



Experimental Program to Stimulate Competitive Research (EPSCoR)

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NSF OD/OIA/EPSCoR

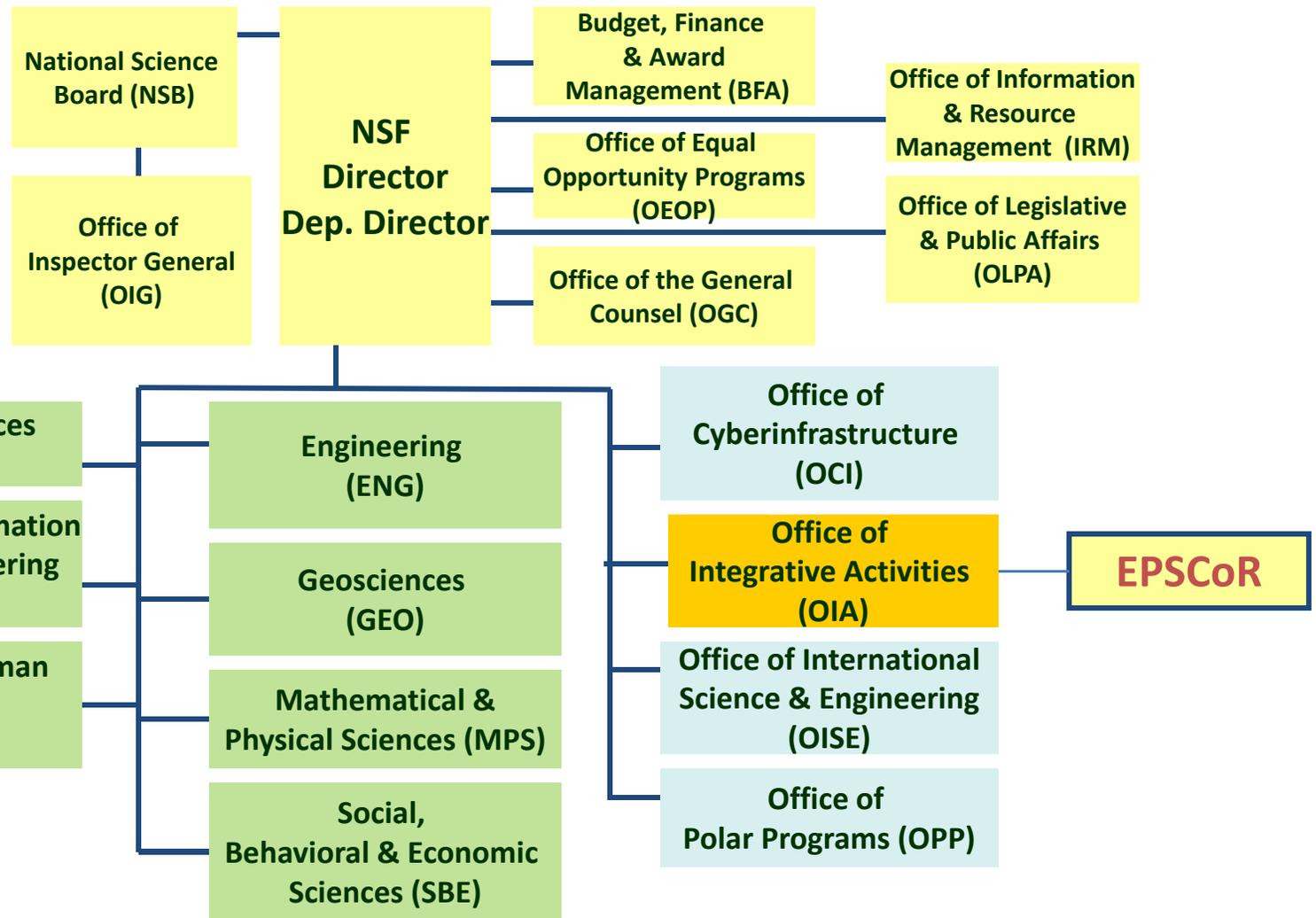
**Nashville, TN
March 21, 2011**



What is EPSCoR?

- State-based capacity-building program
 - Governance includes State committee
 - Alignment with State S&T plan
 - Research driven: ***Science First!***
 - State co-investment – 20% Cost Sharing
 - Economic development
- Multidisciplinary
- Multi-institutional
- Close interaction between NSF and the EPSCoR community

NSF Organizationally



Directorates/Divisions → Colleges/Departments
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EPSCoR in Context

- Established by NSB Resolution in 1978
- Target: States receiving lesser amount of NSF research support funding
- Purpose: To build sustainable capacity of educational institutions in those states to compete more successfully in NSF and other research programs



EPSCoR Objectives

- Build research capacity, competitiveness
- Broaden individual, institutional participation in STEM
- Promote development of a technically engaged workforce
- Foster collaborative partnerships
- Multi-faceted State based Programs



EPSCoR:

Multi-faceted State-wide Programs

- State-based capacity-building program
 - Governance includes State committee
 - Alignment with State S&T plan
 - Research driven: Lead with Science
 - State co-investment –20% Cost Sharing
 - Encourage economic development
- Multidisciplinary and multi-institutional
- Close interaction between NSF and the EPSCoR community



