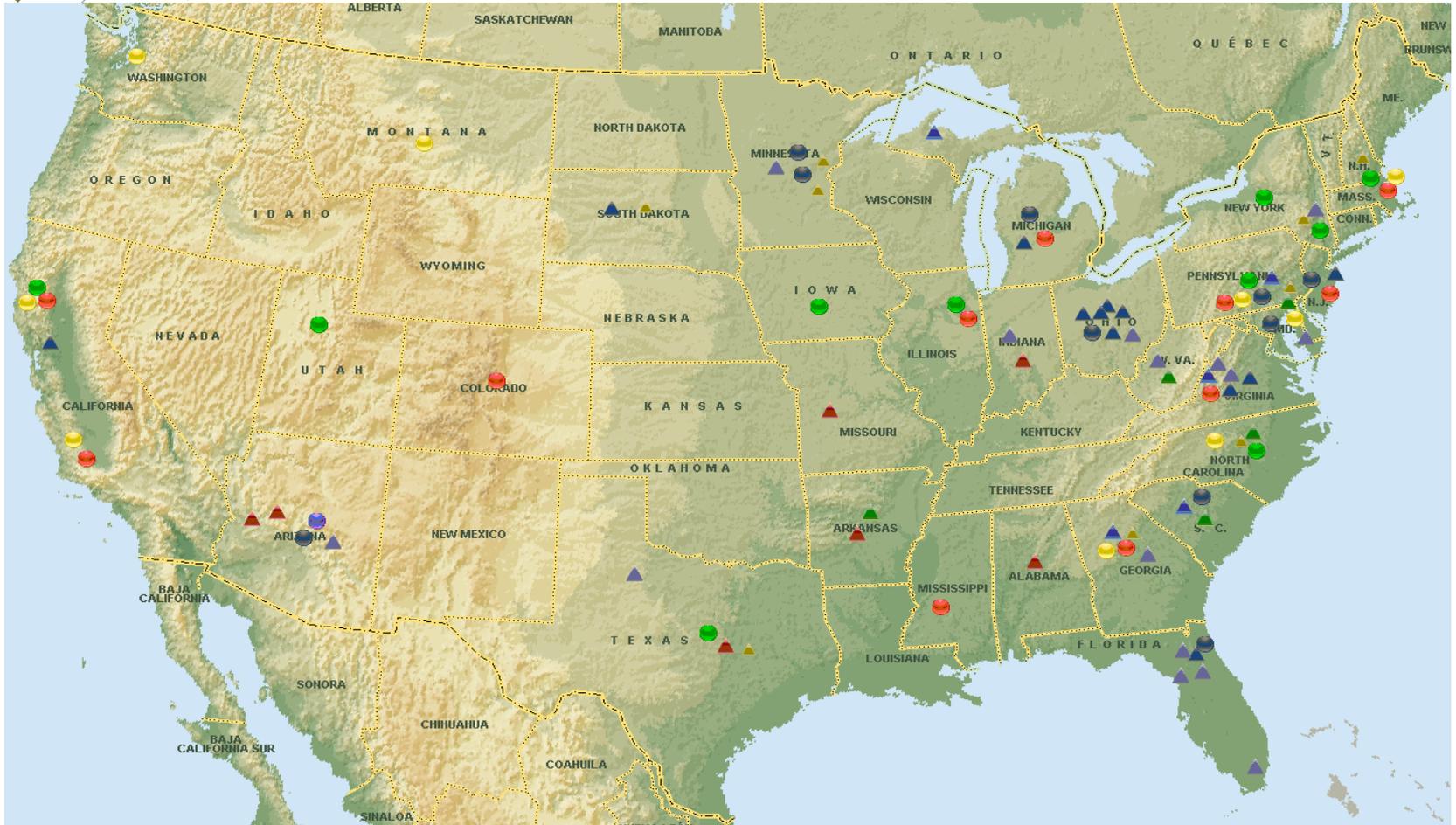
**Industry
Members**



Celebrating 60 Years of Discovery

