



Industry/University
Cooperative Research
Centers

IUCRC PROGRAM FINDINGS FROM THE CENTER STRUCTURE DATABASE

FINAL RESULTS: FY 2012-2013

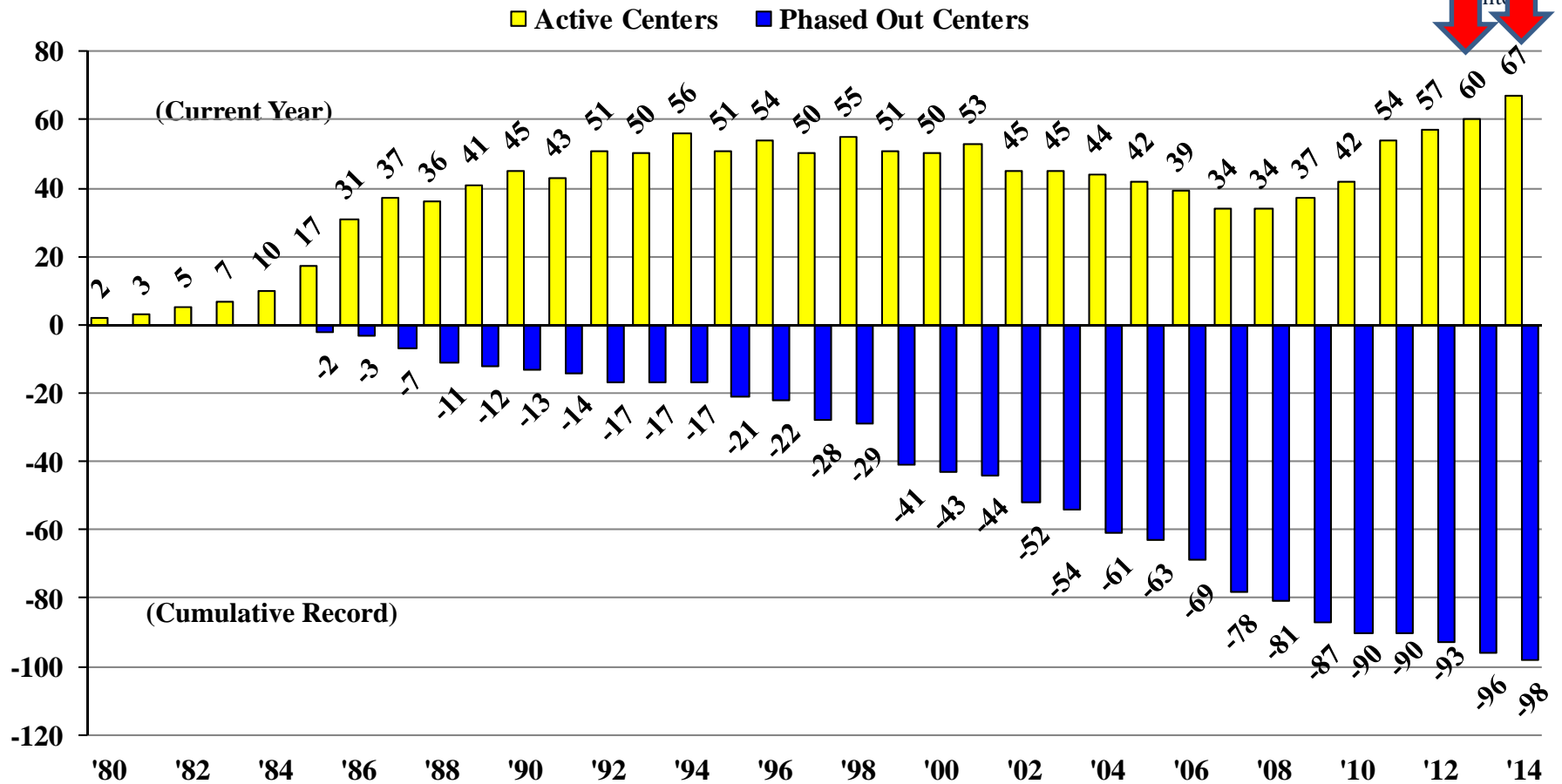
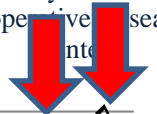
**TRENDS FROM CENTER STRUCTURE DATABASE:
1980-2013**

*Gray, D.O., Leonchuk, O., & McGowen, L.C.
North Carolina State University*

Center Life Cycle*



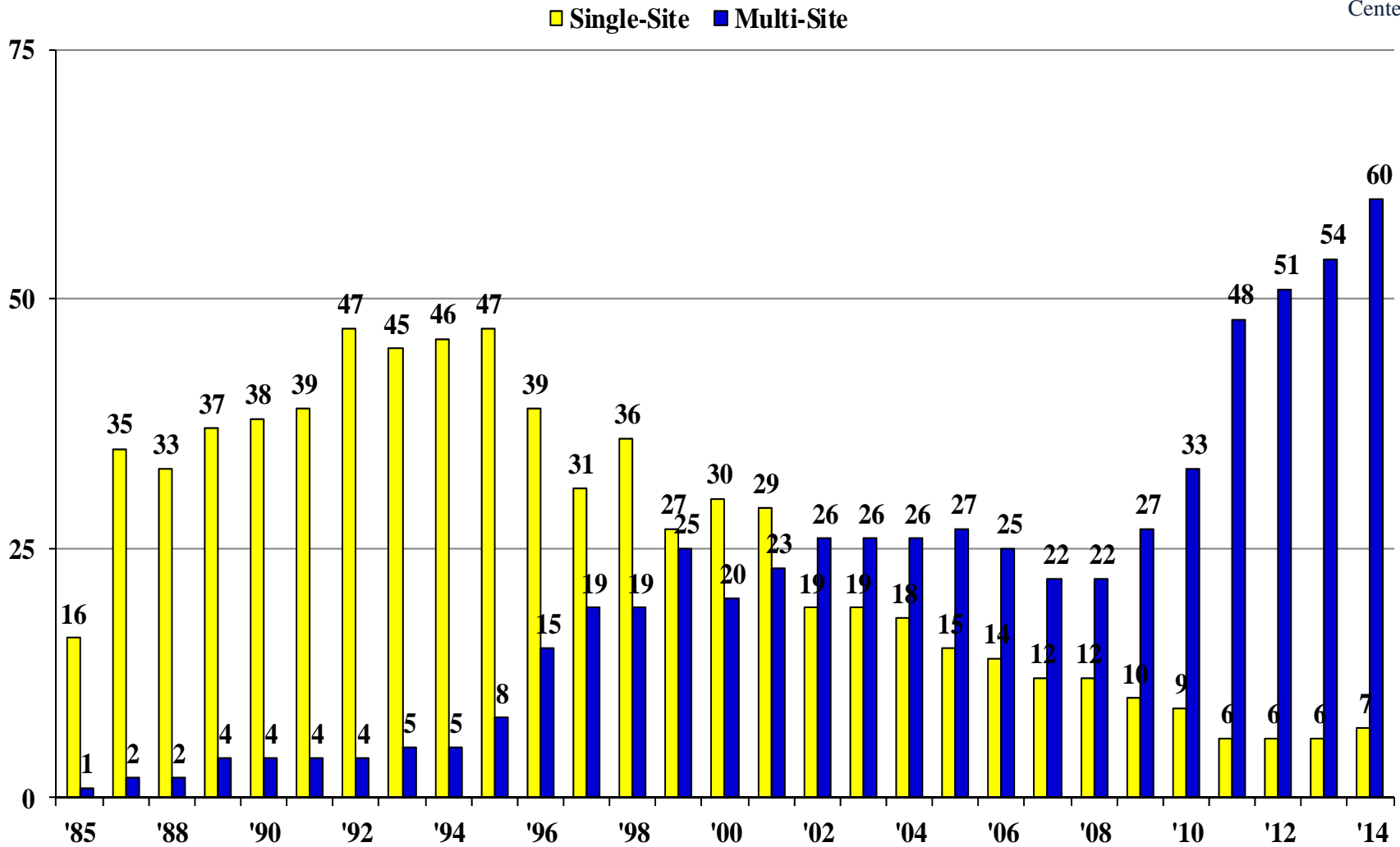
Industry/University
Cooperative
Research
Centers



Single & Multi-Site Centers*



Industry/University
Cooperative Research
Centers



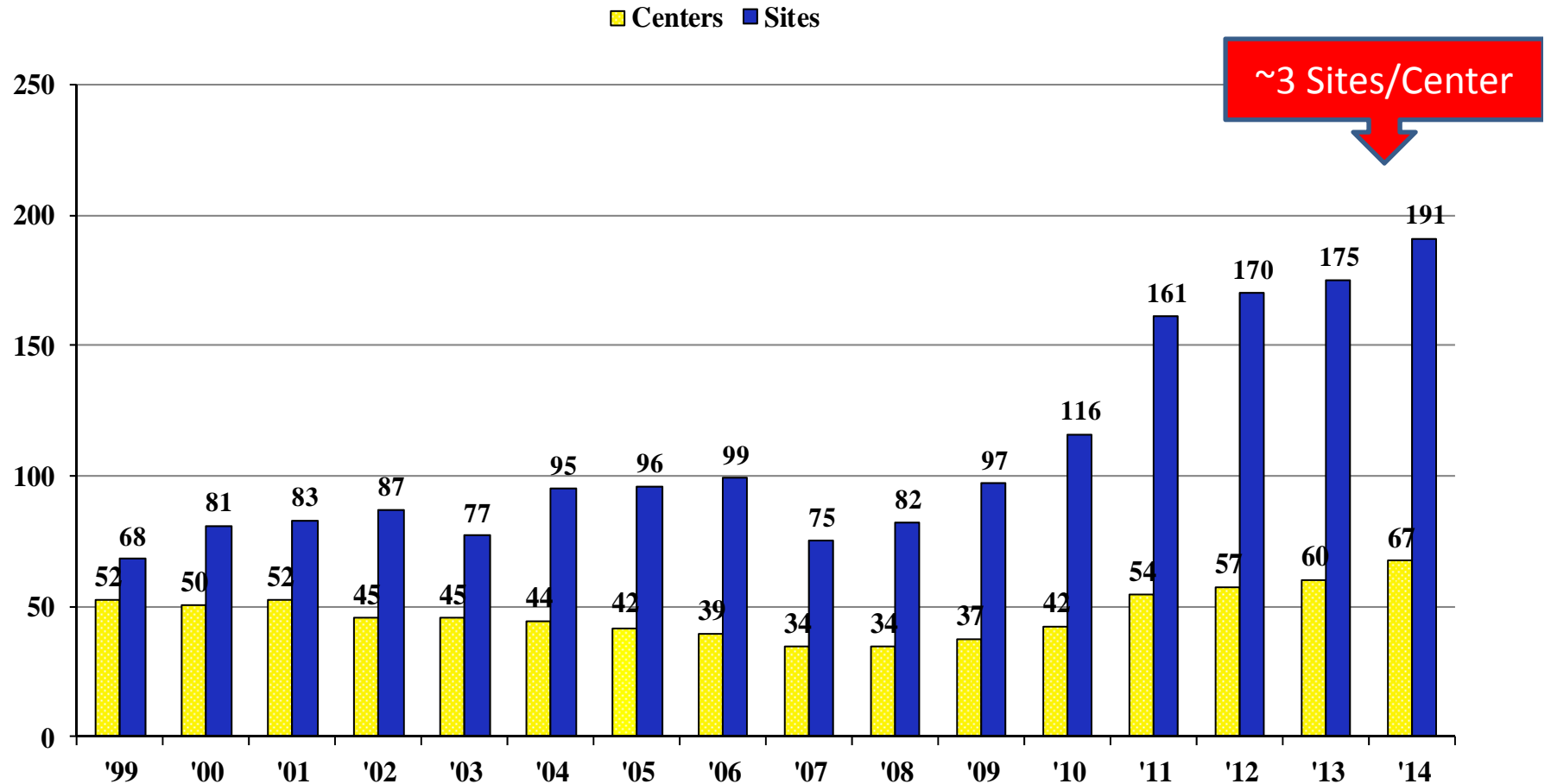
NSF-I/UCRC Center Structure Database

*Data Current for FY2014

ACTIVE CENTERS AND SITES BY YEAR*



Industry/University
Cooperative Research
Centers



~3 Sites/Center

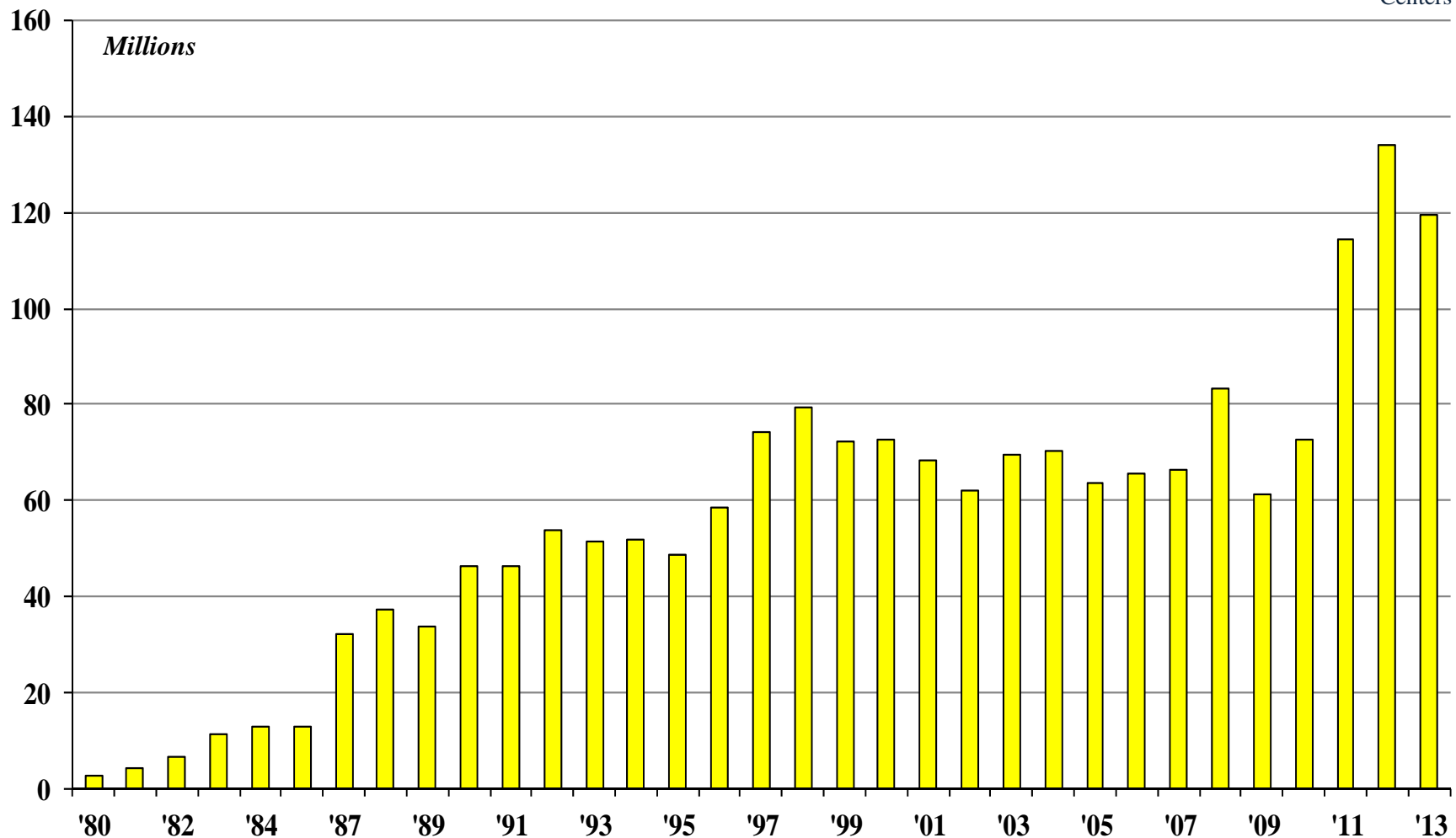
*Data C 14

Not
'14

Total Program Funding



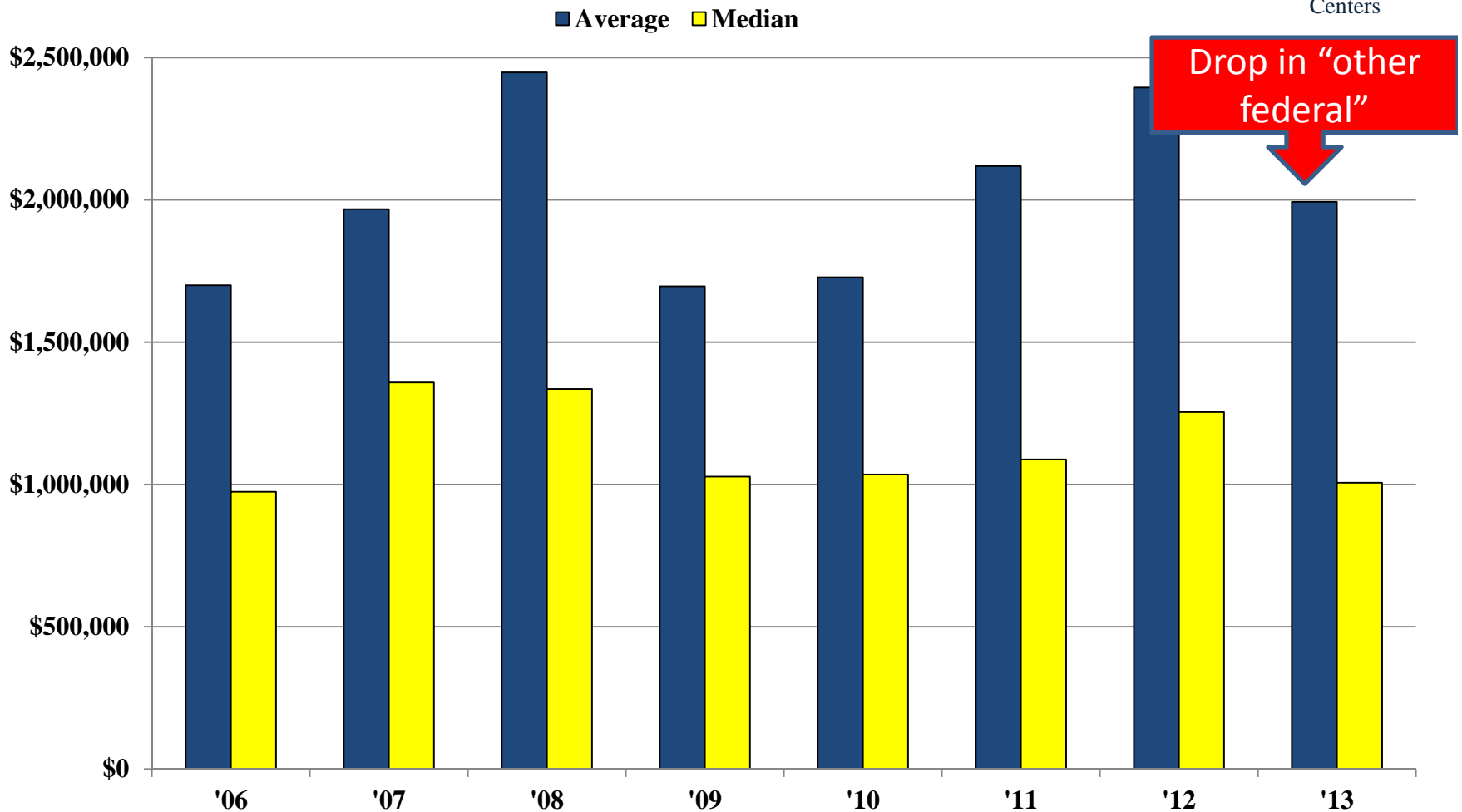
Industry/University
Cooperative Research
Centers