NSF EPSCoR Jurisdictions

1980

Arkansas
Maine
Montana
South Carolina
West Virginia

1985

Alabama
Kentucky
Nevada
North Dakota
Oklahoma
Puerto Rico
Vermont
Wyoming

1987

Idaho
Louisiana
Mississippi
South Dakota

1992

Kansas
Nebraska

2000

Alaska

2001

Hawaii
New Mexico

2002

U.S. Virgin Islands

2003

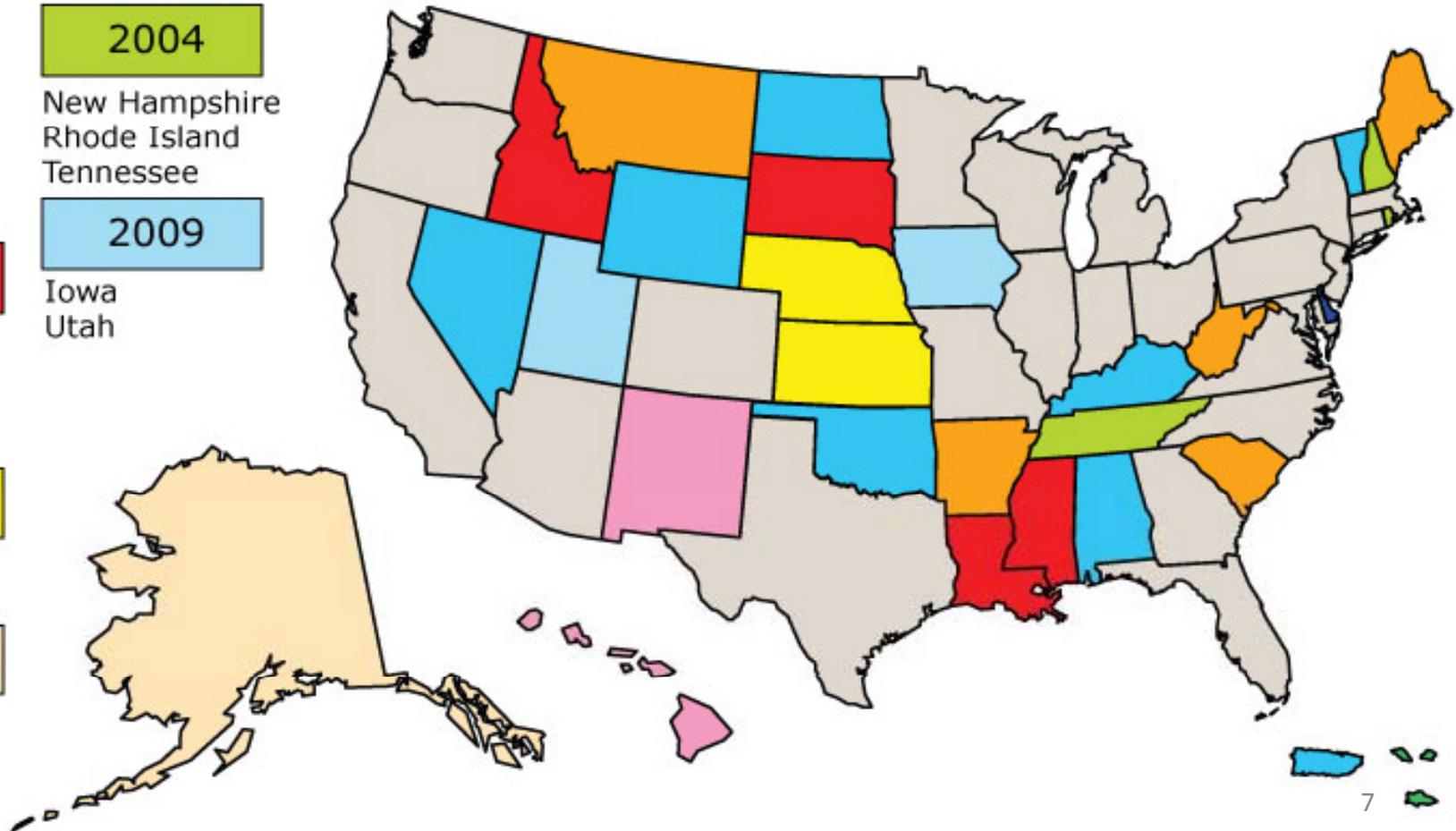
Delaware

2004

New Hampshire
Rhode Island
Tennessee

2009

Iowa
Utah





EPSCoR Today

In the 29 EPSCoR jurisdictions:

- 21% of the nation's total population
- 24% of the research institutions
- 16% of the employed scientists and engineers



EPSCoR Today (+)

Also,

- 22% of the nation's African-Americans
- 36% of its American Indians and Alaskan Natives
- 31% of its Native Hawaiians and Pacific Islanders
- 16% of its Hispanics



EPSCoR Today (+)

As well as:

- 52 of the nation's 105 HBCUs (50%)
- 74 of the nation's 257 Institutions with High Hispanic Enrollment (29%)
- 22 of the nations 32 TCUs (69%)

Great Opportunity for Leverage

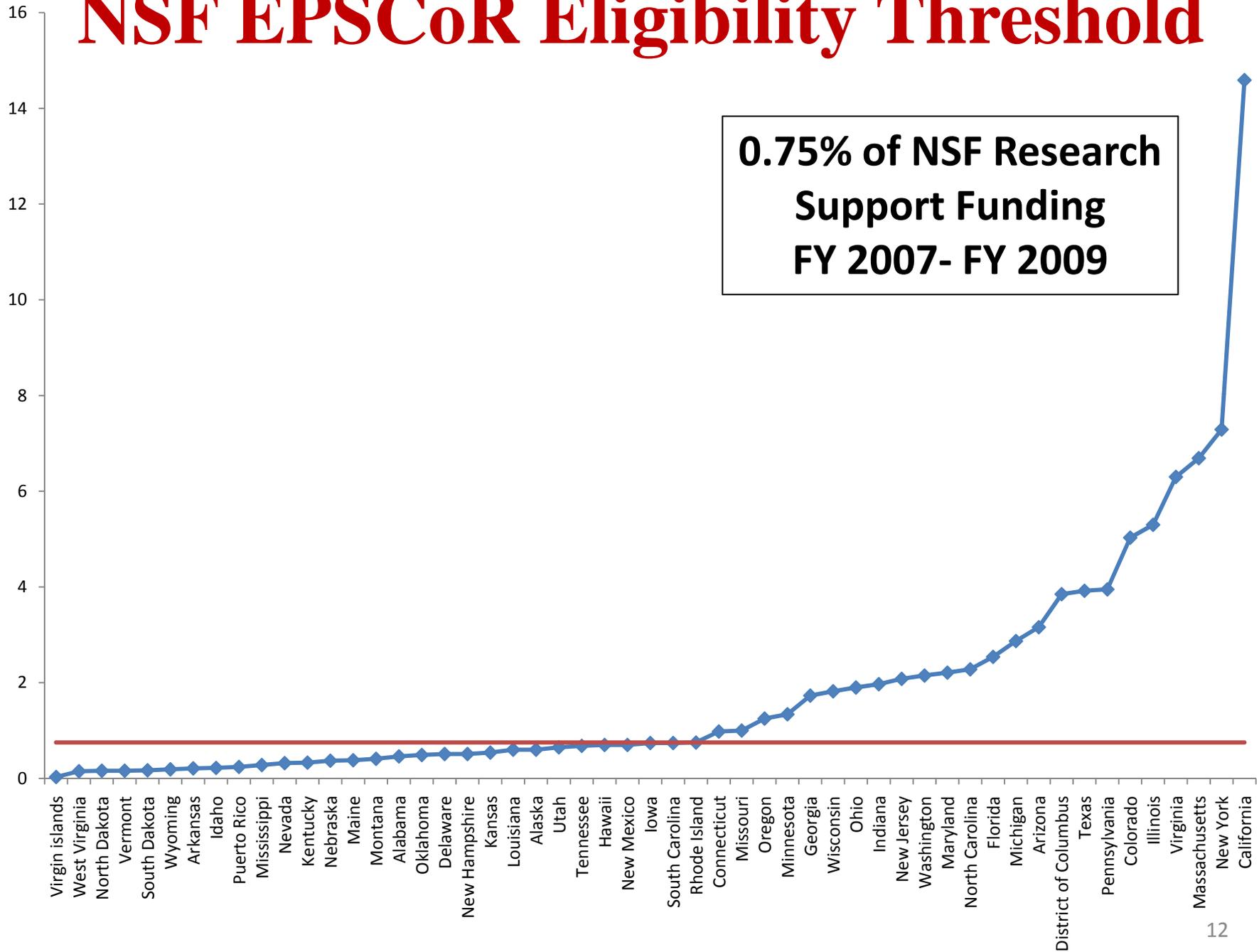


EPSCoR Today (+)