ERC and I/UCRC Technology Sectors

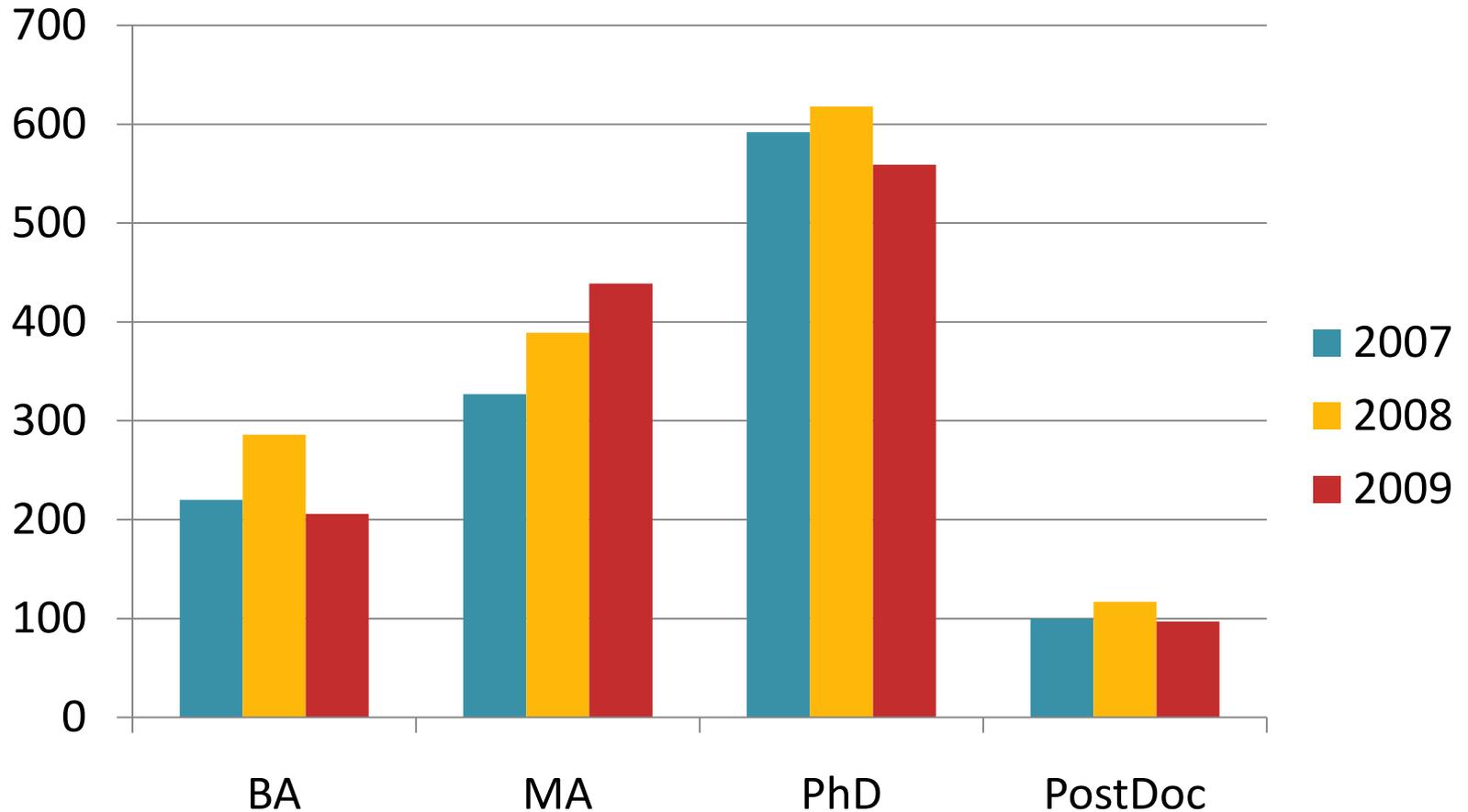
Lead Institution shown (# ERCs ●, # I/UCRCs ▲)