Average & Median Total Center Funding



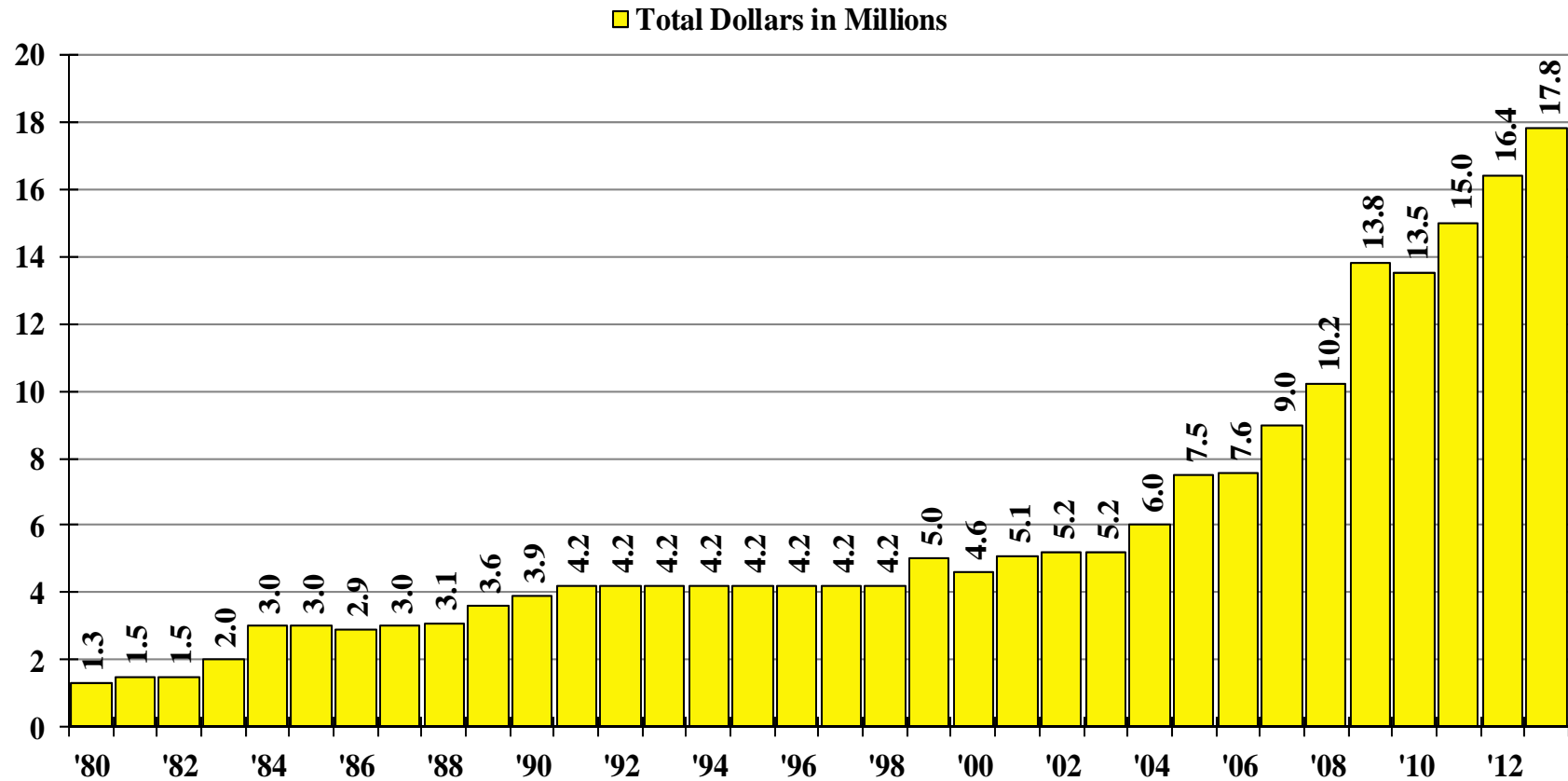
Industry/University
Cooperative Research
Centers



NSF Budget by Year



Industry/University
Cooperative Research
Centers



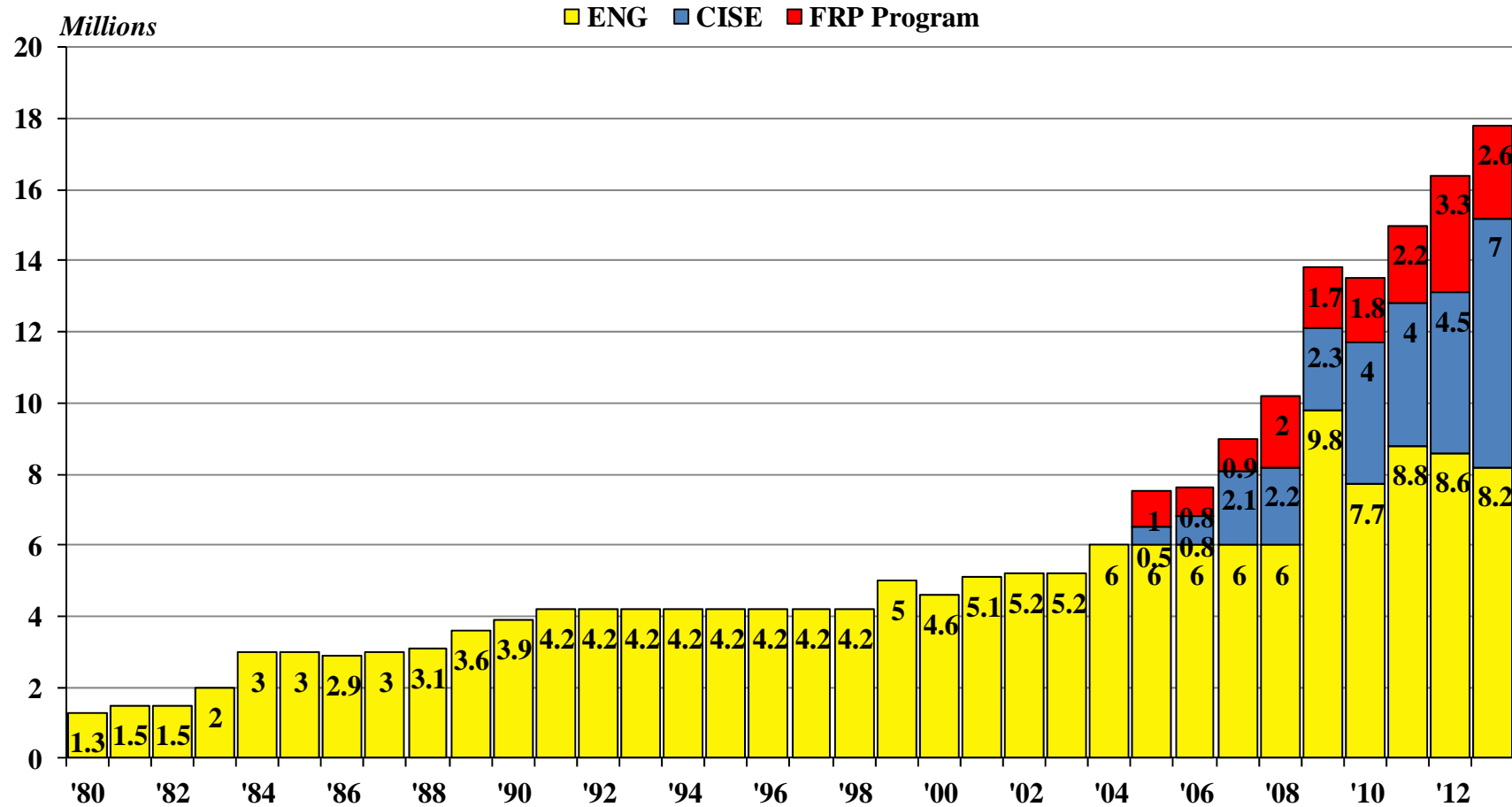
Note: 2005-2013: Include Supplemental Funding and CISE

FY 2012-2013 NSF-I/UCRC Center Structure Database



NSF Budget by Year

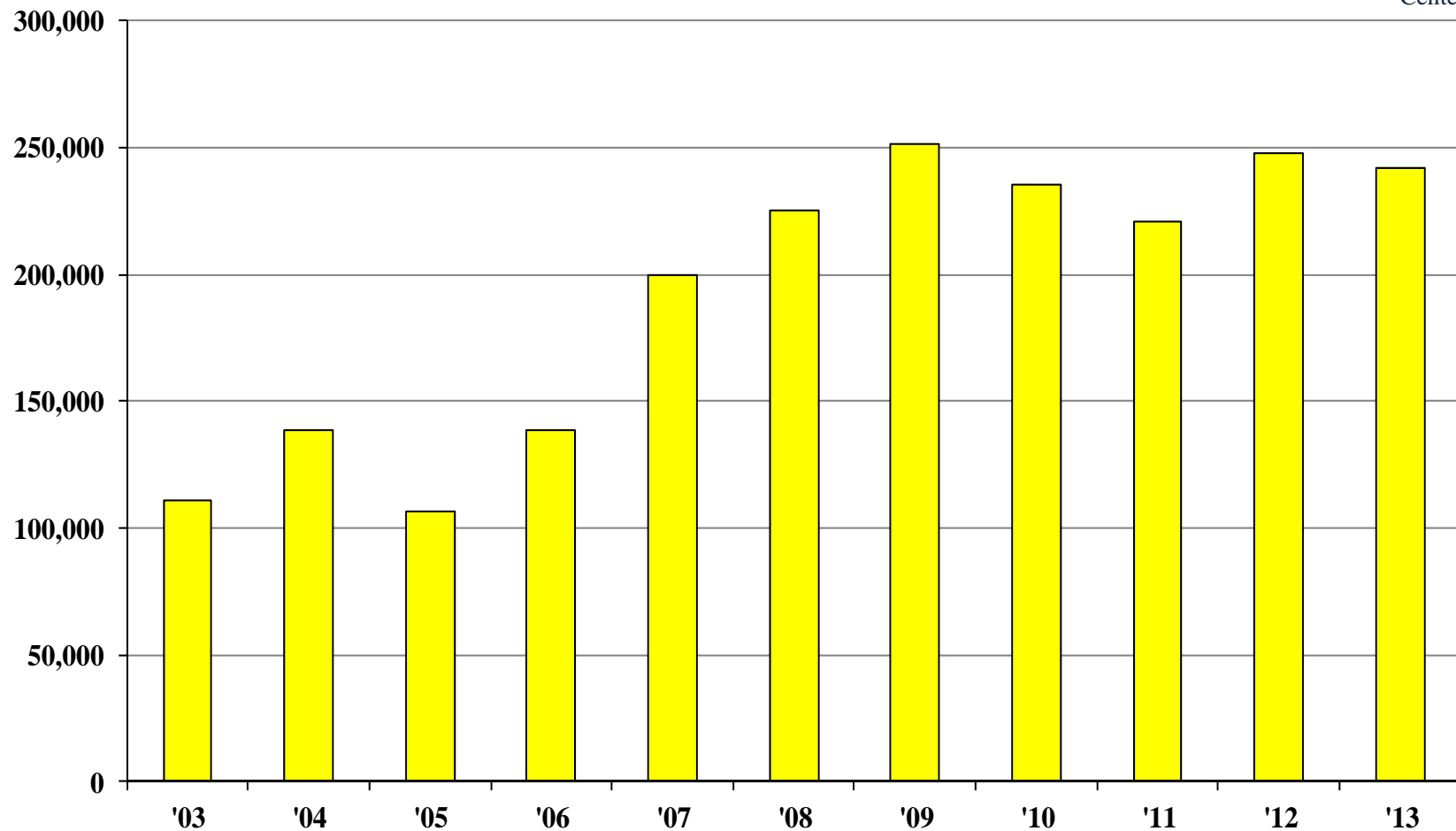
Other Programs co-fund too!



Average NSF IUCRC Awards & Supplements per Center



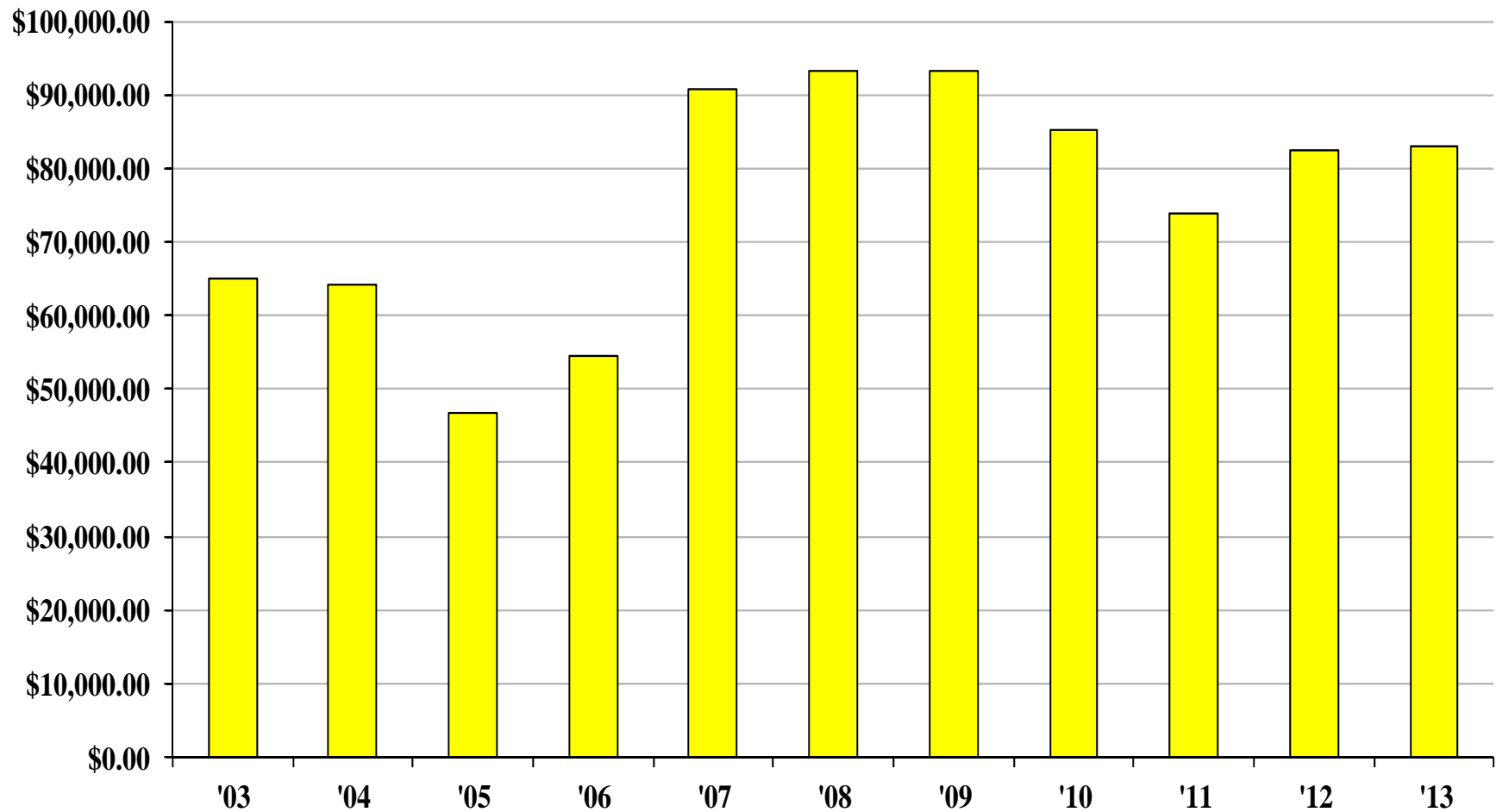
Industry/University
Cooperative Research
Centers