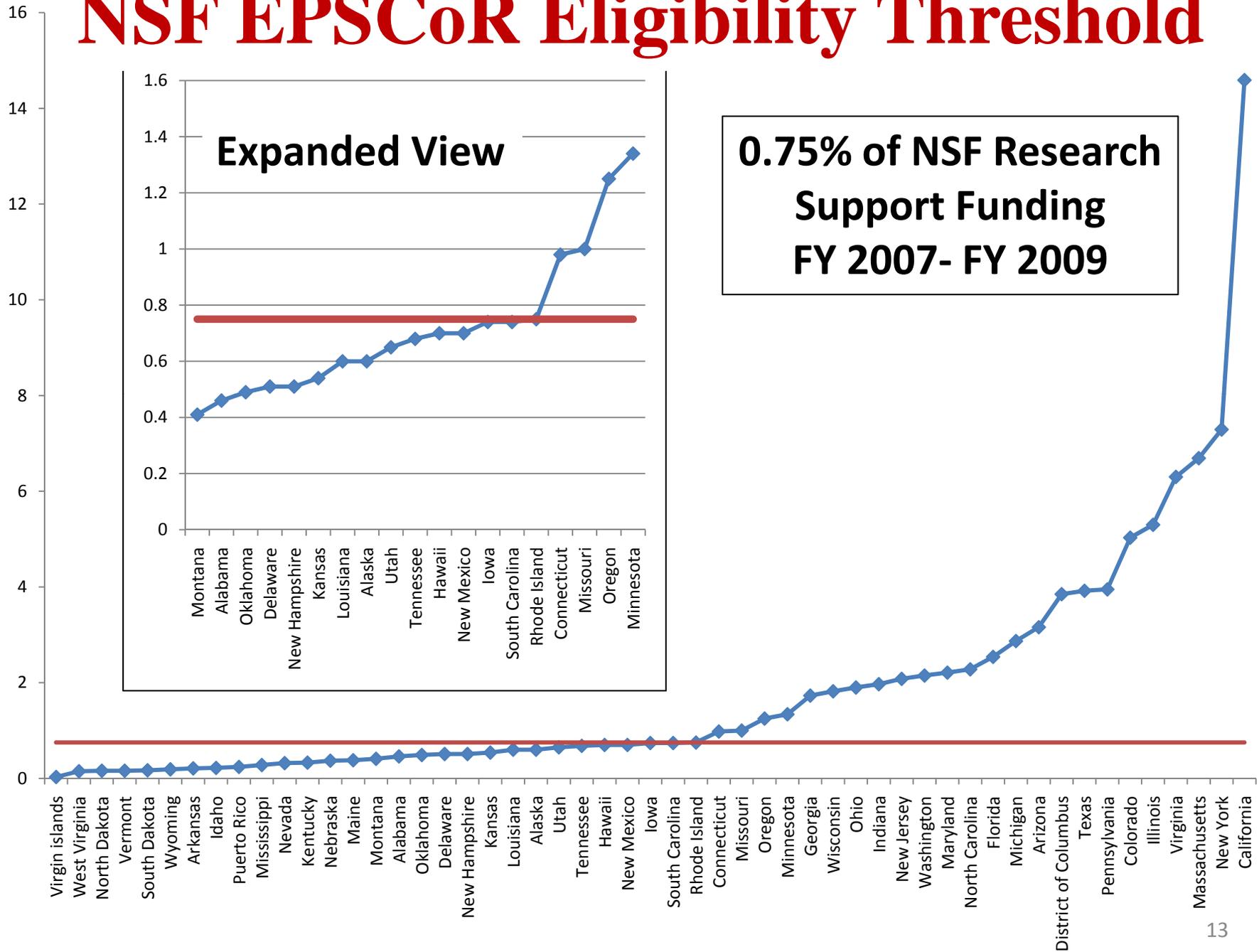
These same 29 EPSCoR jurisdictions:

- Receive about 12% of all NSF research funding

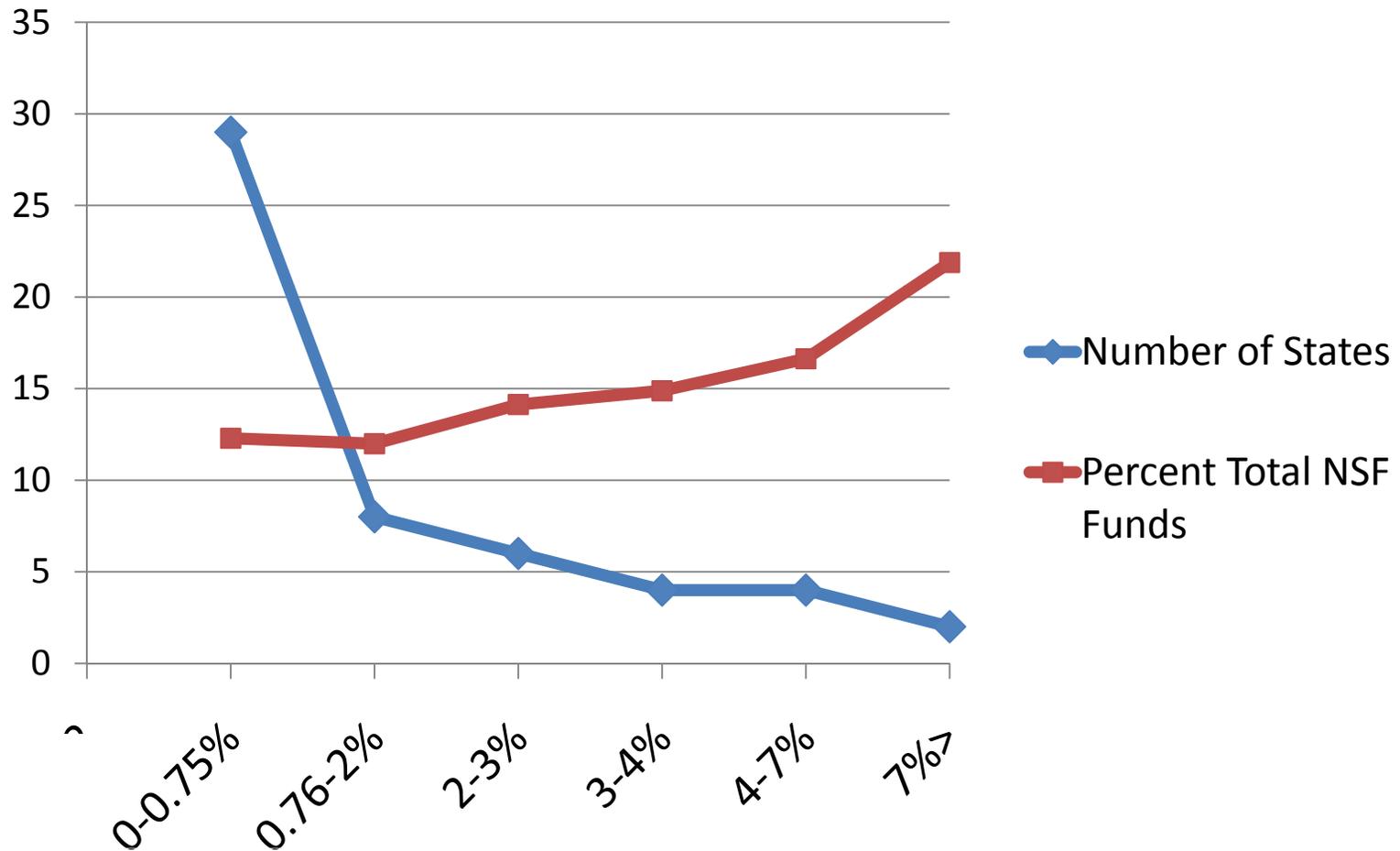
NSF EPSCoR Eligibility Threshold



NSF EPSCoR Eligibility Threshold



NSF Funding Distribution





EPSCoR

Investment Strategies

- Research Infrastructure Improvement Awards (RII)
 - Support physical, human, and cyber infrastructure within academic institutions at the state level
 - Proposals from eligible jurisdictions submitted by a designee of the jurisdiction's governing committee
- Co-Funding with NSF Directorates and Offices
 - Supports individual investigators and groups from EPSCoR jurisdictions by co-investment with disciplinary research programs in their meritorious proposals
- Outreach Activities and Workshops
 - Brings EPSCoR jurisdiction investigators together with NSF program staff; builds mutual awareness and transparency



RII Track-1

- RII Track-1
 - Up to 5 years and \$20M
 - Jurisdiction-based
 - Improve physical, human, & cyber infrastructure critical to R&D competitiveness in priority research areas
 - Science area determined by state committee
- In FY 2010: 14 Proposals; 7 Awards
- In FY 2011: 7 eligible juris.; Awards June 2011



Track 1 in FY11

<u>Event</u>	<u>Target</u>
<u>Date</u>	
New Solicitation Released	07/01/10
Proposals Due	10/01/10
Review Panel	Nov 2010
DRB Review	Mar 2011
Awards Announced	May 2011
Start Dates	Jul 2011