- ▲ Advanced Materials (2, 5)
- ▲ Advanced Electronics (11, 7)
- ▲ Advanced Manufacturing and Fabrication (8, 12)
- ▲ Biotechnology, Healthcare, and Service (10, 9)
- ▲ Energy, Sustainability, and Infrastructure (9, 9)
- ▲ Information, Communication, and Computing (1, 15)

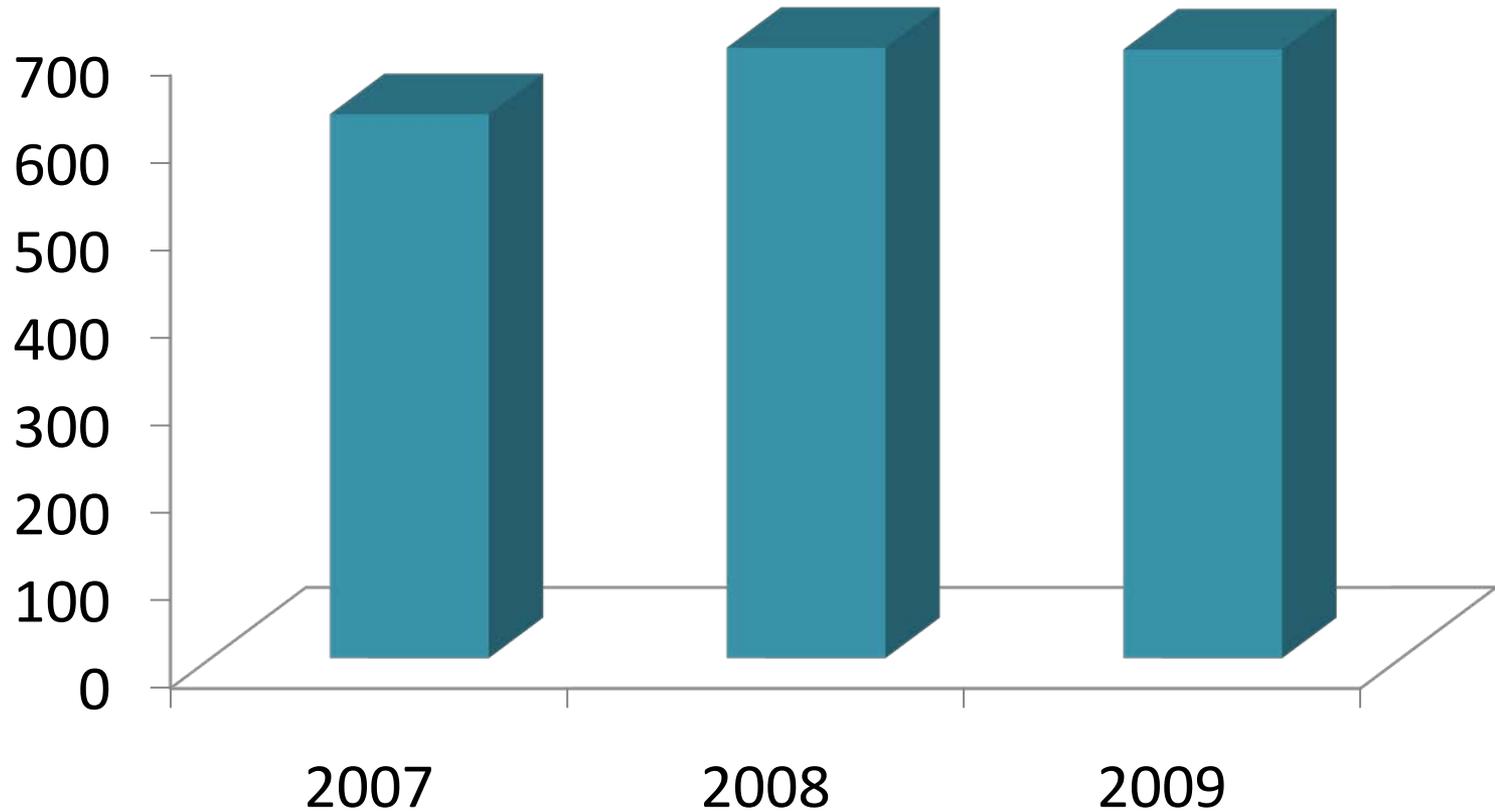


Total Students Supported in I/UCRCs





I/UCRC Total Industry Members by Year





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*GOALI

GOALI provides co-funding to grants from other disciplinary programs