Average NSF IUCRC Funding per Site



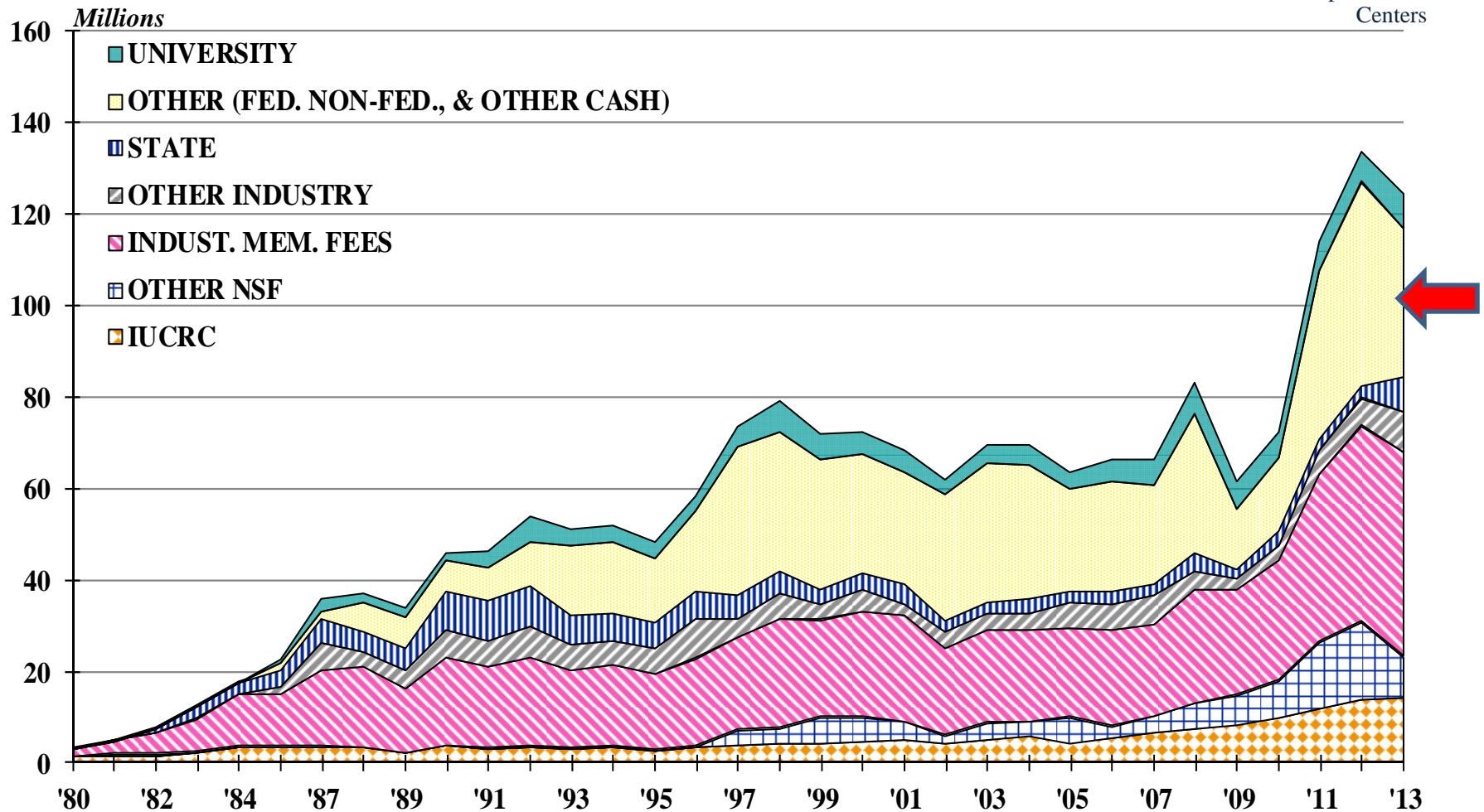
Industry/University
Cooperative Research
Centers



Total Funding by Source in Dollars



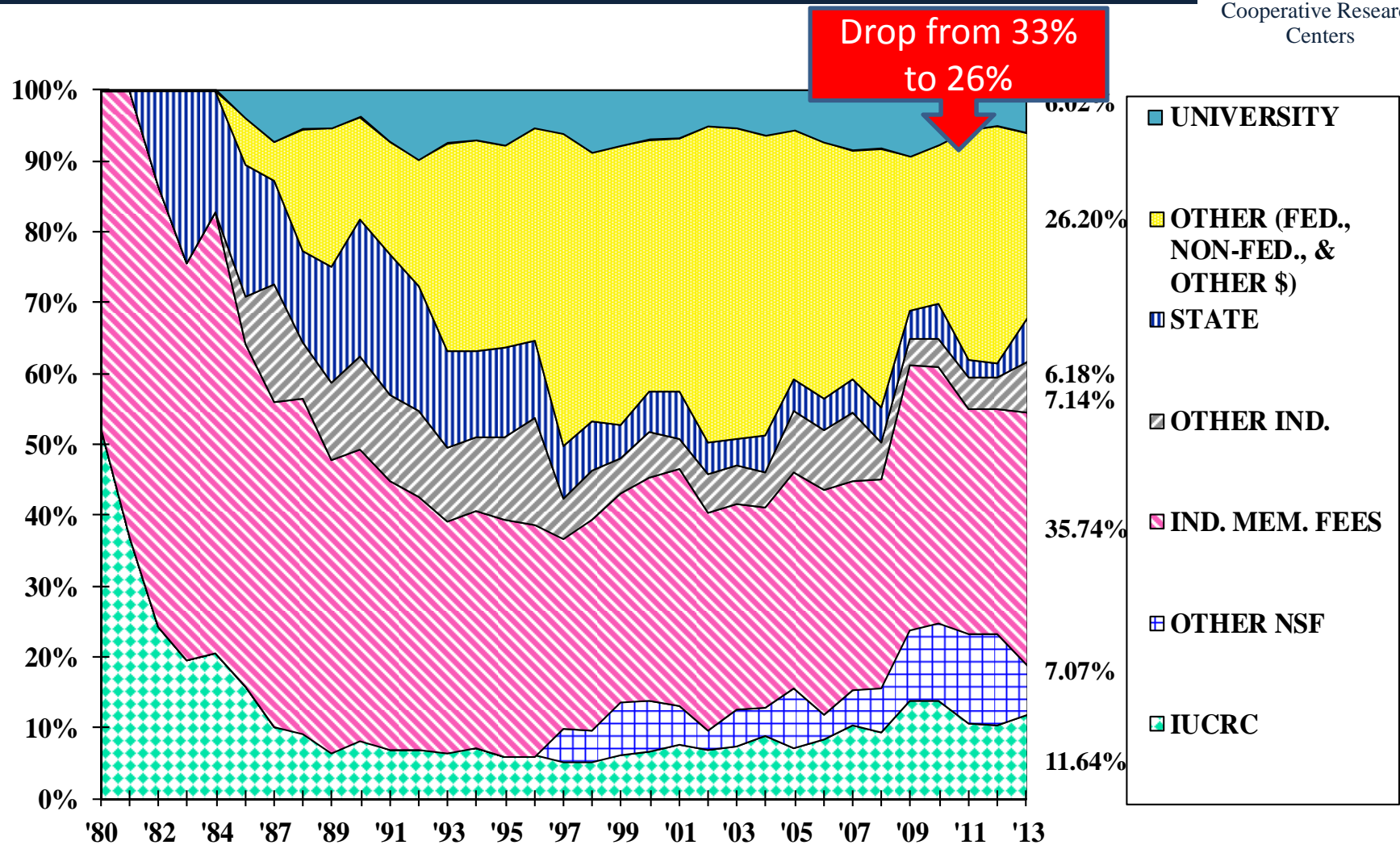
Industry/University
Cooperative Research
Centers



Total Funding by Source in Percentages



Industry/University
Cooperative Research
Centers

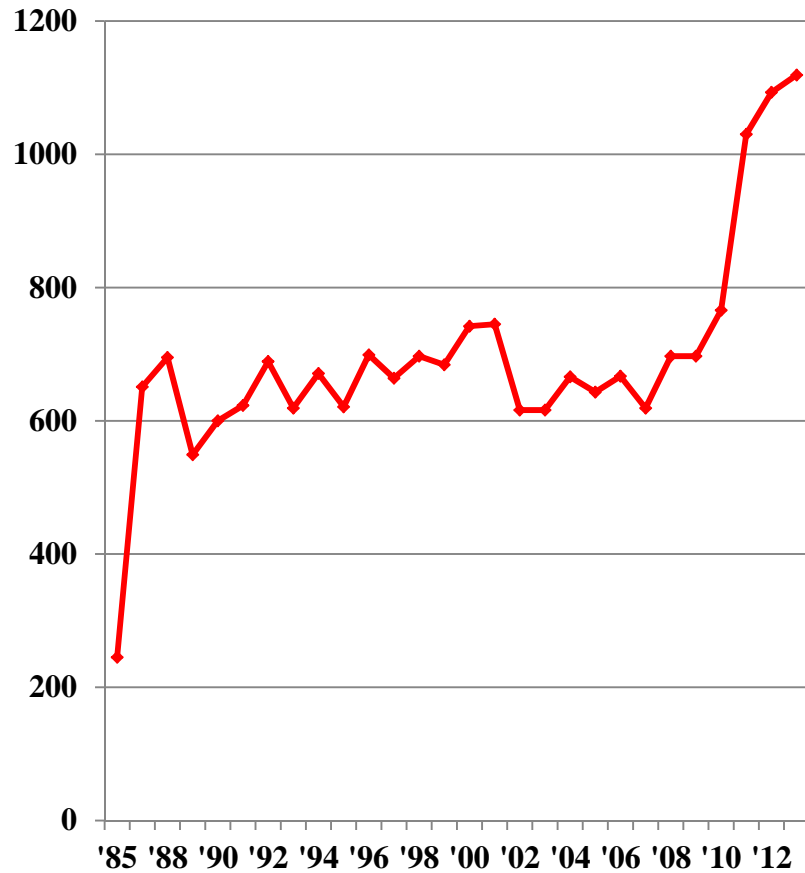


Industrial Memberships

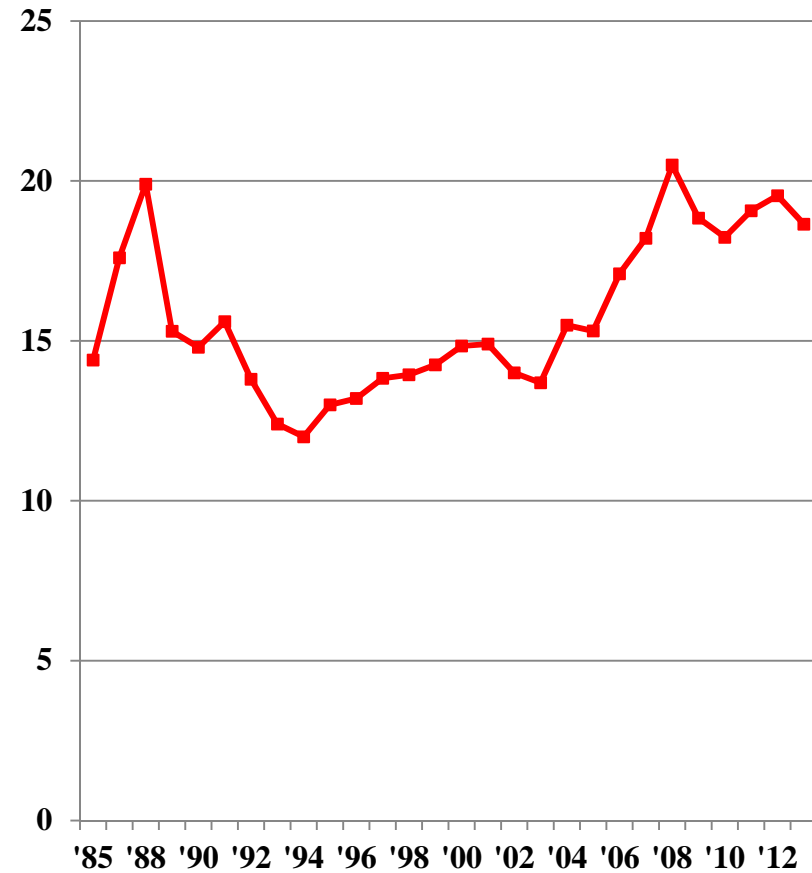


Industry/University
Cooperative Research
Centers

Total Number of Memberships



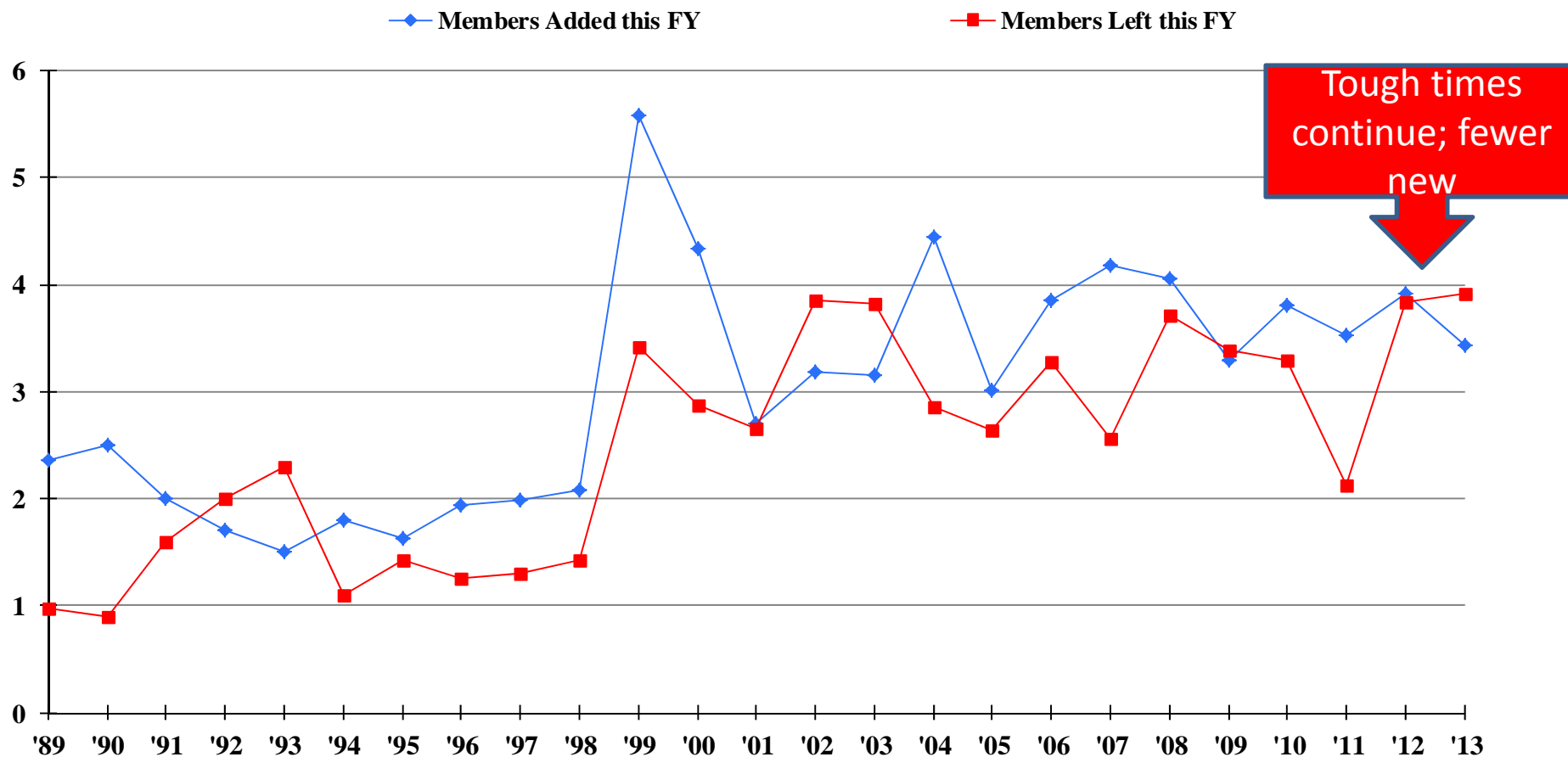
Average Number of Memberships



Average Membership Turn Over



Industry/University
Cooperative Research
Centers

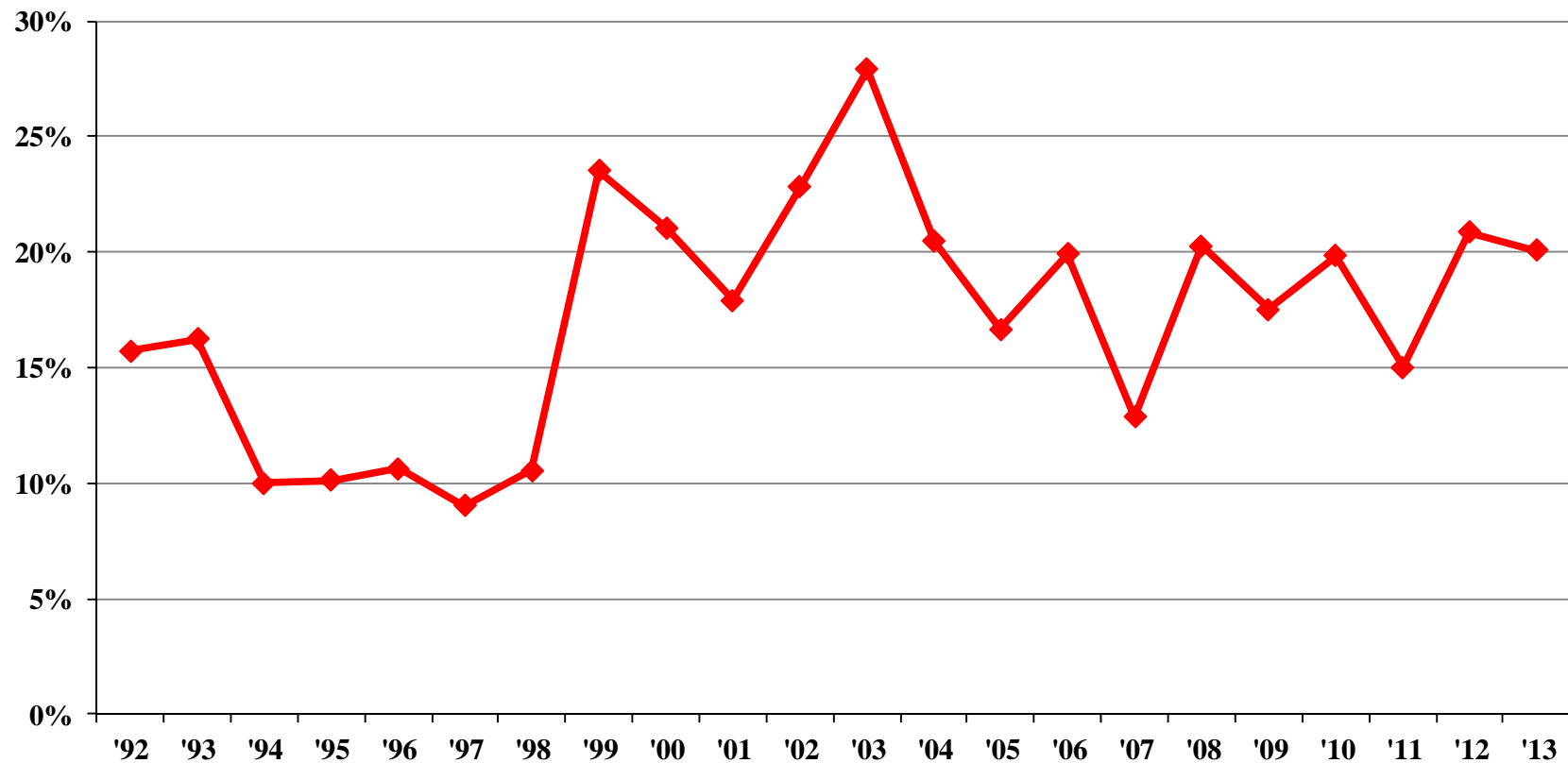


*Newly funded Centers' members are not counted as Members Added
FY 2012-2013 NSF-I/UCRC Center Structure Database