RII-Track 2

- Up to 3 years and \$6M
- Consortia-based
- Support innovation-enabling CI of regional, thematic, or technological importance

- In FY 2009: 9 Proposals; 7 Awards (5 ARRA)
- In FY 2010: 4 Proposals; 2 Awards
- In FY 2011: 6 eligible jurisdictions, due March 14



Track2 in FY11

<u>Event</u>	<u>Target</u>
<u>Date</u>	
New Solicitation Released	12/13/10
Proposals Due	03/14/11
Review Panel	May 2011
Awards Announced	July 2011
Start Dates	July 2011



RII Cyber Connectivity (C2)

- Up to 2 years and \$1M
- Jurisdiction-based
- Support the enhancement of inter-campus and intra-campus cyber connectivity and broadband
- In FY 2010: 23 Proposals; 17 Awards (ARRA)
- In FY 2011: 10 eligible jurisdictions



C2 in FY11

<u>Event</u>	<u>Target</u>
<u>Date</u>	
New Solicitation Released	07/14/10
Proposals Due	11/04/10
Review Panel	Jan 2011
Awards Announced	Apr 2011
Start Dates	Jun 2011



How are EPSCoR Proposals Different



NSB Merit Review Criteria

- What is the intellectual merit of the proposed activity?
 - Advancing knowledge and understanding within or across fields
 - Qualifications of the proposer (individual or team)
 - Inclusion of original, or potentially transformative concepts
 - Organization of project
 - Availability of sufficient resources
- What are the broader impacts of the proposed activity?
 - Advance discovery and understanding while promoting teaching, training, and learning
 - Broaden the participation of underrepresented groups
 - Gender, ethnicity, disability, geographic
 - Enhance the infrastructure for research and education
 - Disseminated of results
 - Benefits of the proposed activity to society?



Strategic Fidelity and Impact

- How are the proposed infrastructure, education, external engagement and technology transfer plans aligned with the central research themes?
- How do the proposed plans utilize the strengths and opportunities identified in the proposal and how do the plans address barriers?
- How clearly is the proposed research positioned in the context of other efforts in the field?
- What meaningful impact on capacity and capability in the jurisdiction is expected as a result of this proposed project?
- Is there ample evidence that the project will build strength that can be used, alone or in regional collaborations, to address scientific issues of regional relevance and national importance?
- What is the level of integration among shared facilities and research partners and is it sufficient?
- How does each proposed component contribute to an identifiable strategy for intensifying competitiveness in research and innovation?



Value Added

- How do the proposed activities add value at the institutional, jurisdictional, and regional levels in research, education and innovation?
- How will the magnitude of the additional value be measured?
- How does the project advance the jurisdiction's innovation and economic development e.g., through greater emphasis on creativity, inventiveness, technology transfer, potential commercialization, and/or national research competitiveness?
- How do the proposed activities promote organizational connections and linkages within and between jurisdictions, schools, private and public sector?
- Are the scope and depth of the proposed activities appropriate to achieve the greatest project impacts?
- Are the leadership, faculty and student teams diverse in gender, race, and ethnicity?
- How will the implementation of the proposed strategic plan result in increased diversity in the jurisdiction's and/or nation's workforce?



Cyberinfrastructure (CI) Plan

- How well does the CI plan support and integrate with the jurisdiction's science and technology plan?
- To what extent is the CI plan likely to enhance capacity for discovery, innovation, and education in science and engineering?
- How well does the plan as presented position the proposing jurisdiction for future CI development?



Diversity Plan

- How will the diversity plans broaden participation in the research and education activities of the proposed project?
 - Institutions (incl MSI), women and underrepresented groups in STEM, persons with disabilities, economically disadvantaged, rural, first generation college students
- How will the proposed activities achieve a significant and sustained impact in the targeted research and education populations within the consortium?
- What novel and effective ways are proposed to reach non-traditional populations and underrepresented groups in STEM?



Workforce Development Plan

- What are the transformative and /or innovative features?
- How well do the WFD plans include all demographic sectors of the jurisdiction's population?
- How do the plans intend to broadly and effectively engage the jurisdiction's institutions in the integrated WFD program?
- How will the plans and activities lead to transformative improvements in workforce preparation and the competitiveness of the jurisdiction?
- What specific program(s) for secondary school teachers and faculty and students from MSI, 2, and 4-year institutions?
- What synergy exists among the proposed programs, the jurisdiction's S&T and economic priorities, and other ongoing activities in the jurisdiction?



External Engagement Plan

- How will the proposed internal communications enable the efficient sharing of data and information among the project's partners?
- How does this network take advantage of CI and integrate with the CI plan?
- What is the process for the dissemination of project results to the scientific community, the jurisdiction, other EPSCoR jurisdictions and the general public?
- What mechanisms are described as communication pathways to the NSF EPSCoR Office and are they likely to be effective?



Evaluation and Assessment Plan

- How effective is the proposed plan likely to be in measuring the outputs and outcomes of the project?
- How clear and appropriate are the proposed metrics and criteria for measuring project accomplishments according to a well-defined schedule?
- How will the clearly defined processes result in reliably capturing metric-related data and reporting it in a timely manner?
- How will the evaluation process and results be used by project leadership for monitoring and management?
- How do the formative and summative evaluation plans assess current status, major impacts, and future directions?
- How adequately resourced are the evaluation and assessment tasks?
- Are the independent, external evaluators appropriate?



Sustainability Plan

- How clear, reasonable and viable are the plans for sustainability?
- How will the proposed activities foster and sustain the activities and/or innovation in the long-term following EPSCoR support?
- How will each of the project's partners contribute to sustainability and how will the partnership evolve to ensure future progress in research, research-based education and innovation?



Management Plan

- How will the management structure impact the potential effectiveness of the leadership team?
- How do the Project Directors and the management team demonstrate the vision, experience and capacity to manage a complex, multi-faceted research, education, and knowledge transfer enterprise?
- Are the membership and roles of the jurisdiction's EPSCoR governing committees and external advisors plainly identified, and is their involvement in the project apparent, logical, and free of conflicts of interest?
- Are plans for technical assistance appropriate and are the anticipated providers of such assistance appropriately qualified?



**Any questions on the RII
programs?**



Co-Funding

- Joint support
 - Proposals submitted by EPSCoR researchers
 - Proposals submitted to non-EPSCoR NSF programs
- Merit reviewed and recommended for award
 - Could not be funded without the combined, leveraged support of EPSCoR and the Research and Education Directorates and Offices



Co-Funding Essentials

- Reviewed and Recommended for Funding within NSF Directorates and Offices
- Characteristics favoring Co-funding:
 - New PIs
 - Collaborative
 - Multidisciplinary
 - Synergistic w/ NSF investment
 - Broaden participation
 - Instrumentation
 - R/T Ops for St/Tchrs
 - Integration of R&E
- Tipping Point is Financial!



What can a PI do about Co-funding?