Grant Opportunities for Academic Liaison with Industry (GOALI)

The Mechanisms

- Faculty and Students in industry
- Industry Scientists and Engineers in Academe
- **Industry-University Collaborative Research Projects**



GOALI Award Rates

	DIVISION	GOALI Awarded	GOALI Funding Rate
2007-9	CBET	97	36%
	CMMI	179	42%
	ECCS	72	36%
2007-9	TOTAL	348	39%

Funding Rate for GOALI significantly higher than that for ENG Base



Academic Proposal Pressure

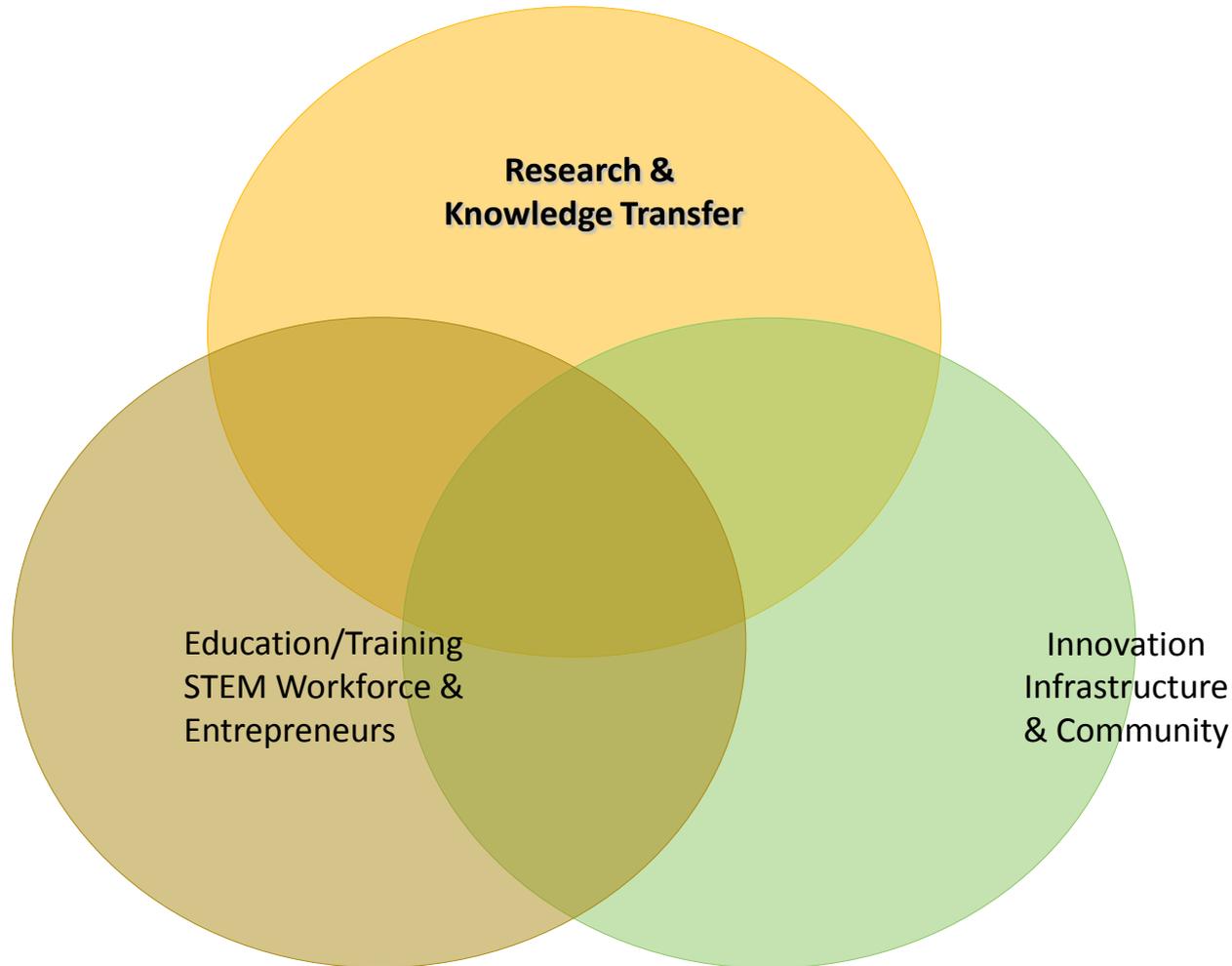
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*PFI History