Industry/University
Cooperative Research
Centers

Member Turnover Rate



Turnover % = Members terminated in year X+1 / Total members in year X

National Context for Industry Membership: Theory and Reality



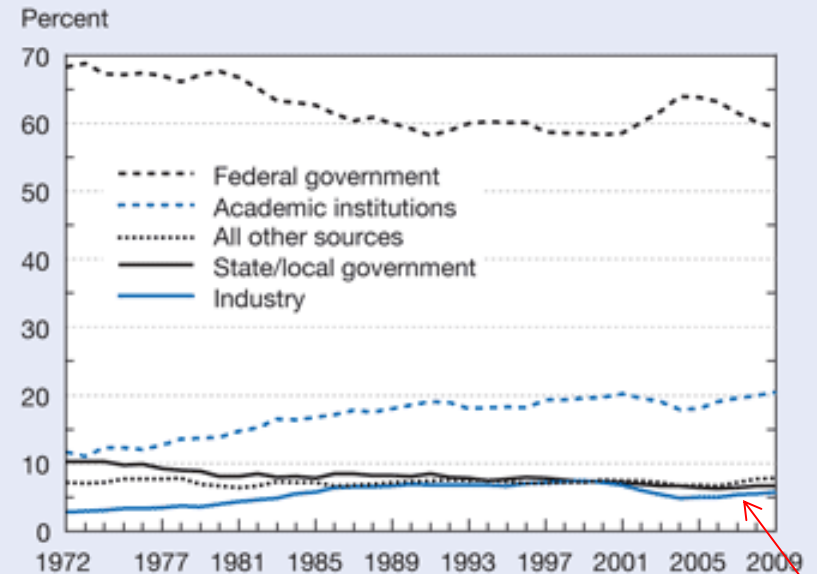
Industry/University
Cooperative Research
Centers

Open Innovation

- Challenge
 - Even the largest firms and N.I.S. can only capture a fraction of scientific talent available
- Open Innovation
 - Increasing use of external sources of R&D
 - VP for Open Innovation; National Meetings on Open Innovation
 - Absorptive capacity; networks; partner scanning



Figure 5-2
Academic R&D expenditures, by source of funding:
1972-2009



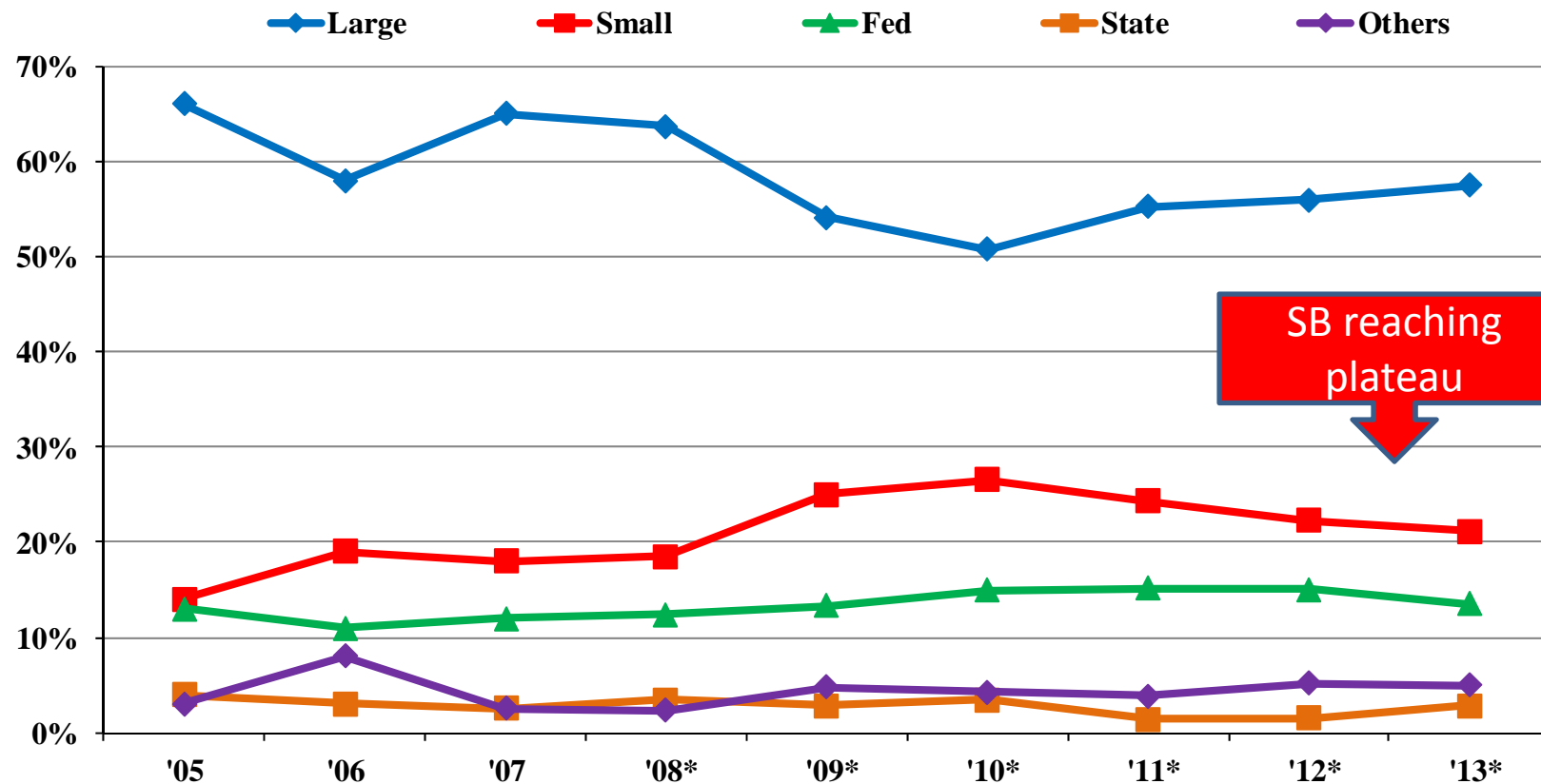
NOTE: Science and engineering R&D; non-S&E R&D not included.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at Universities and Colleges. See appendix table 5-2.

Science and Engineering Indicators 2012



Member Composition 2005-2013

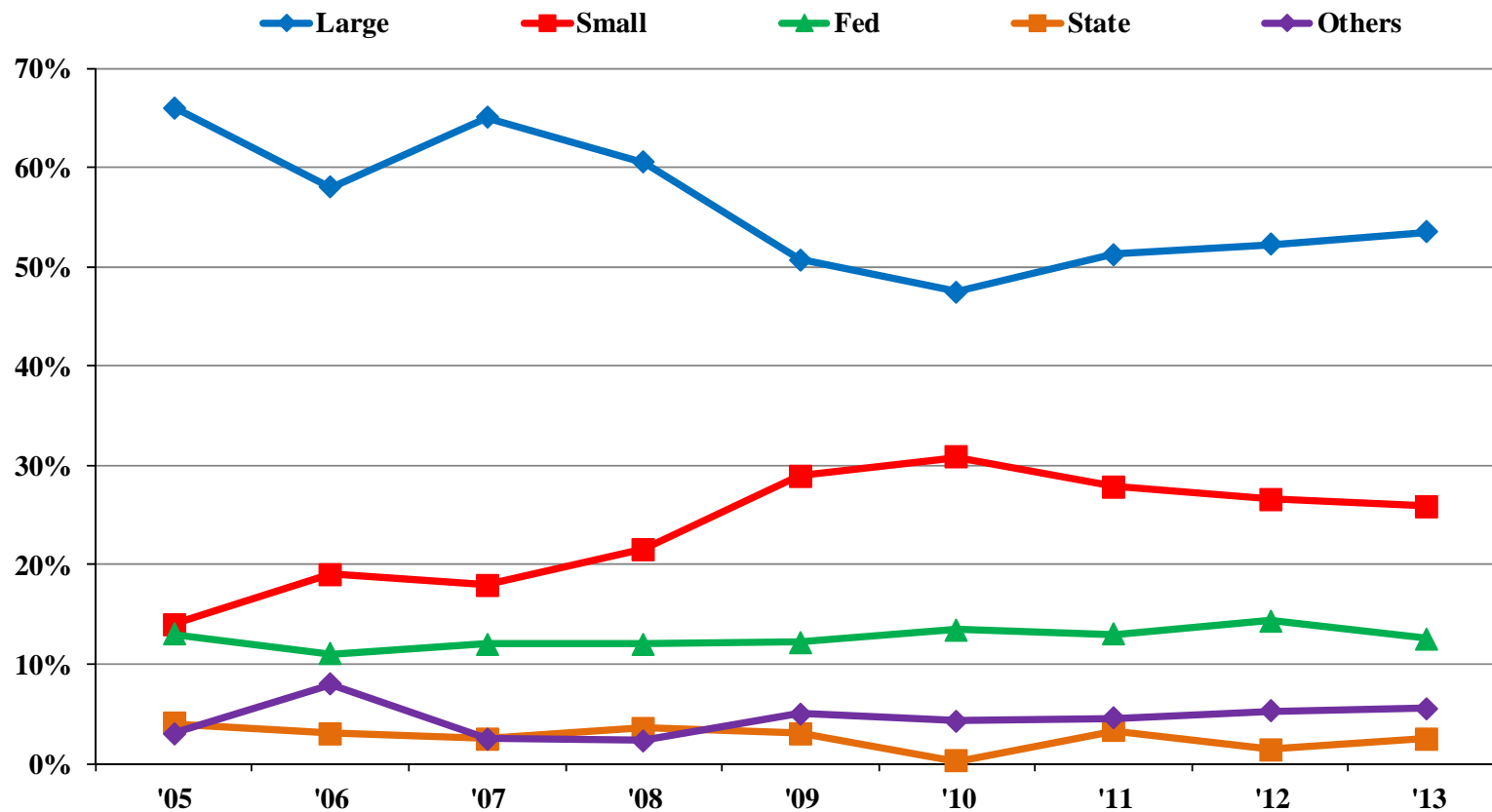


*Years Advanced Forestry excluded as a small business outlier: '08 Small = 36, '09 Small = 49, '10 Small = 57, '11 Small = 66, '12 = 71, '13 = 76.

^ Categories comprising Others include: non-profit, non-US gov't, and other org.



Member Composition 2005-2012



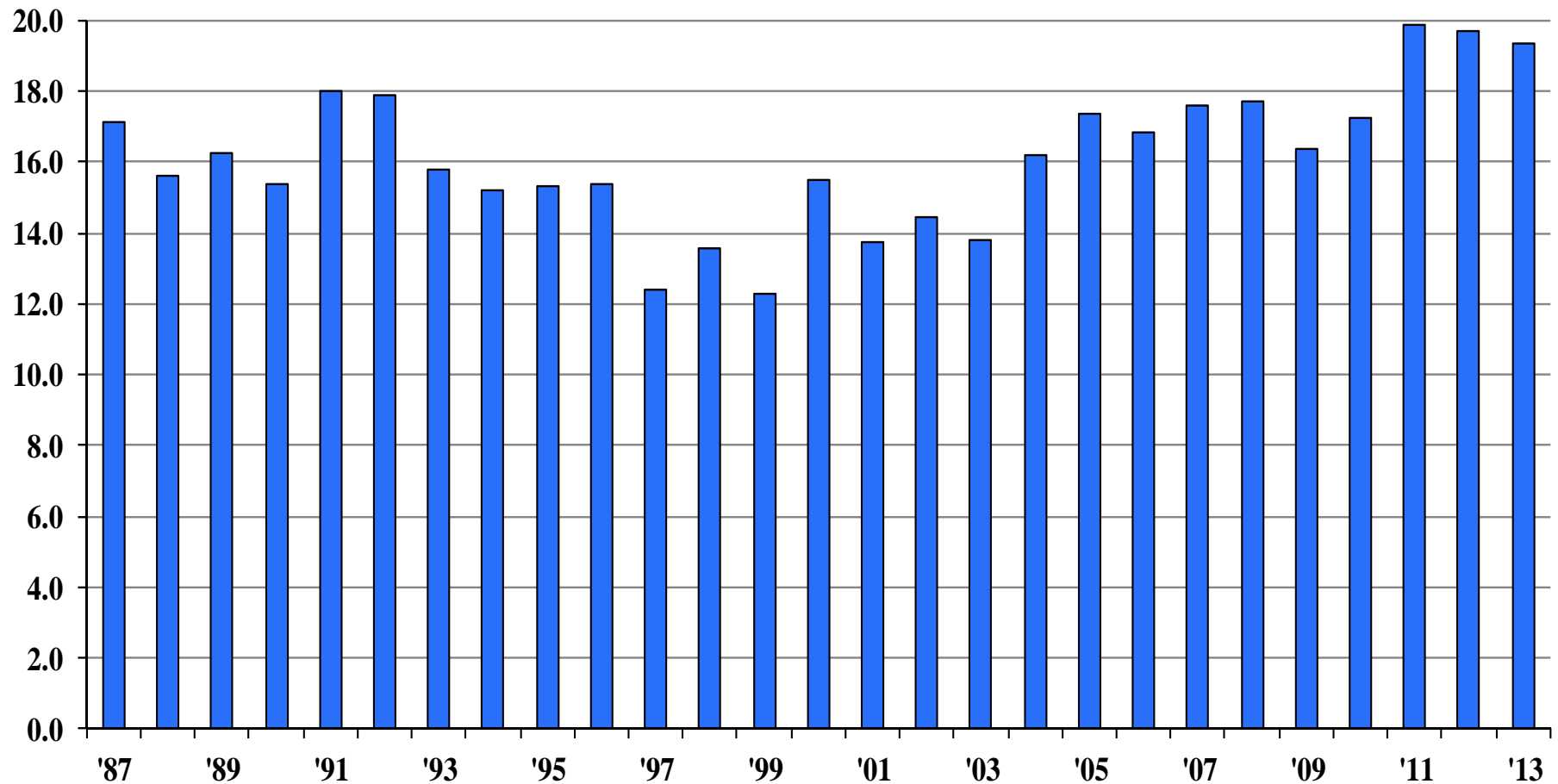
^ Categories comprising Others include: non-profit, non-US gov't, and other org.

Average Number of Researchers per Center



Industry/University
Cooperative Research
Centers

FACULTY & POST DOC RESEARCHERS

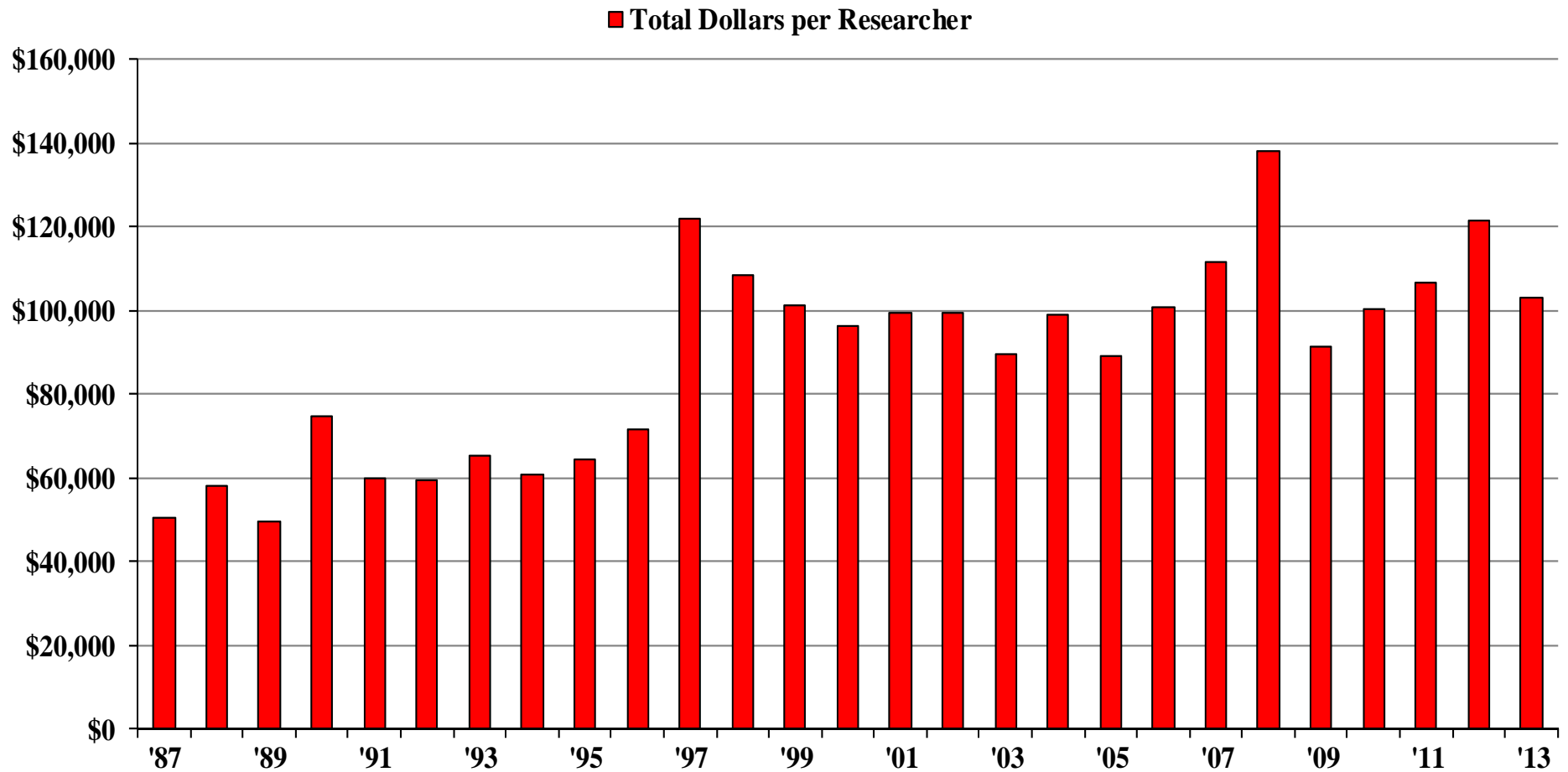


Note: As of 2003, NSF changed the label of "non-faculty" researchers to "post doc" researchers