- Mention being an EPSCoR state in your proposal
- Talk about how your work relates to the current EPSCoR awards in your jurisdiction
- Remind the PO of the program you submitted to you're from an EPSCoR state and may be eligible for co-funding
- When you're on a panel, mention this in your review
- DO NOT contact the EPSCoR office
 - We only work directly with the program PO for co-funding



Leveraged Support FY10

- 397 Requests; 268 awards,
- \$44.8 M EPSCoR investment

- Total project awards: \$129M

- Leverage of 2.88 across NSF



FY10 Co-Funding by Award Type (\$M)

Type	EPSCoR	NSF Tot		Type	EPSCoR	NSF Tot
CAREER	10.5	23.7		GOALI	0.17	0.38
IIA	12.3	29.7		PFI	0.20	0.6
HR Dev	4.5	28.1		Workshop	0.10	0.35
Collabs	4.4	10.1		CCLI	0.95	1.97
UG	3.8	8.2		Centers	0.71	5.6
Equip	1.1	2.3		Internatnl	0.65	5.5
CDI	1.1	2.1		Other	3.18	7.18
ATE	1.2	3.3		Totals:	44.82	129.08

HR Dev: GK-12; HBCU-UP; TCUP

UG: REU, RET, RUI, UBM



FY10 Co-Funding by Jurisdiction (\$M)

JD	Num	EPSCoR	NSF Tot		JD	Num	EPSCoR	NSF Tot
AK	3	0.39	0.80		KY	11	1.68	4.20
AL	23	3.41	11.06		LA	18	3.16	9.30
AR	10	1.24	2.65		ME	6	1.12	2.47
DE	7	1.31	3.25		MS	18	3.36	9.77
HI	8	1.50	7.81		MT	5	0.78	1.66
IA	12	2.64	7.85		ND	7	1.95	10.64
ID	6	0.77	2.06		NE	10	1.68	3.62
KS	12	2.07	5.25		NH	8	1.14	2.93



FY10 Co-Funding by Jurisdiction (\$M)

- continued -

JD	Num	EPSCoR	NSF Tot		JD	Num	EPSCoR	NSF Tot
NM	12	1.82	4.48		TN	13	2.50	5.61
NV	4	0.63	4.72		UT	14	1.98	4.53
OK	13	1.83	4.24		VI	1	0.19	0.50
PR	6	1.09	2.61		VT	5	0.65	1.47
RI	5	0.75	2.55		WV	4	0.55	1.22
SC	15	2.45	5.65		WY	3	0.54	1.50
SD	8	1.65	4.71		Tot	268	44.82	129.08



FY 10 Co-Funding

DIR/Off	# Request	# Cofund	Cofund (\$ M)	Total (\$ M)	Leverage
BIO	65	40	7.2	18.4	2.6
CISE	68	39	6.3	14.6	2.3
EHR	45	33	8.2	40.7	5.0
ENG	50	35	6.0	12.7	2.1
GEO	44	35	4.3	9.4	2.2
MPS	79	58	9.4	20.9	2.2
OCI	4	2	0.2	0.4	2.2
OISE	5	5	0.5	2.3	4.2
OPP	7	5	0.8	2.2	2.7
SBE	30	16	2.0	4.8	2.4
Total	397	268	44.8	129.4	2.9



Outreach and Workshops

- Brings EPSCoR jurisdiction investigators together with NSF program staff
- Builds mutual awareness and transparency
- If you have an idea for an EPSCoR-oriented workshop
 - First step, contact a PO about feasibility

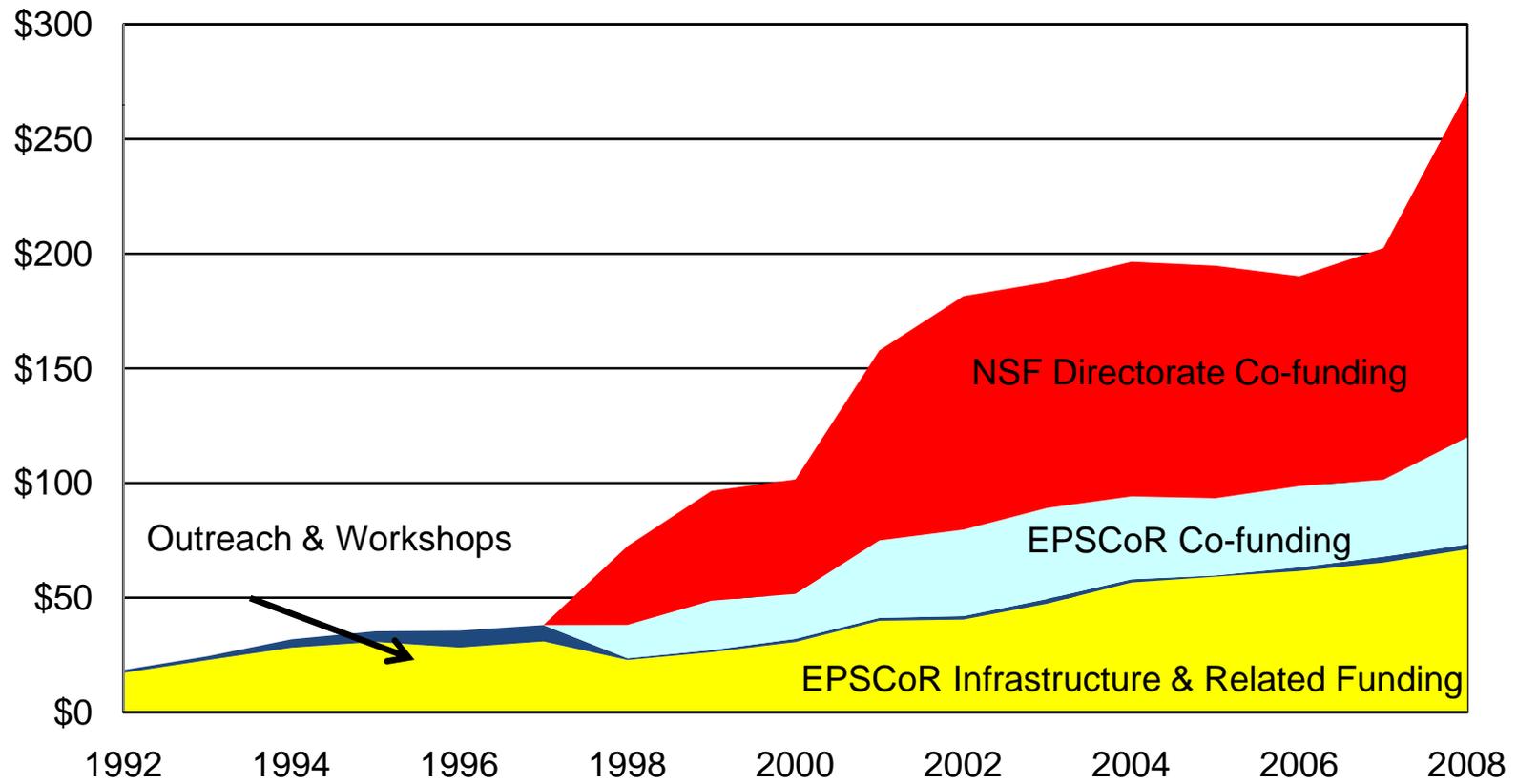


NSF EPSCoR Funding (\$M)

Activity	FY06	FY07	FY08	FY09	FY10
RII	61.7	65.8	72.8	91.5	99.2
Co-Fund	36.4	36.2	46.7	40.0	44.8
Outreach Workshop	0.1	0.1	0.5	1.5	1.4
Total	98.2	102.1	120.0	133.0	145.4



EPSCoR Investments and Leveraged Funds (\$M)





EPSCoR Today

- Attendant to EPSCoR move to OD has been heightened visibility and the need for
 - Sharper research focus
 - Stronger integration across Foundation
- Increase EPSCoR competitiveness through
 - Increased co-funding
 - EPSCoR participation in NSF initiatives
 - Alignment of RII-supported S&E with discovery frontiers in Directorates/Offices