- Started in 2000
- Funded 171 awards (multi-PI) out of 1210
- Awards at \$600,000 over 3 years
- Innovation Ecosystem across 40 States

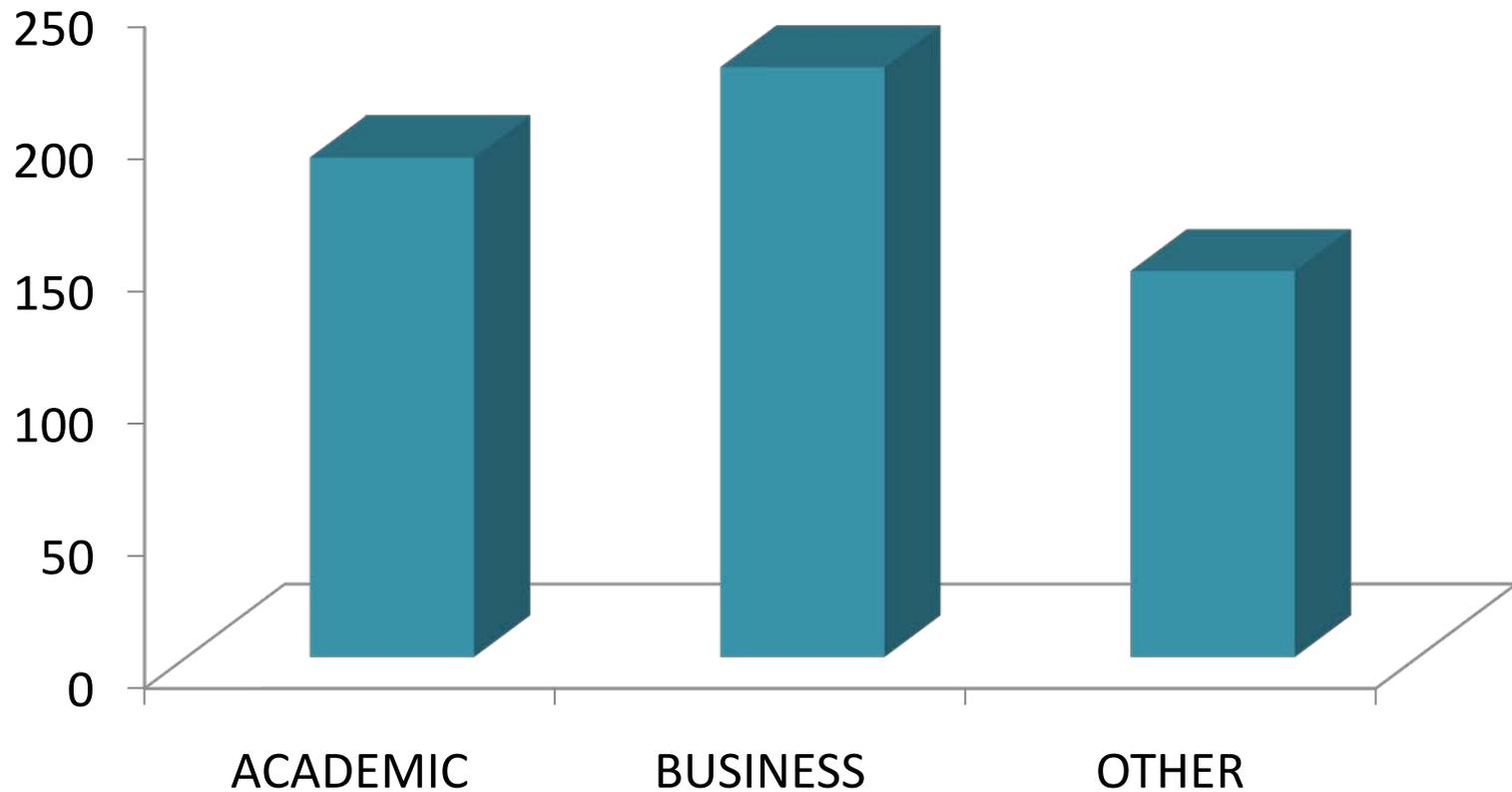


What Do the PFI Partnerships Organize to Do?





Cumulative Active PFI Partnerships





IIP COV Report to ENG AdCom 2007-2009

Louis Martin Vega

Tom Knight*

*ENG AdCom Member,
Chair, SBIR/STTR AdCom
Subcommittee



Strengthening Programs

2010

- Industry Inspired Fundamental Research (IRI)
- i6 Regional Innovation Challenge (EDA)
- Partnerships between Centers & Small Businesses
 - SBIR/STTR with I/UCRC & ERC
- Post-docs in SBIR/STTR (ASEE)
- SBIR 2.0 (SBA)
 - Robotics Joint Solicitation (5 agencies)



IIP Budget Request for 2011 (in Millions)

	2007	2008	2009	2009 ARRA	2010	2011 Req.
Small Business	\$ 108.23	\$ 109.00	\$ 119.2	\$ 49.91	\$125.77	\$142.86
Academic	\$ 21.86	\$ 21.76	\$ 21.73	\$ 4.4	\$26.23	\$22.91
Innovation Ecosystem						\$12.00
Total	\$130.09	\$130.77	\$140.93	\$54.70	\$152.00	\$177.77

*Innovation Ecosystem

Intensive OSTP/ENG discussions led to targeted NSF budget request in 2011



Promoting Innovation and Economic Growth

Promote the commercialization of promising technologies:

The Budget proposes \$12 million for the National Science Foundation (NSF) for a new Innovation Ecosystem in which universities partner with other institutions to increase the impact of the most promising innovations through commercialization, industry alliances, and start-up formation.

Office of Science and Technology Policy , February 1, 2010

With community input, NSF designed two new solicitations to encourage translation of new knowledge to economic or societal impact:

**Accelerating Innovation Research (AIR), and a
'reinvented' Partnerships for Innovation (PFI)**



Components of New Solicitations for 2011

Single Investigator and Small Groups of Faculty

- Accelerating Innovation Research Option 1:

- Technology Translation Plan Competition (AIR/\$4M)

- Partnerships for Innovation:

- Academic - Small Business Technology Platform (PFI\$7M)