Funding per Researcher Total



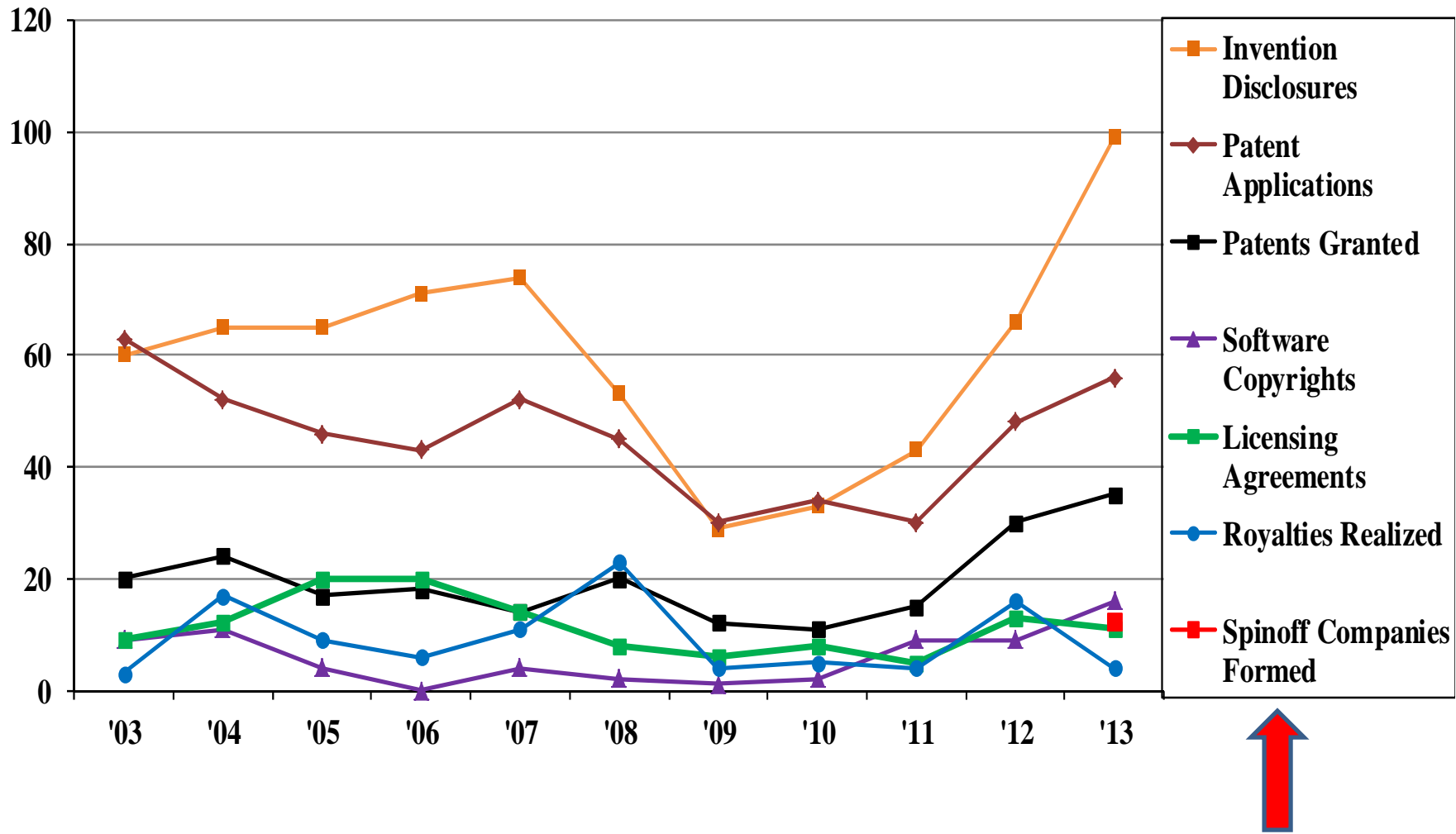
Industry/University
Cooperative Research
Centers



Intellectual Property & Commercialization Events 03-13 Totals



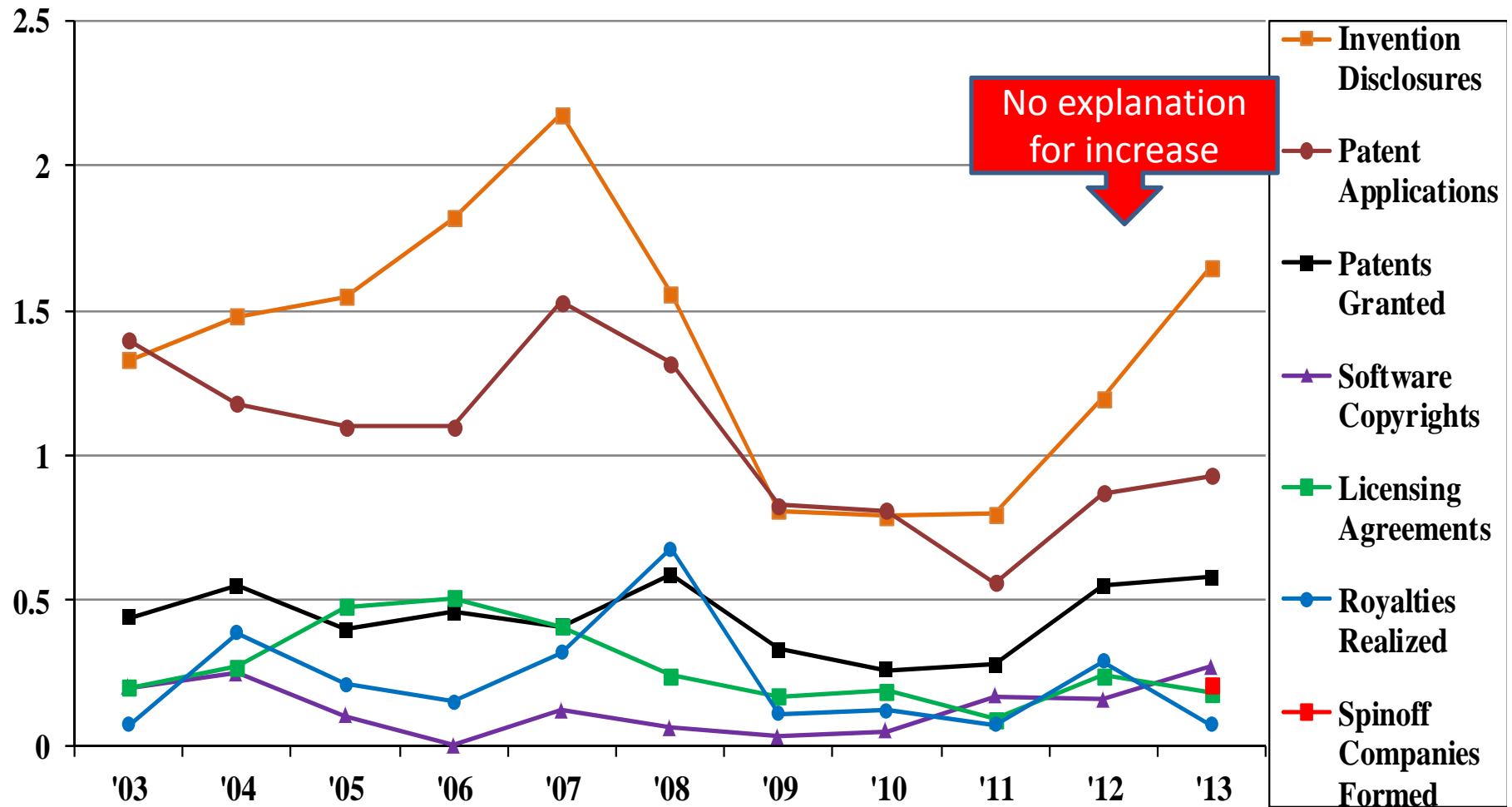
Industry/University
Cooperative Research
Centers



Average Number of Intellectual Property & Commercialization Events 03-13



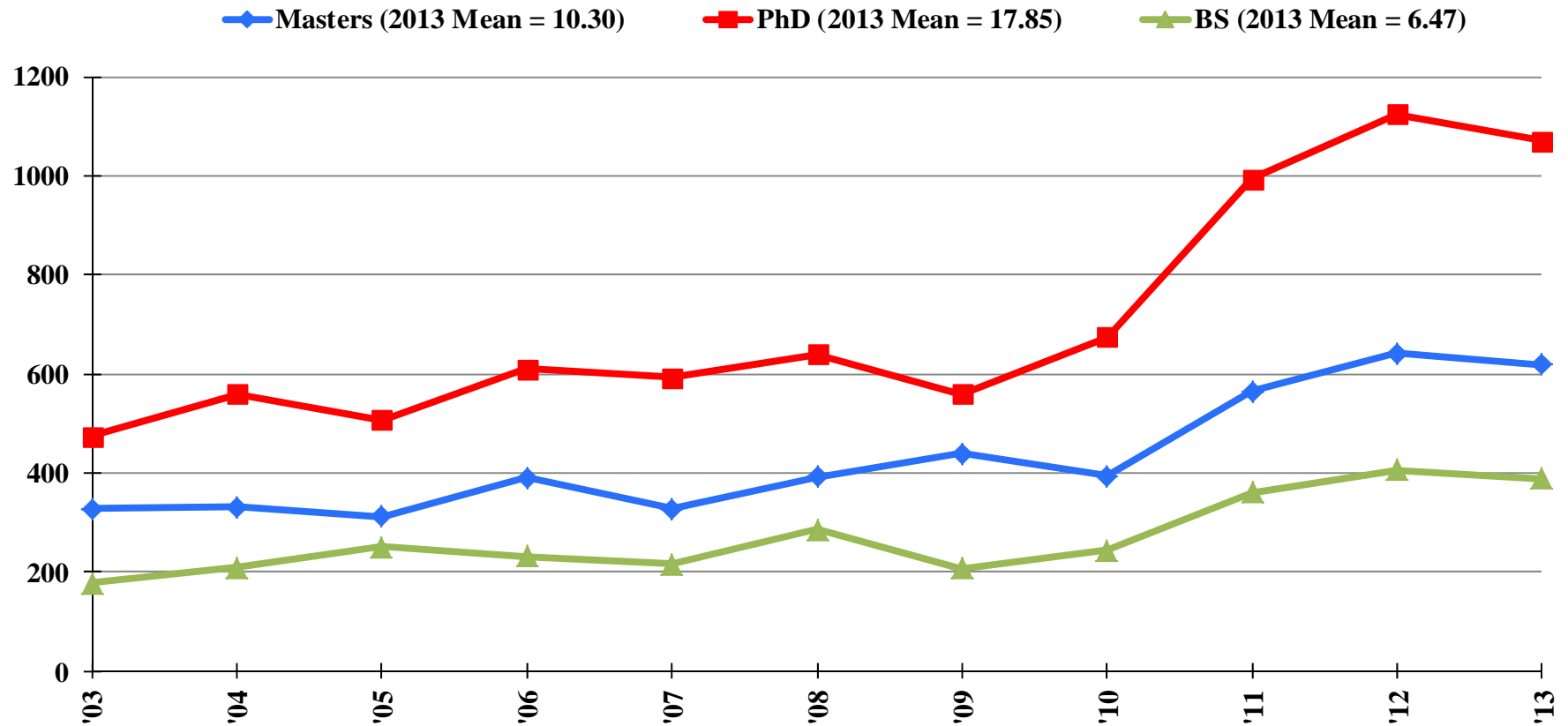
Industry/University
Cooperative Research
Centers



Total Students Trained



Industry/University
Cooperative Research
Centers

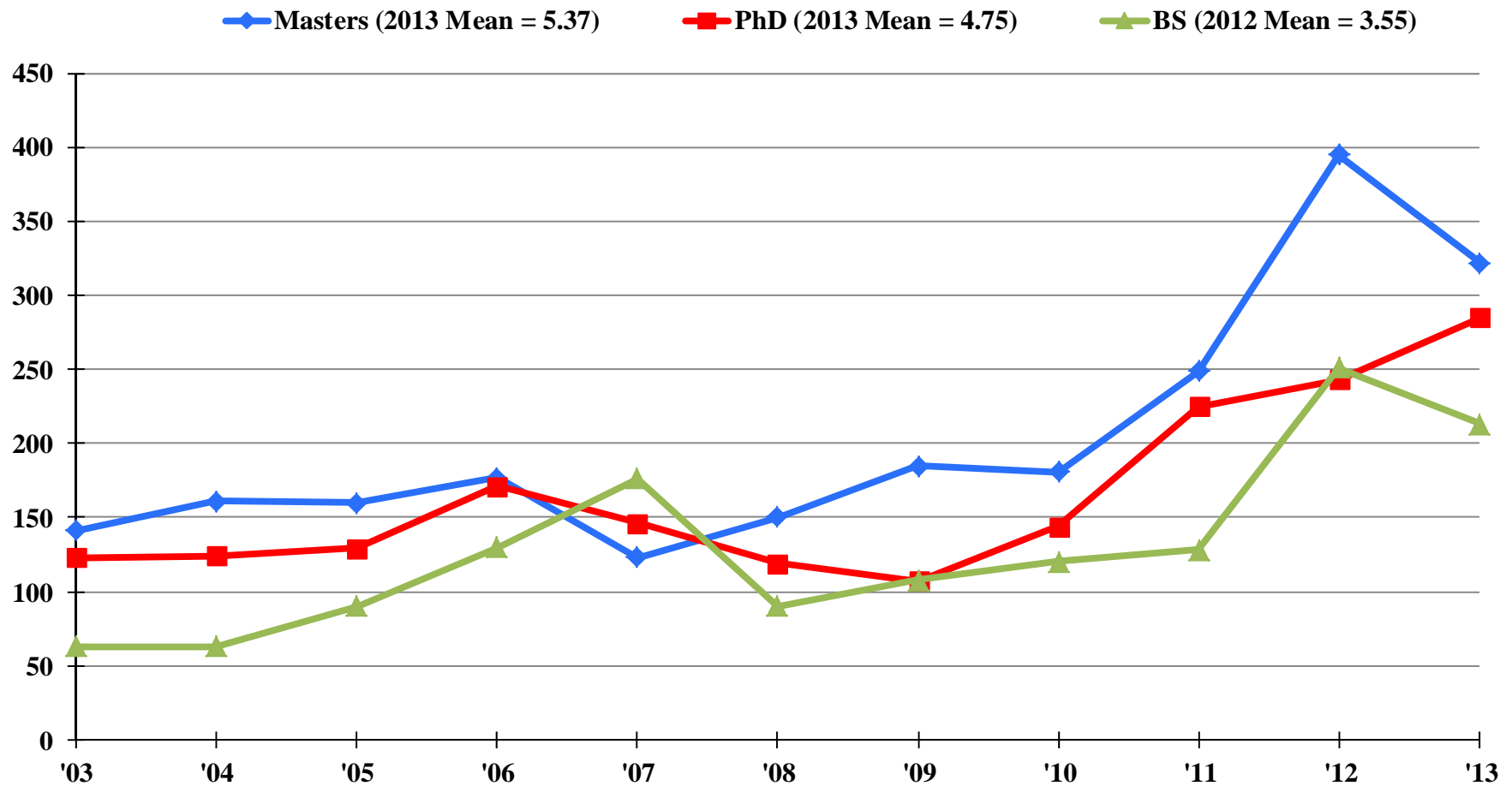


* Prior to 2002, Masters and PhD were combined into "Grad" category.
FY 2012-2013 NSF-I/UCRC Center Structure Database