EPSCoR and the MRI Program

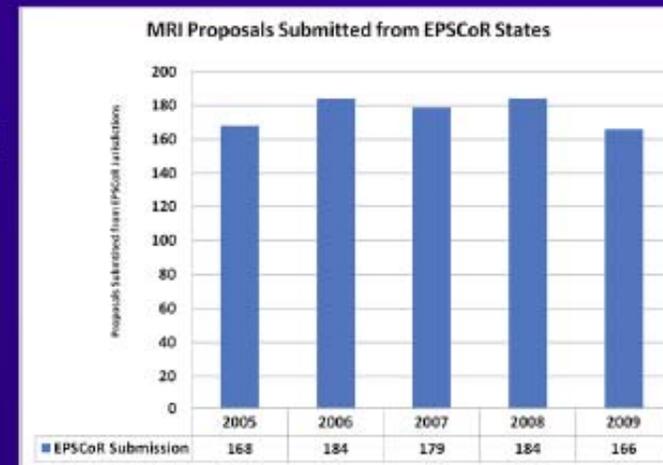
MRI Proposal Success Rates

→ **Comparable success rates**

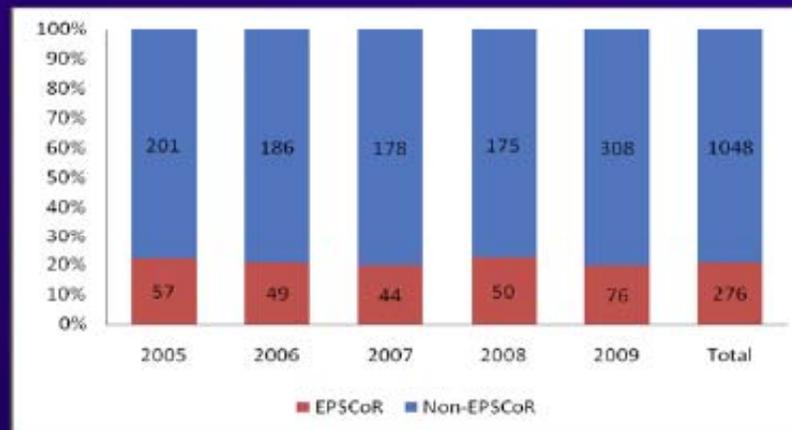
	Non-EPSCoR	EPSCoR	Total
2005	33%	34%	33%
2006	30%	27%	30%
2007	30%	24%	29%
2008	28%	27%	28%
2009	51%	46%	50%
Total	34%	31%	34%

EPSCoR MRI Submissions

→ **Constant rate of submission**



EPSCoR MRI Award % → **Constant award fraction**



OFFICE OF INTEGRATIVE ACTIVITIES



Take Aways

- EPSCoR is a state-based program
 - Multi-disciplinary, multi-institutional
 - Supporting goals of state science and technology plan
- If you want to become involved in EPSCoR
 - Speak to your state committee and representatives
- Approx. 1/3 of budget is spent on co-funding proposals from the other directorates



Additional Information

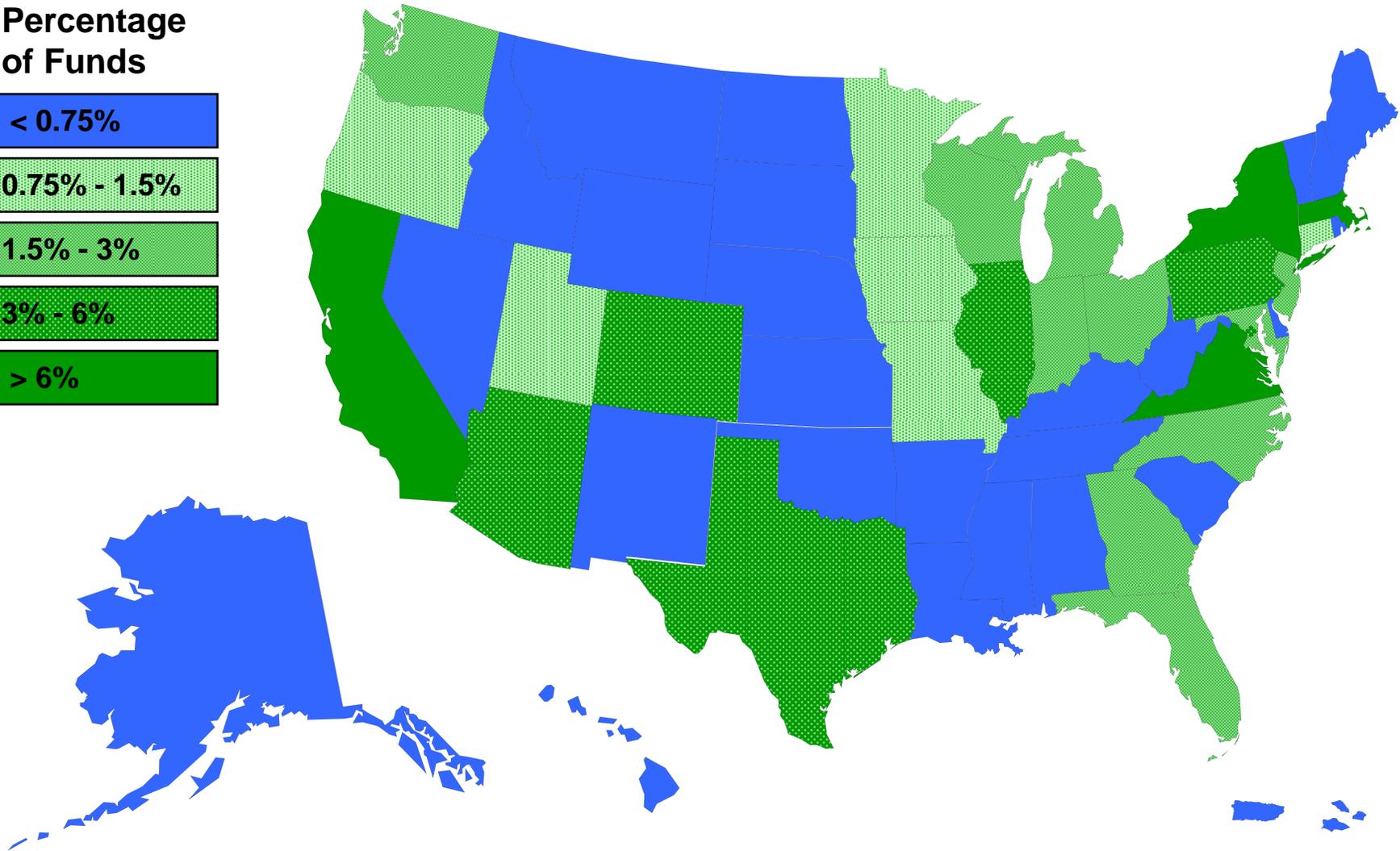
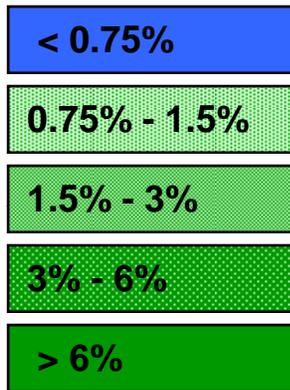
- Jennifer M. Schopf
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<http://www.nsf.gov/od/oia/programs/epscor/about.jsp>