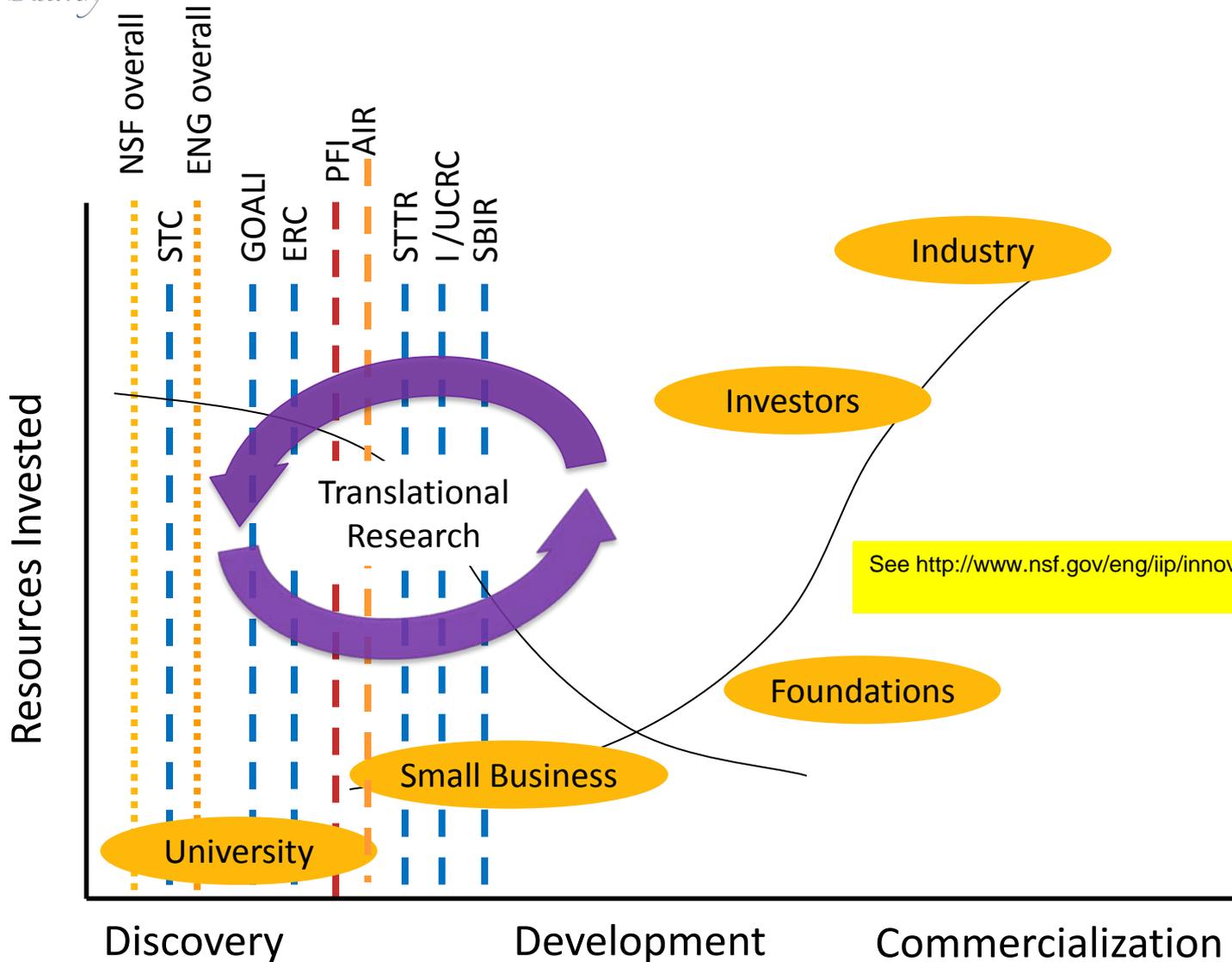
Partnerships of Large Research Groups

- Accelerating Innovation Research Option 2:

- Research Alliance Competition (AIR/\$8M)



NSF Innovation Investments



See <http://www.nsf.gov/eng/iip/innovation.pdf>



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