Total Students Graduated



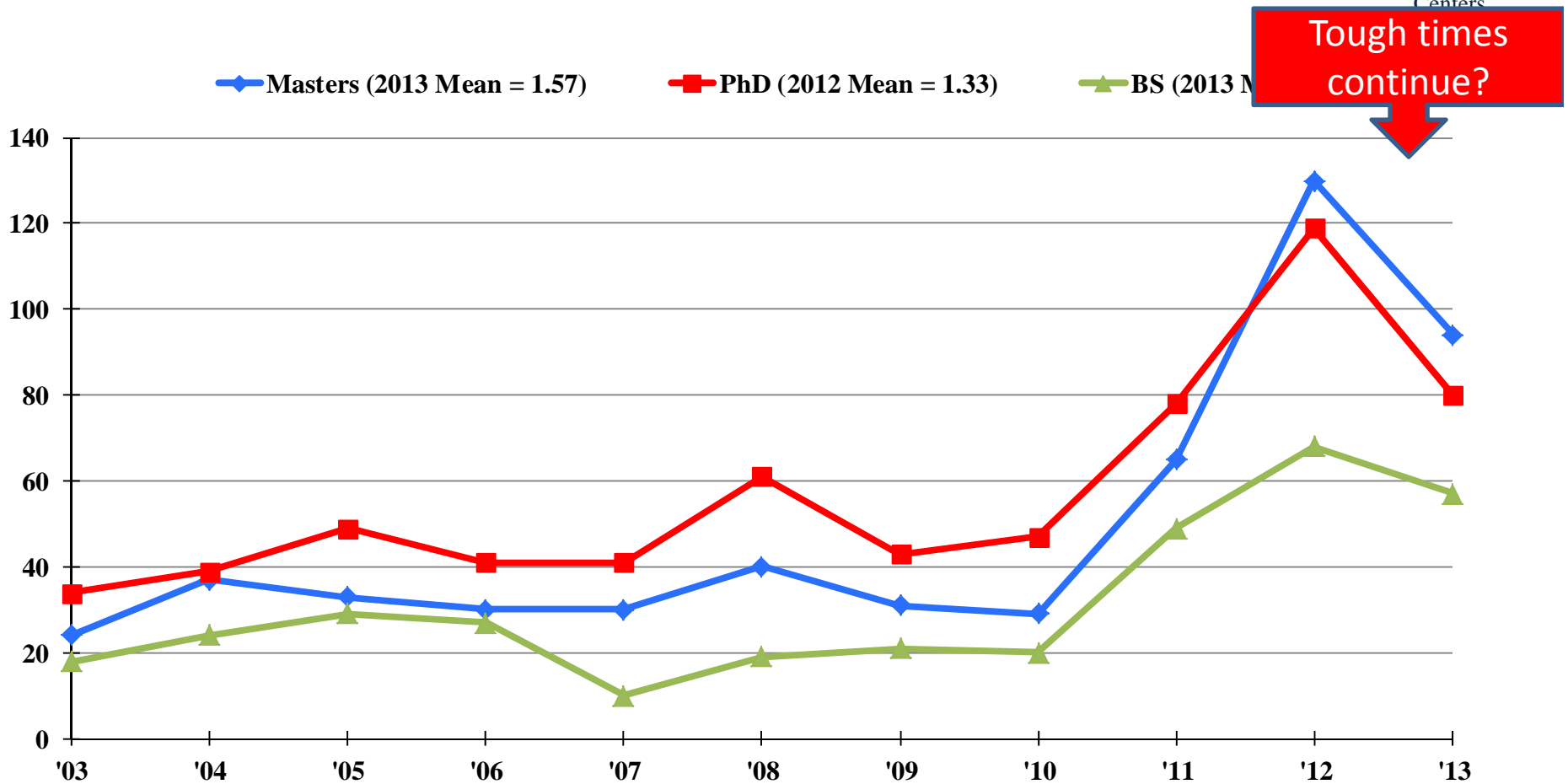
Industry/University
Cooperative Research
Centers



Total Students Hired by Members



Industry/University
Cooperative Research
Centers





Industry/University
Cooperative Research
Centers

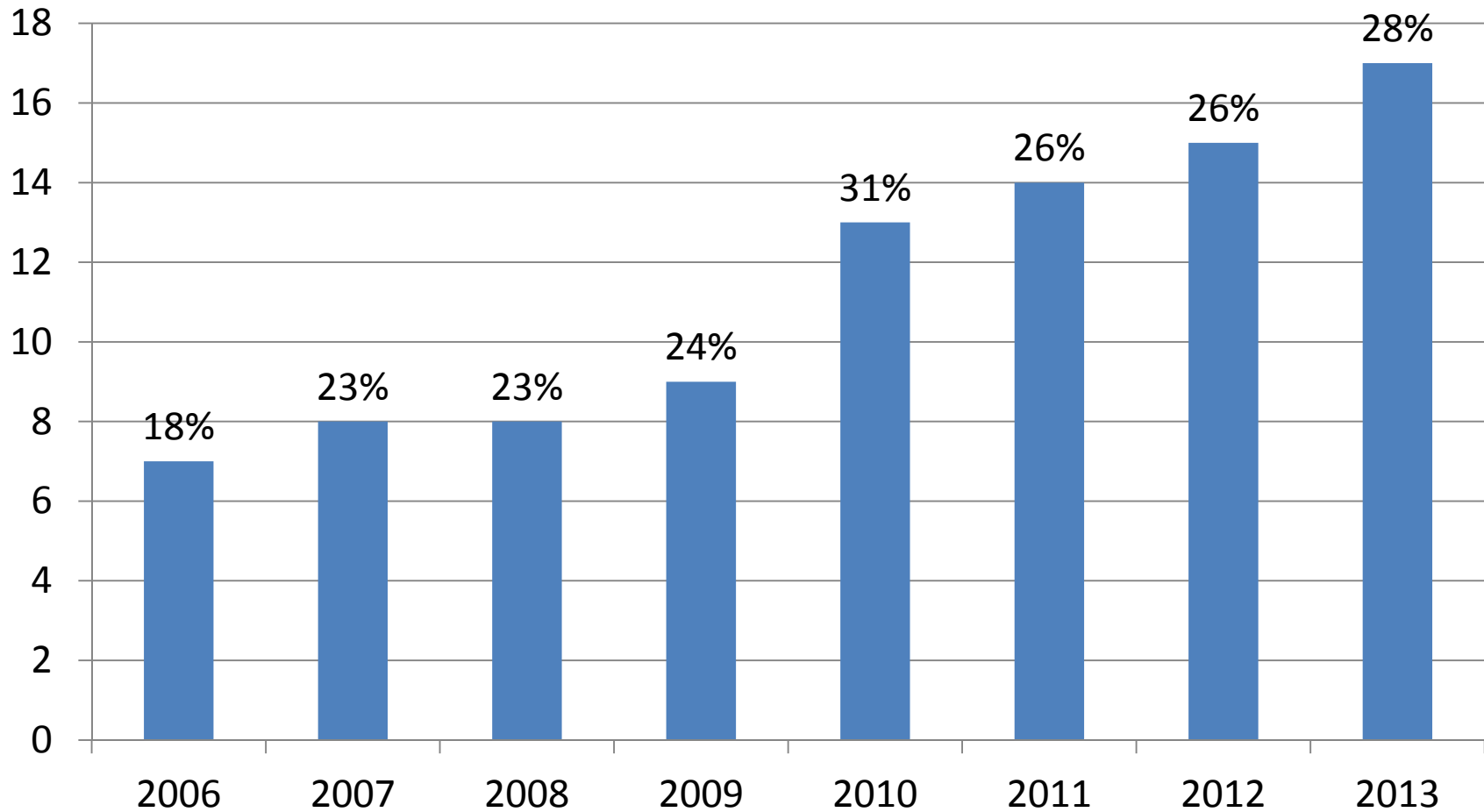
CISE & ENG Partnership

Some Comparisons and Recent Trends

Growth in # of CISE Centers over time

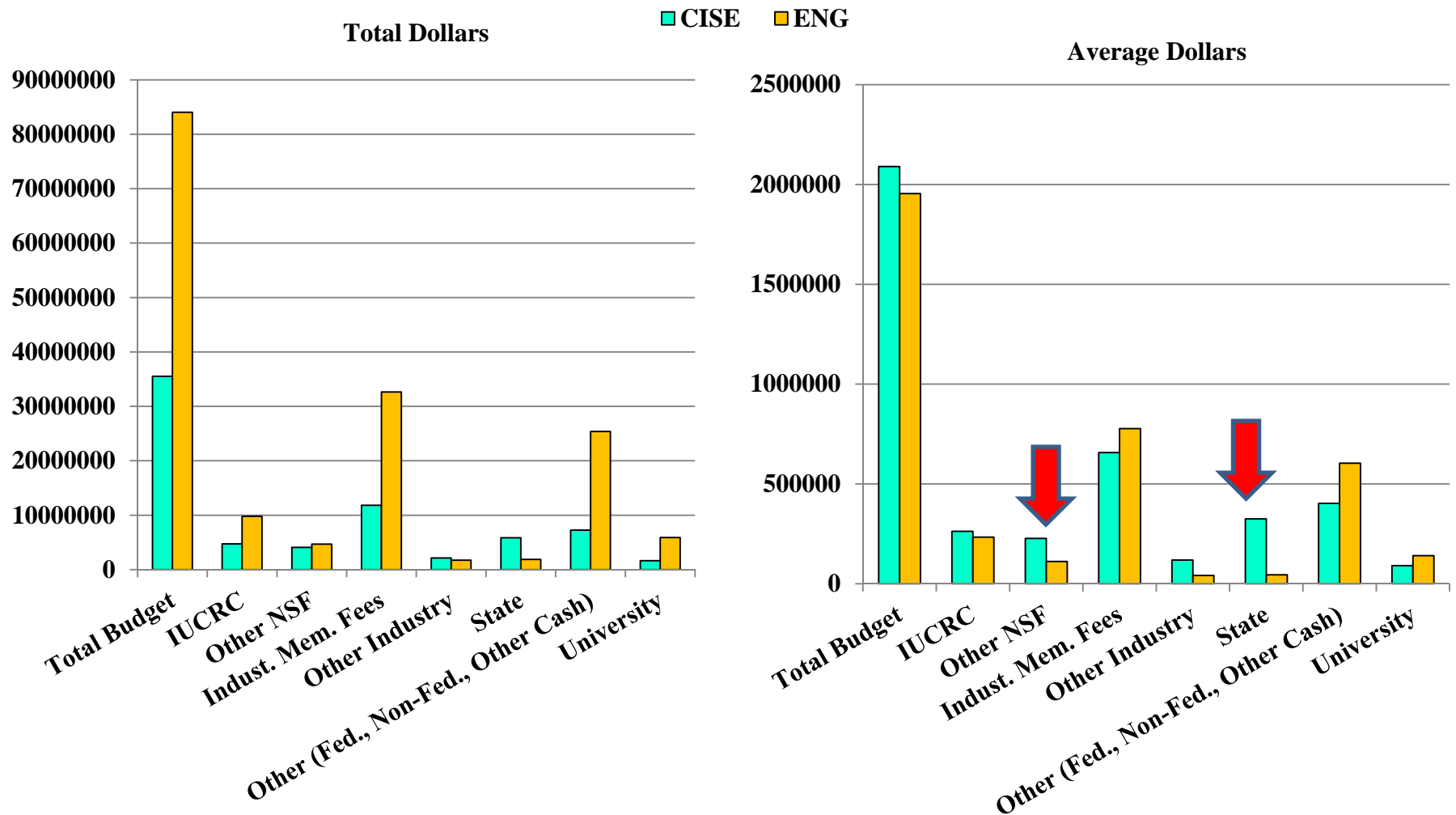


Industry/University
Cooperative Research
Centers





2013 CISE & ENG: Funding by Source



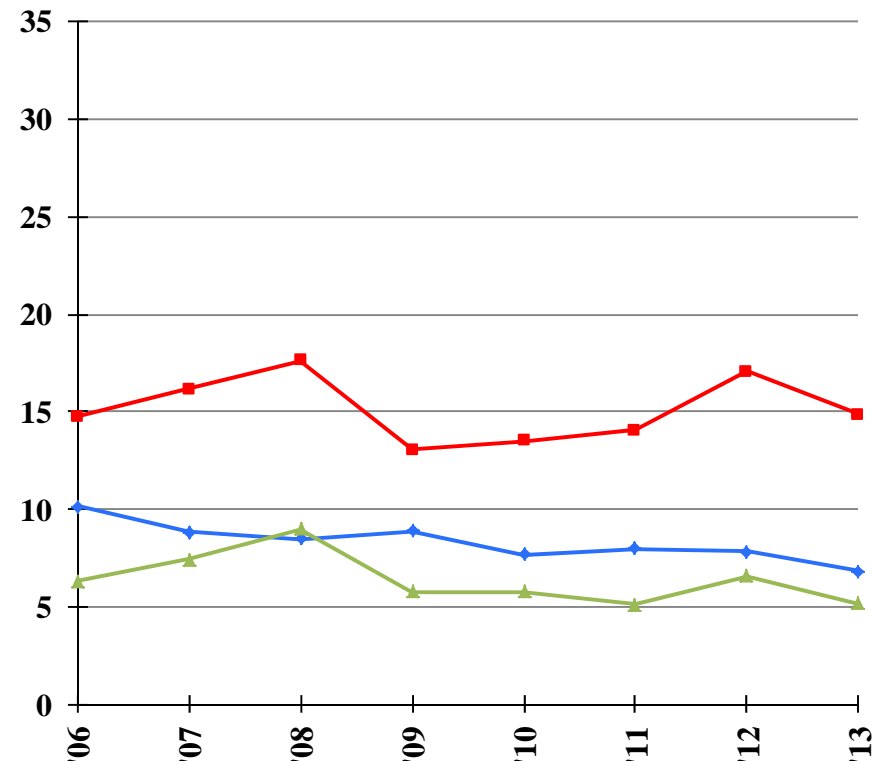
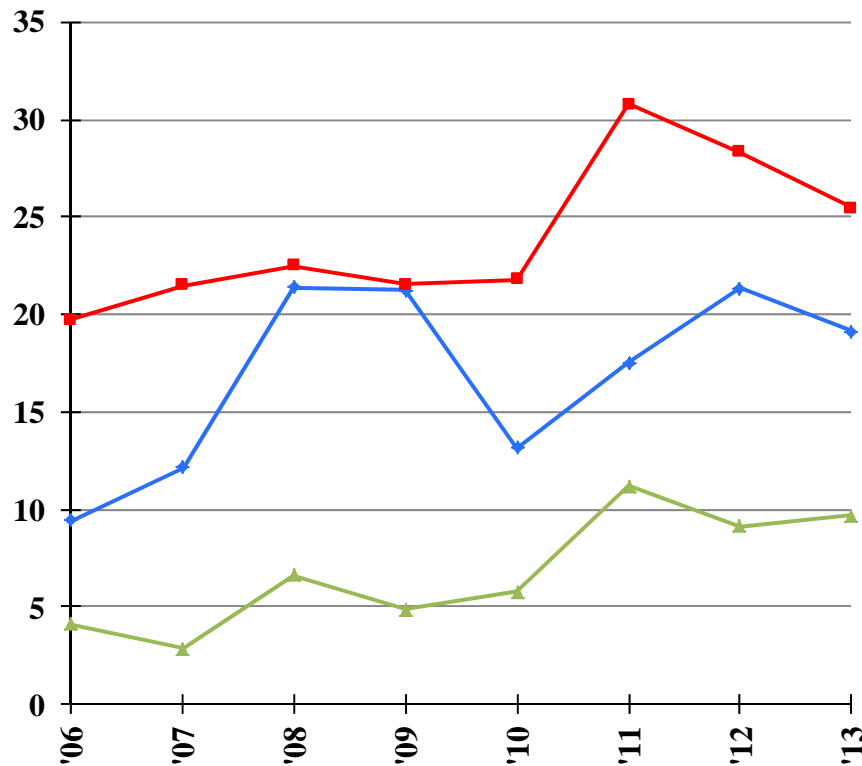
CISE & ENG: Average Students Trained



Industry/University
Cooperative Research
Centers

CISE

ENG



—♦— Masters —■— PhD —▲— BS

* Prior to 2002, Masters and PhD were combined into "Grad" category.
FY 2012-2013 NSF-I/UCRC Center Structure Database

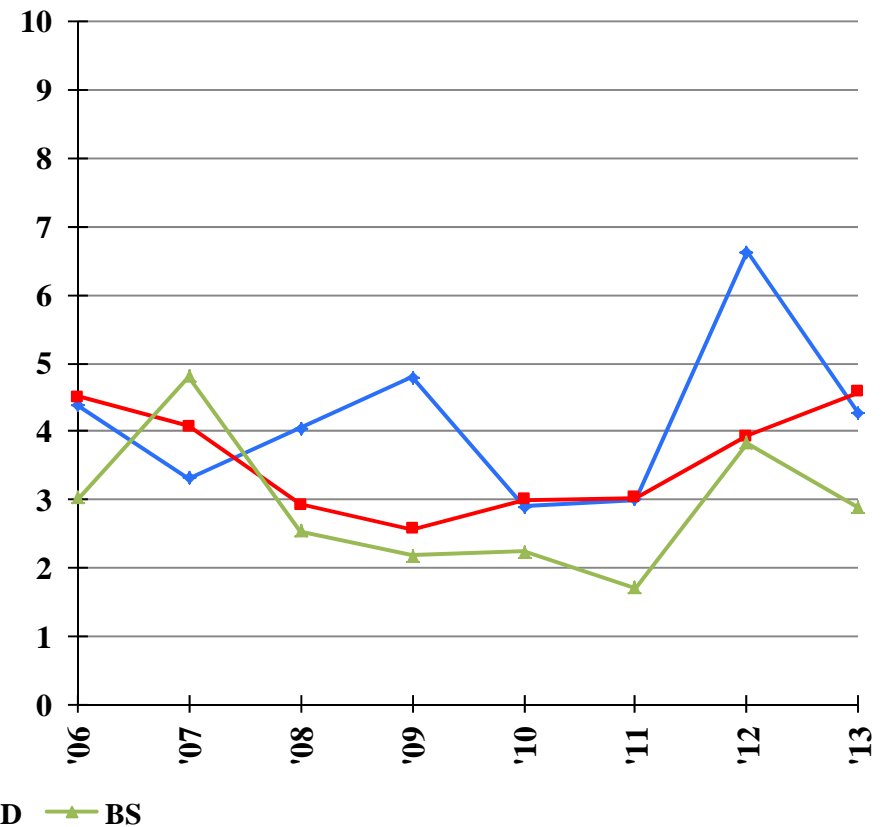
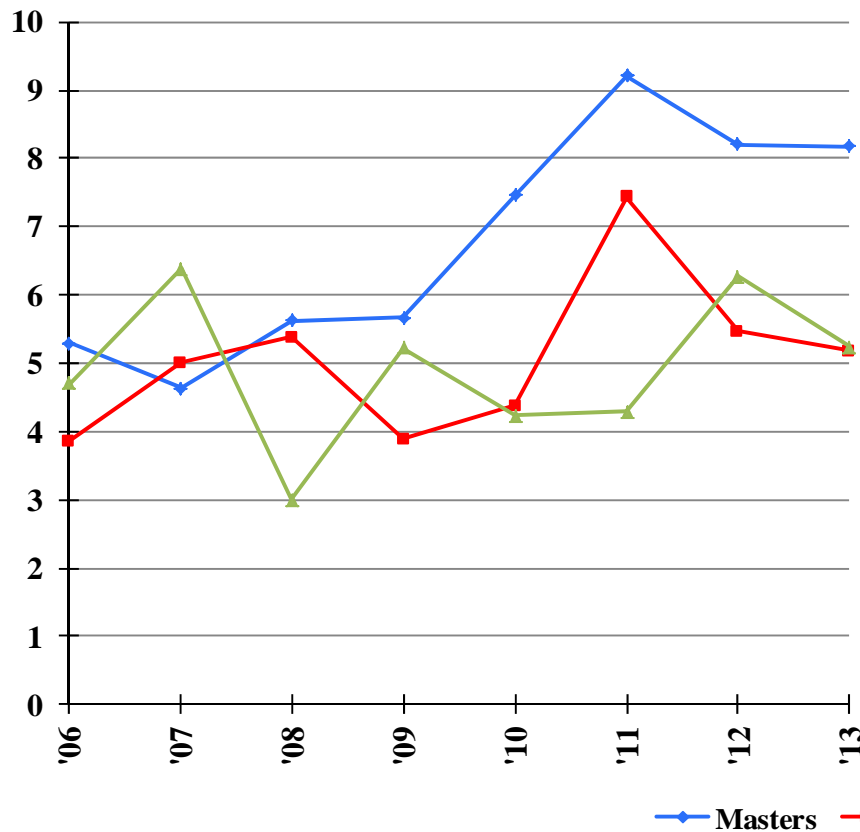
CISE & ENG: Average Students Graduated