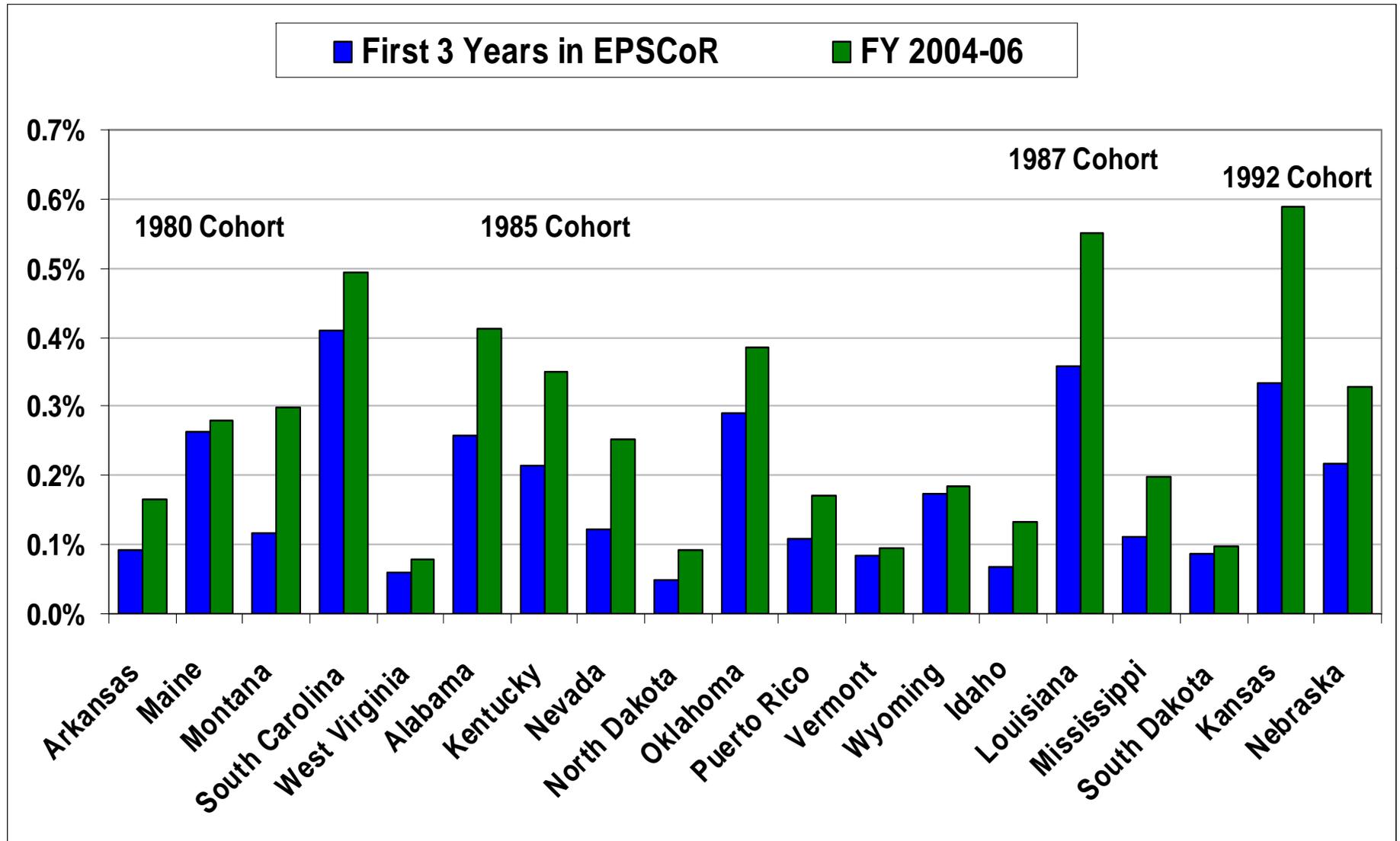
Distribution of NSF Research Funds (FY04-06)

Percentage
of Funds

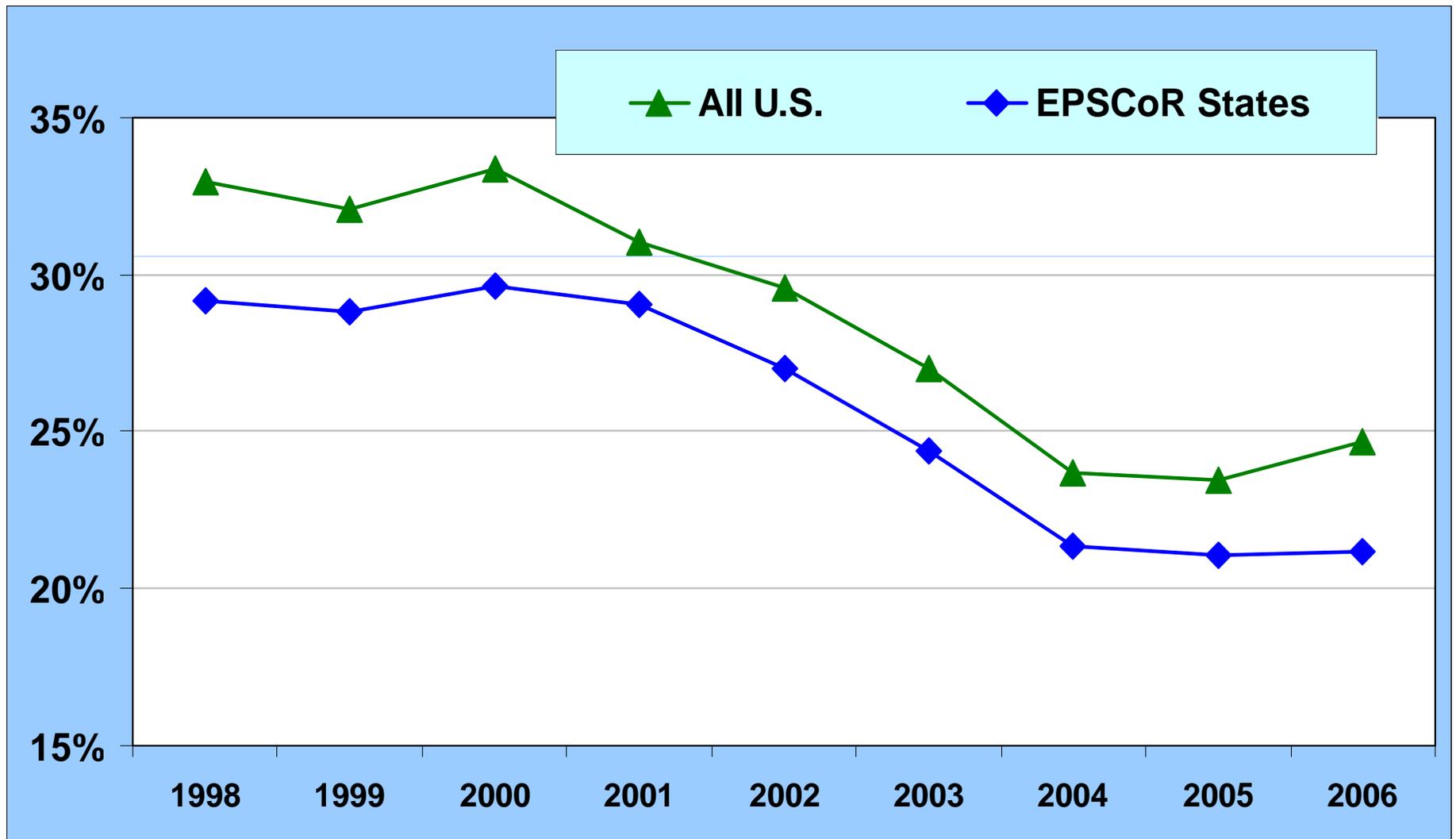


Data source: NSF Budget Internet Information System (BIIS)