Industry/University
Cooperative Research
Centers

CISE

ENG



* Prior to 2002, Masters and PhD were combined into "Grad" category.
FY 2012-2013 NSF-I/UCRC Center Structure Database



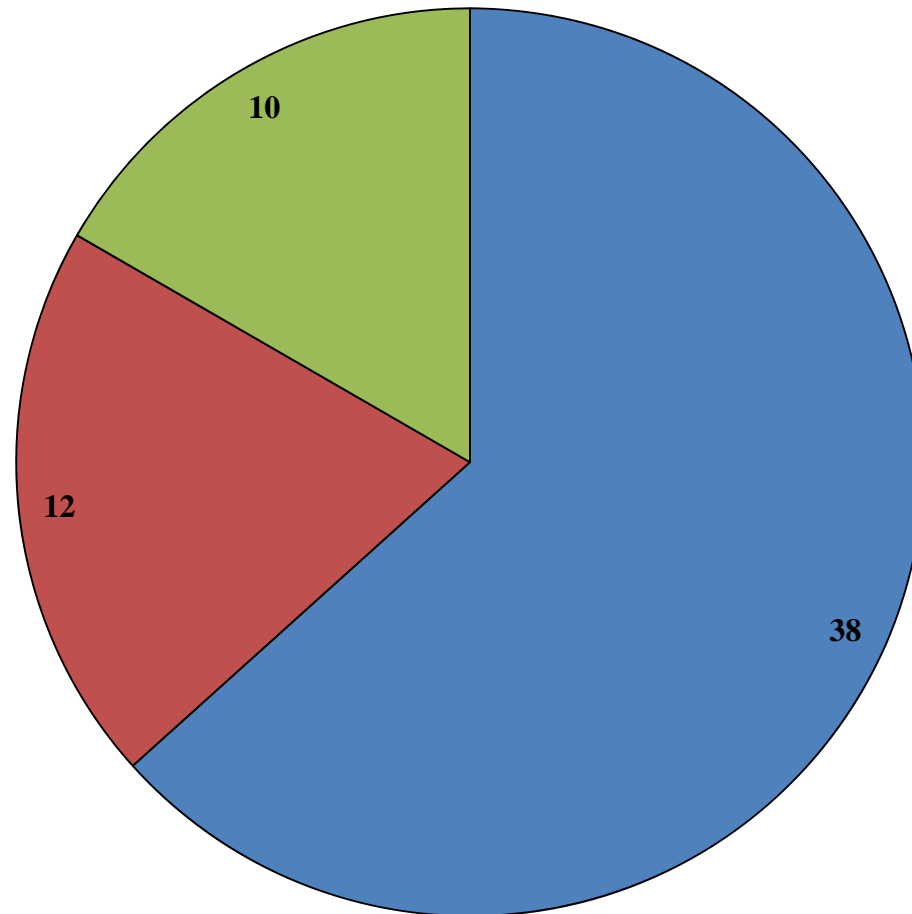
Industry/University
Cooperative Research
Centers

2013 Phase-based comparison

N of Centers by Phase



Industry/University
Cooperative Research
Centers

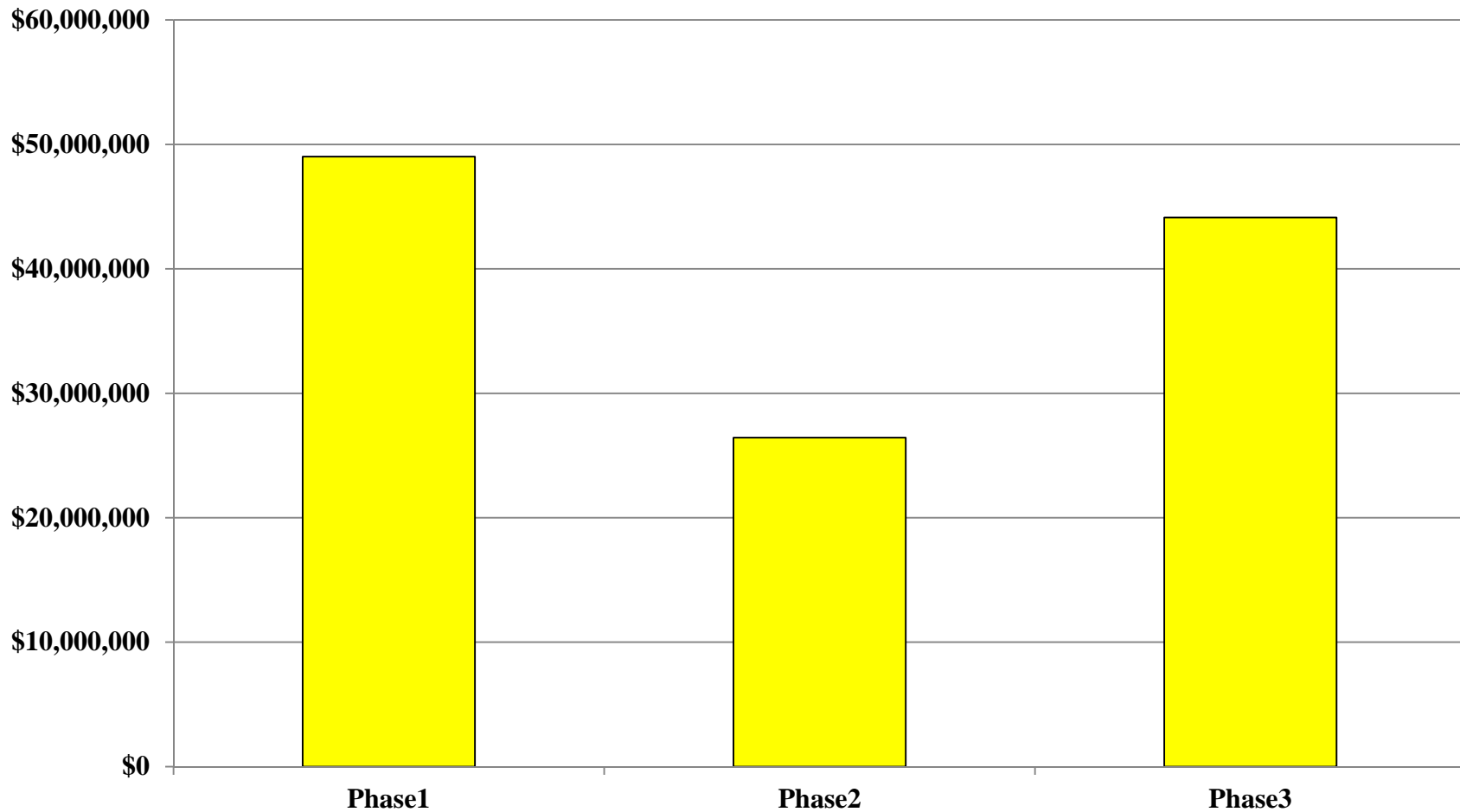


- Phase1
- Phase2
- Phase3

Total Program Funding

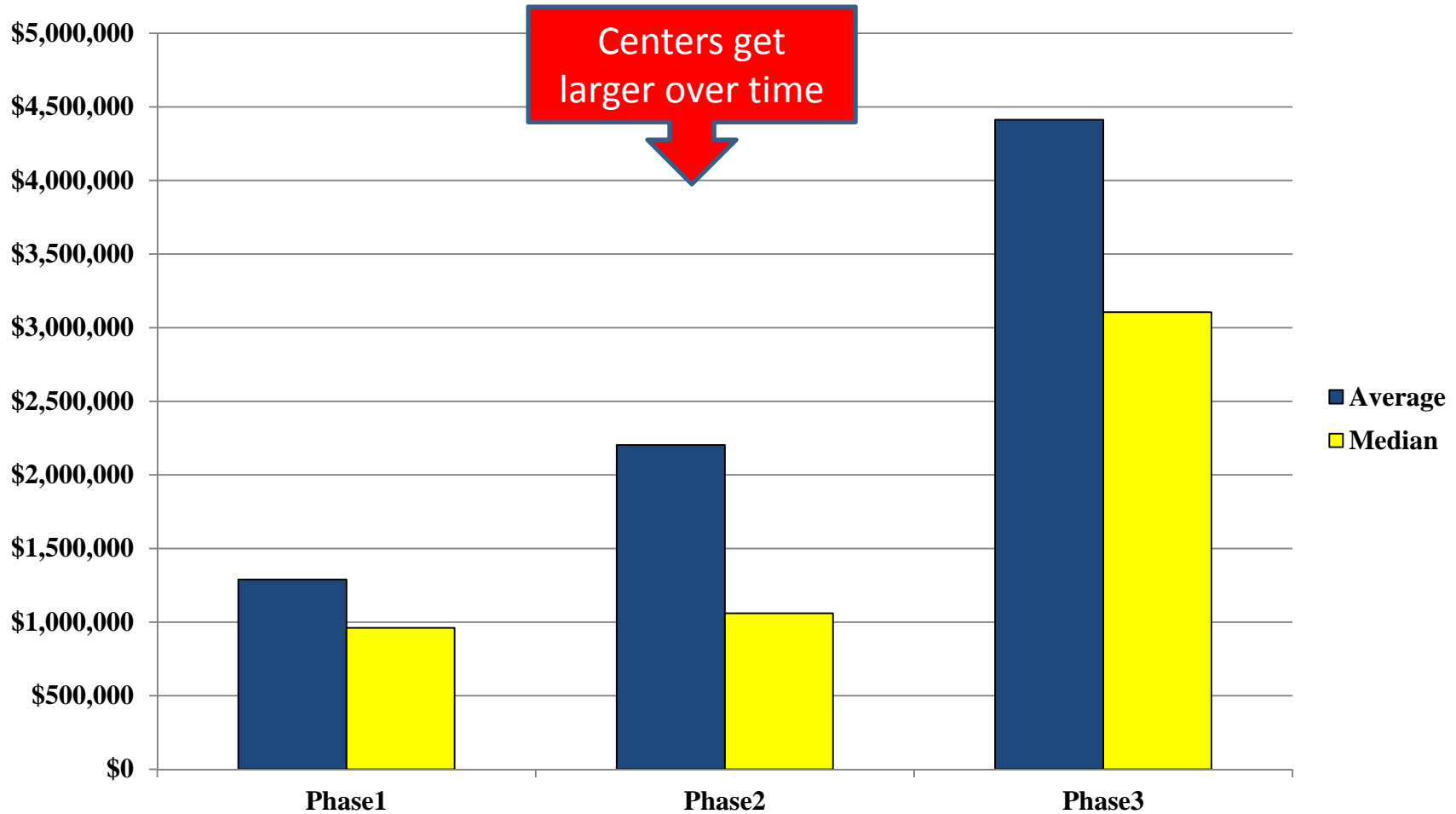


Industry/University
Cooperative Research
Centers





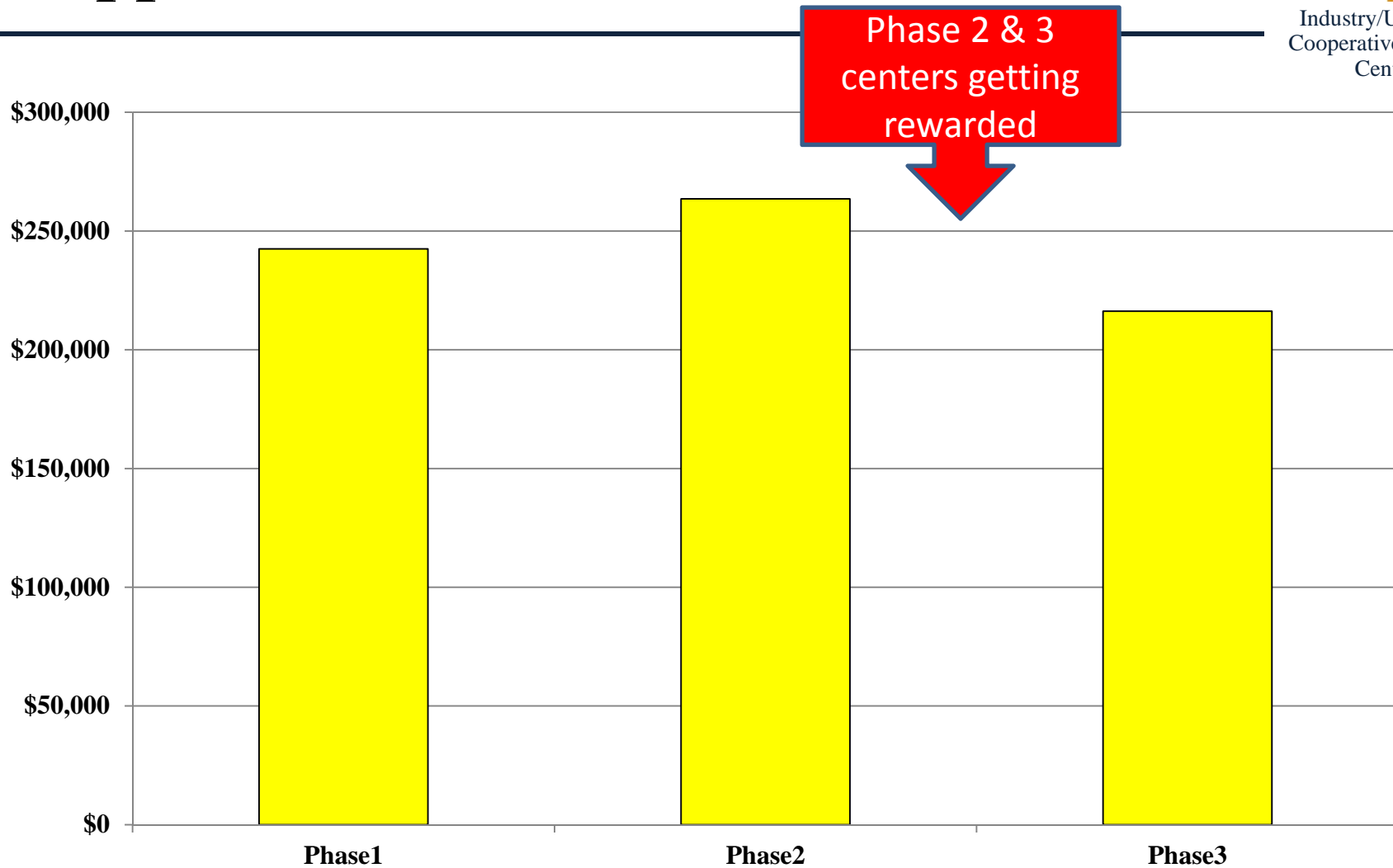
Average & Median Total Center Funding



Average NSF IUCRC Awards & Supplements



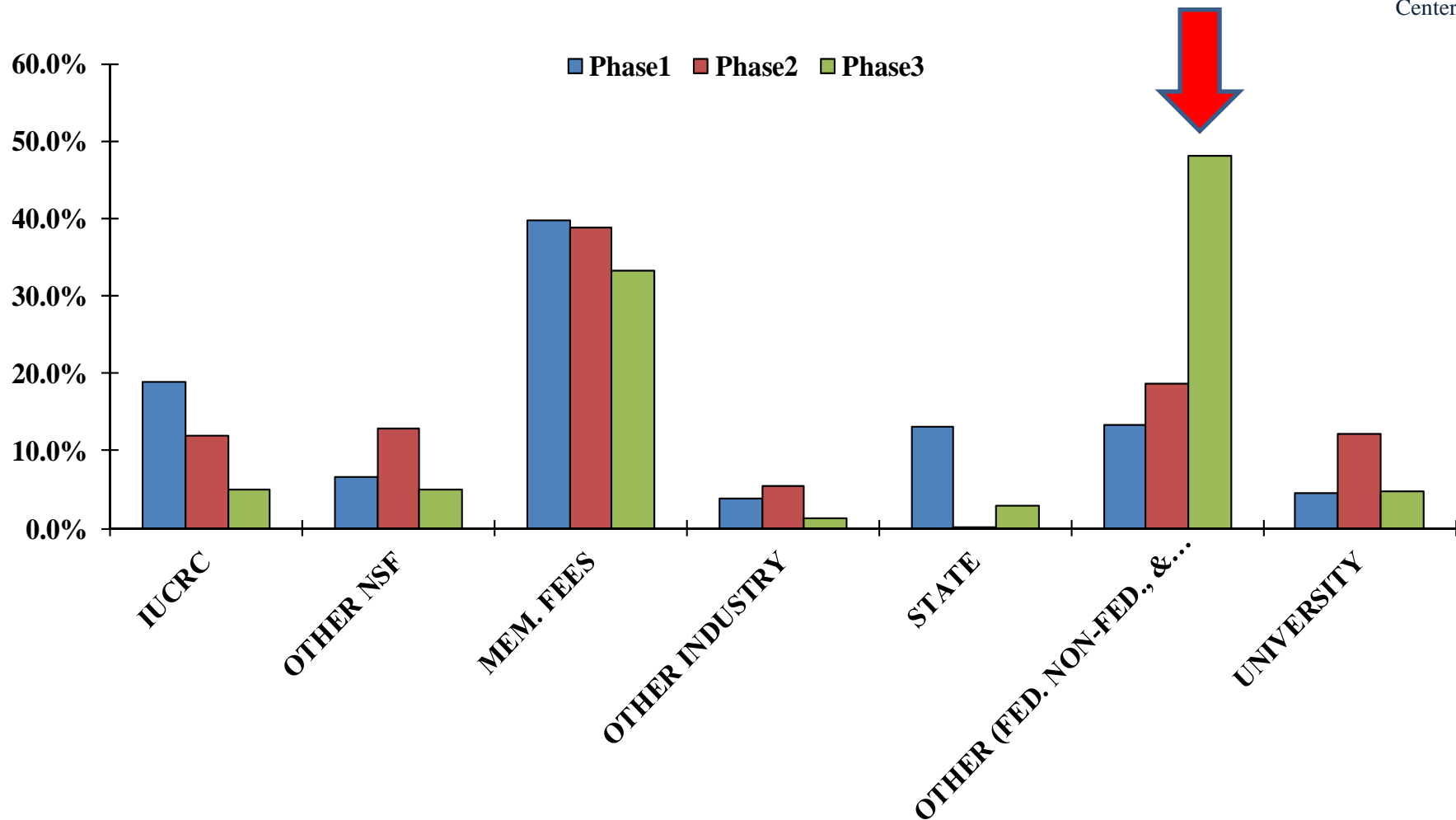
Industry/University
Cooperative Research
Centers