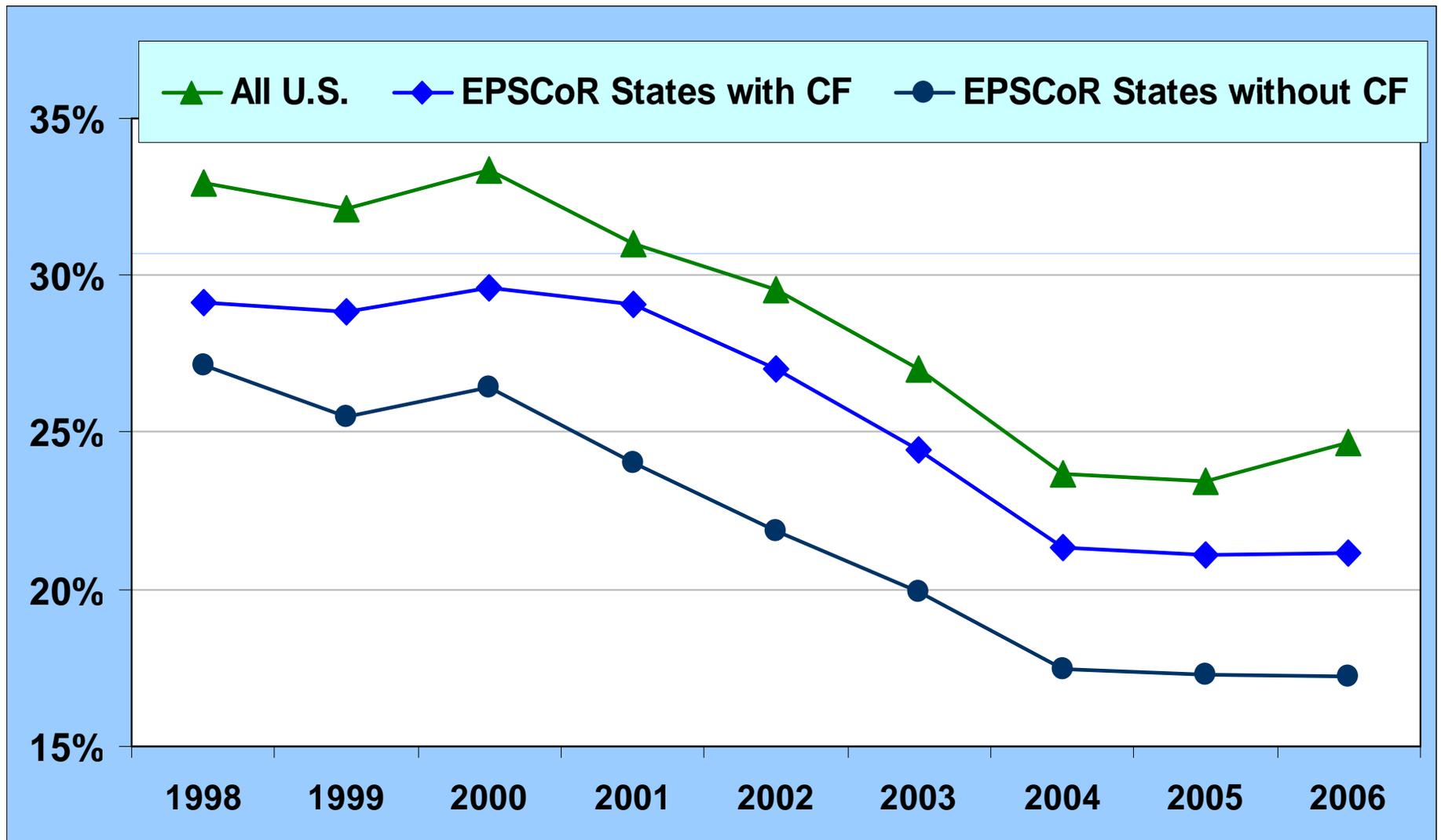
EPSCoR States' Percentage of NSF Research Support Funding



Funding Rate for NSF Proposals: 27 EPSCoR States Compared to All U.S.

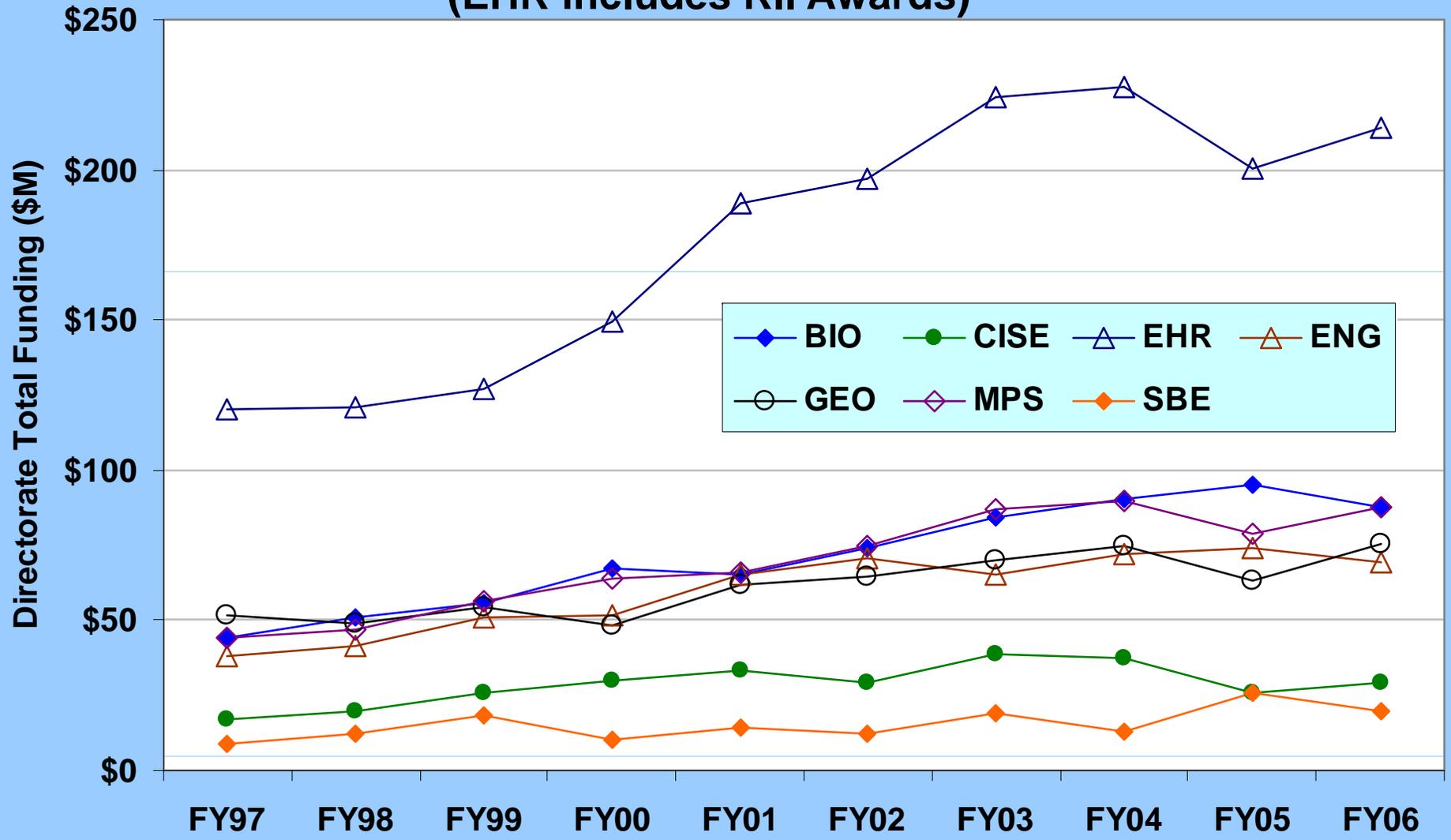


Funding Rate for NSF Proposals: Effect of EPSCoR Co-funding (CF)



NSF Total Funding to EPSCoR States by Directorate

(EHR includes RII Awards)



EPSCoR States' Aggregate % of NSF Total Funding by Directorate