Total Funding by Source in Percentages



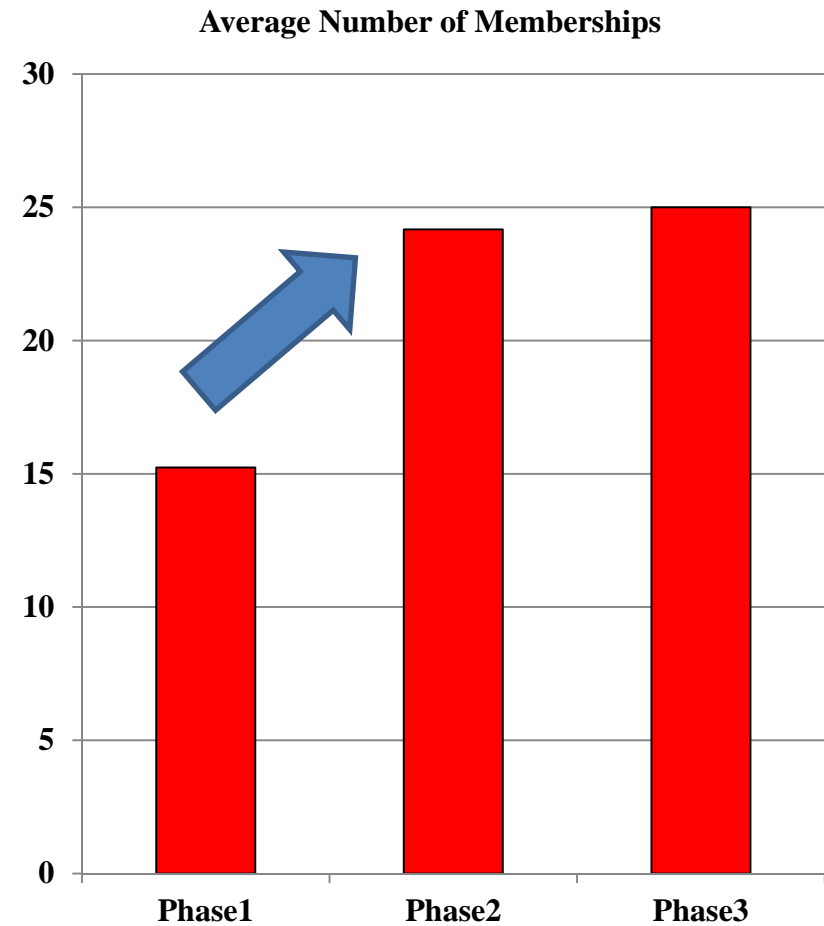
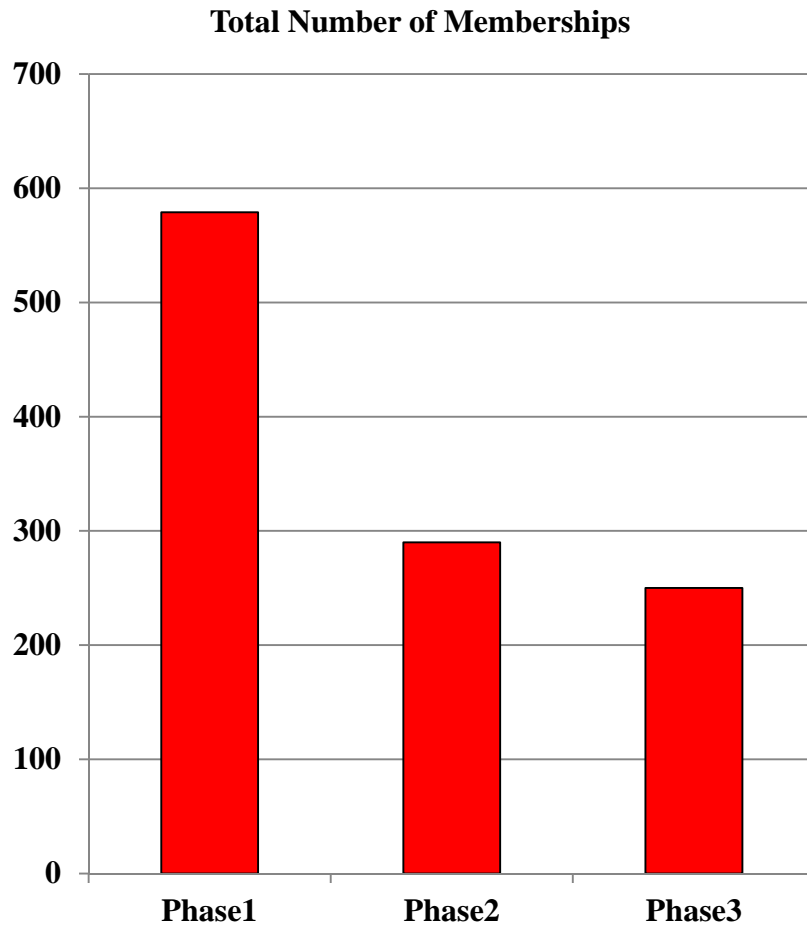
Industry/University
Cooperative Research
Centers



Industrial Memberships



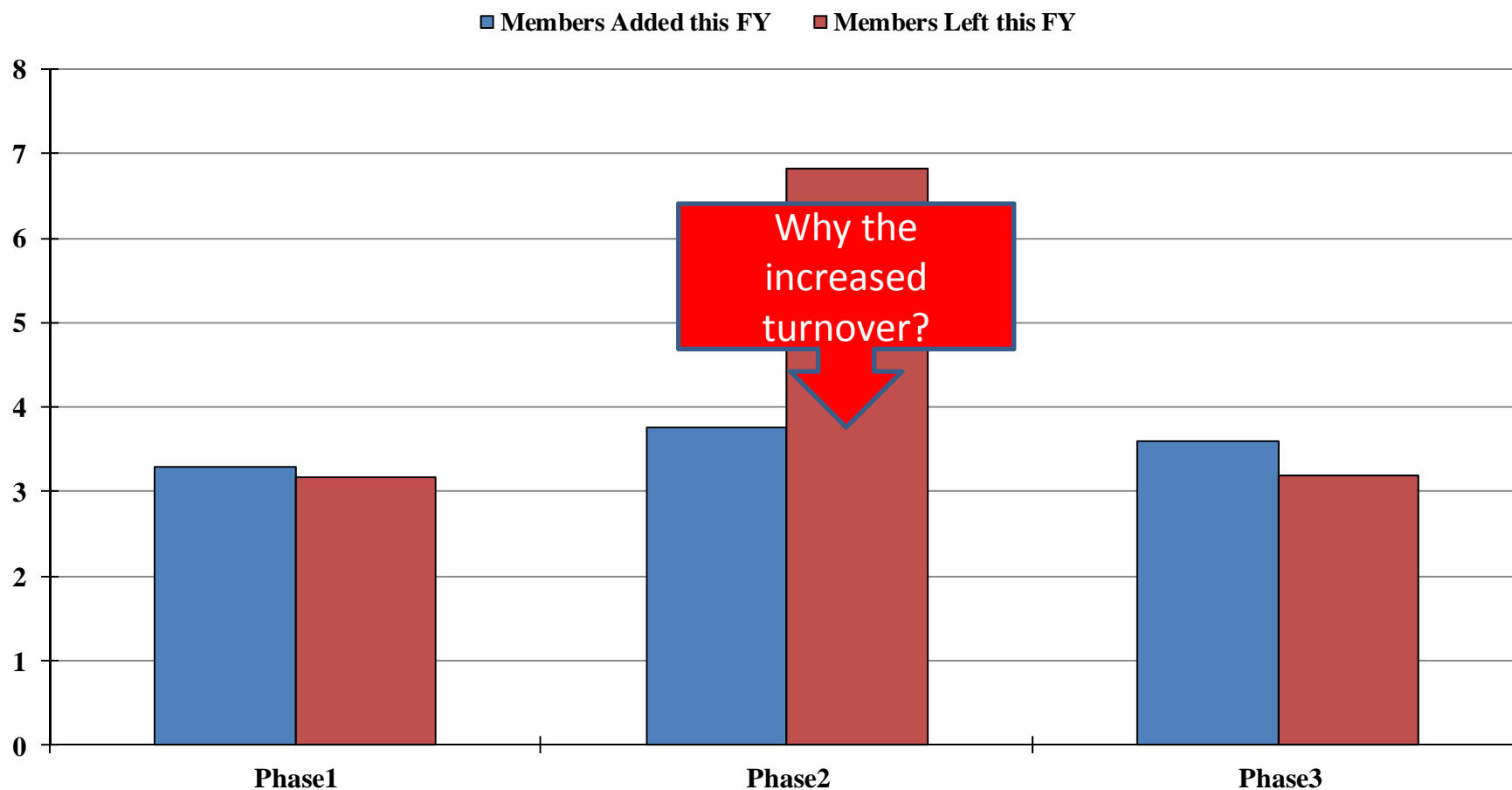
Industry/University
Cooperative Research
Centers



Average Membership Turn Over



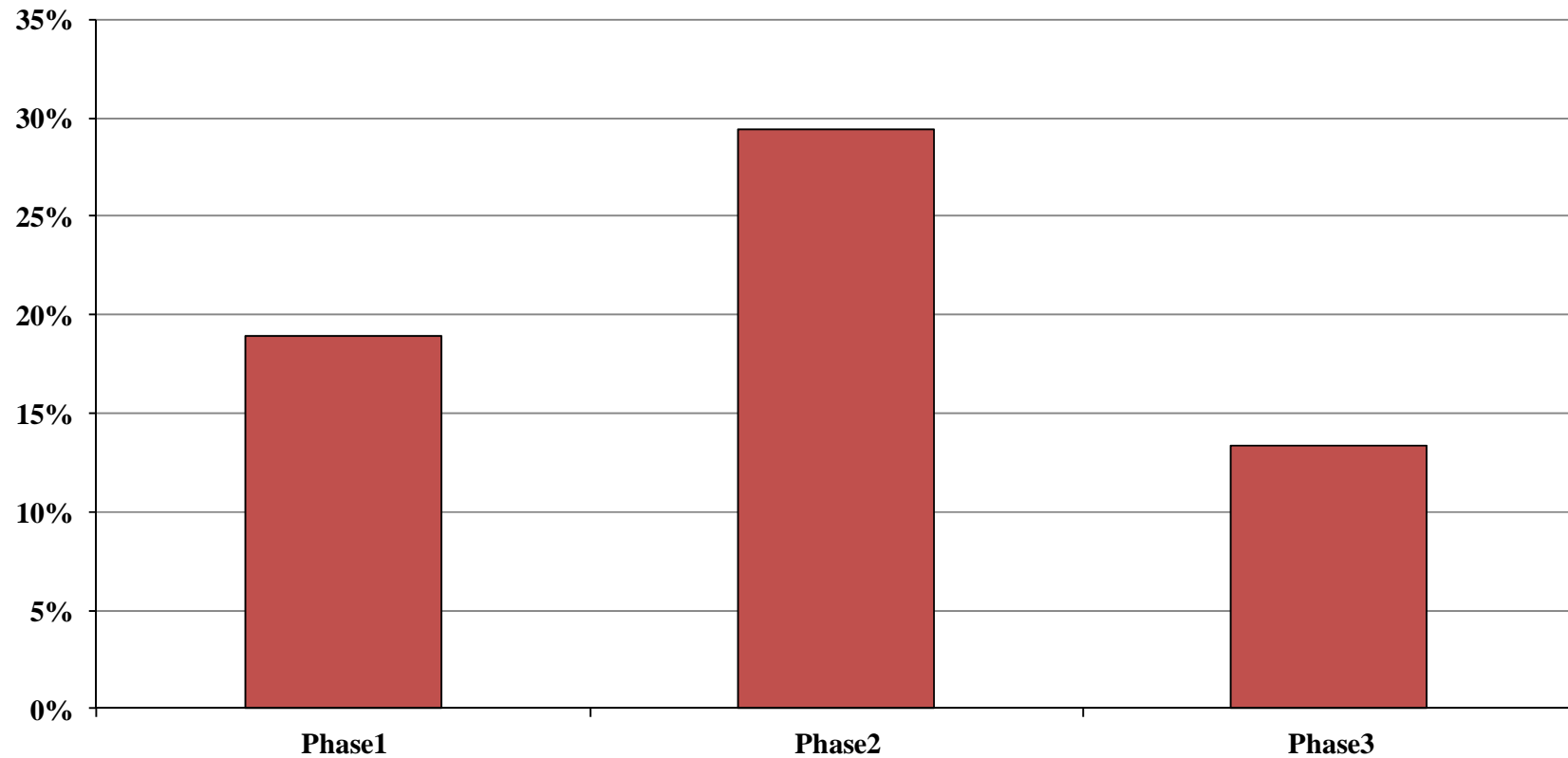
Industry/University
Cooperative Research
Centers



*Newly funded Centers' members are not counted as Members Added
FY 2012-2013 NSF-I/UCRC Center Structure Database



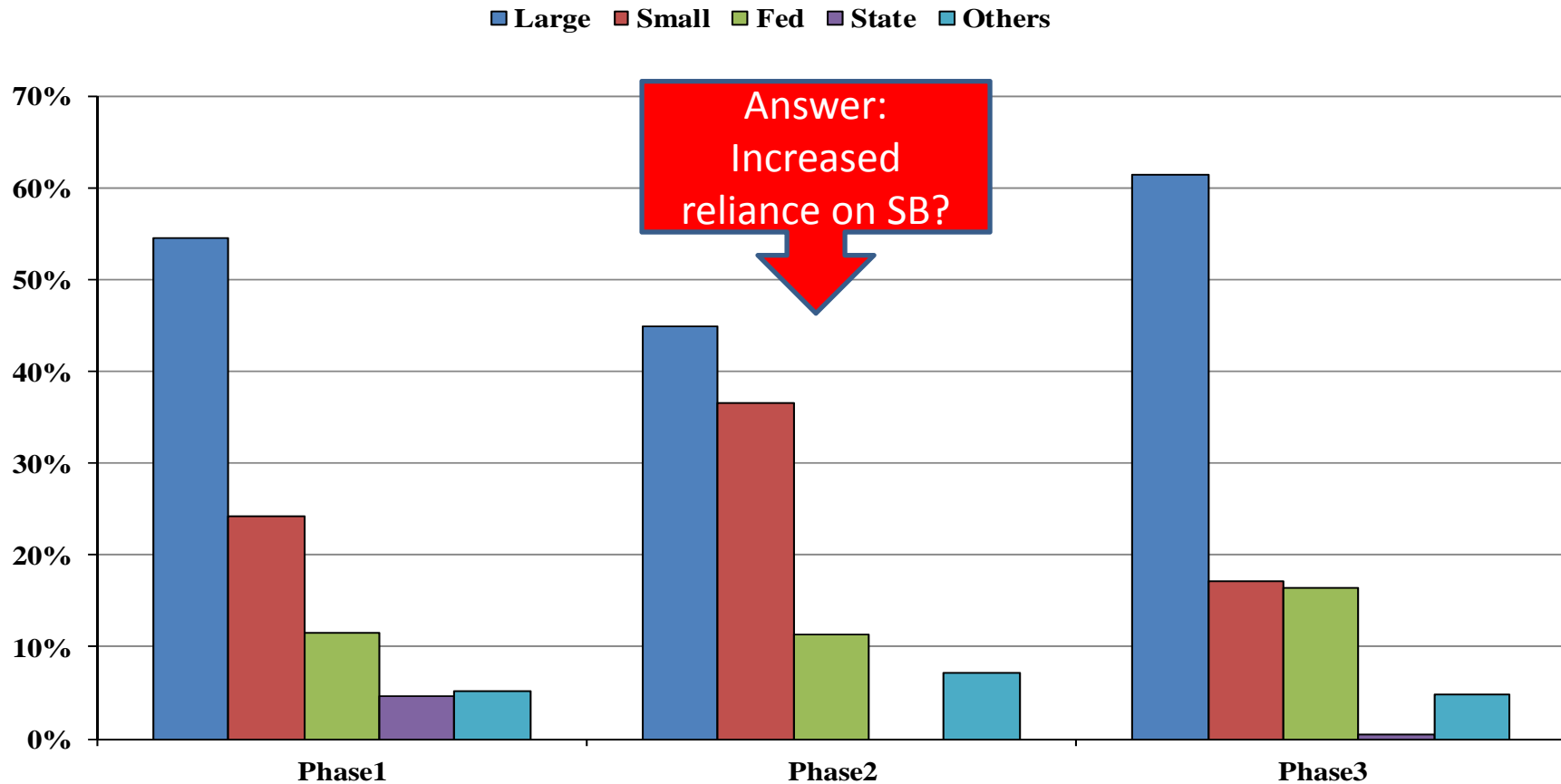
Member Turnover Rate



Turnover % = Members terminated in year X+1 / Total members in year X



Member Composition

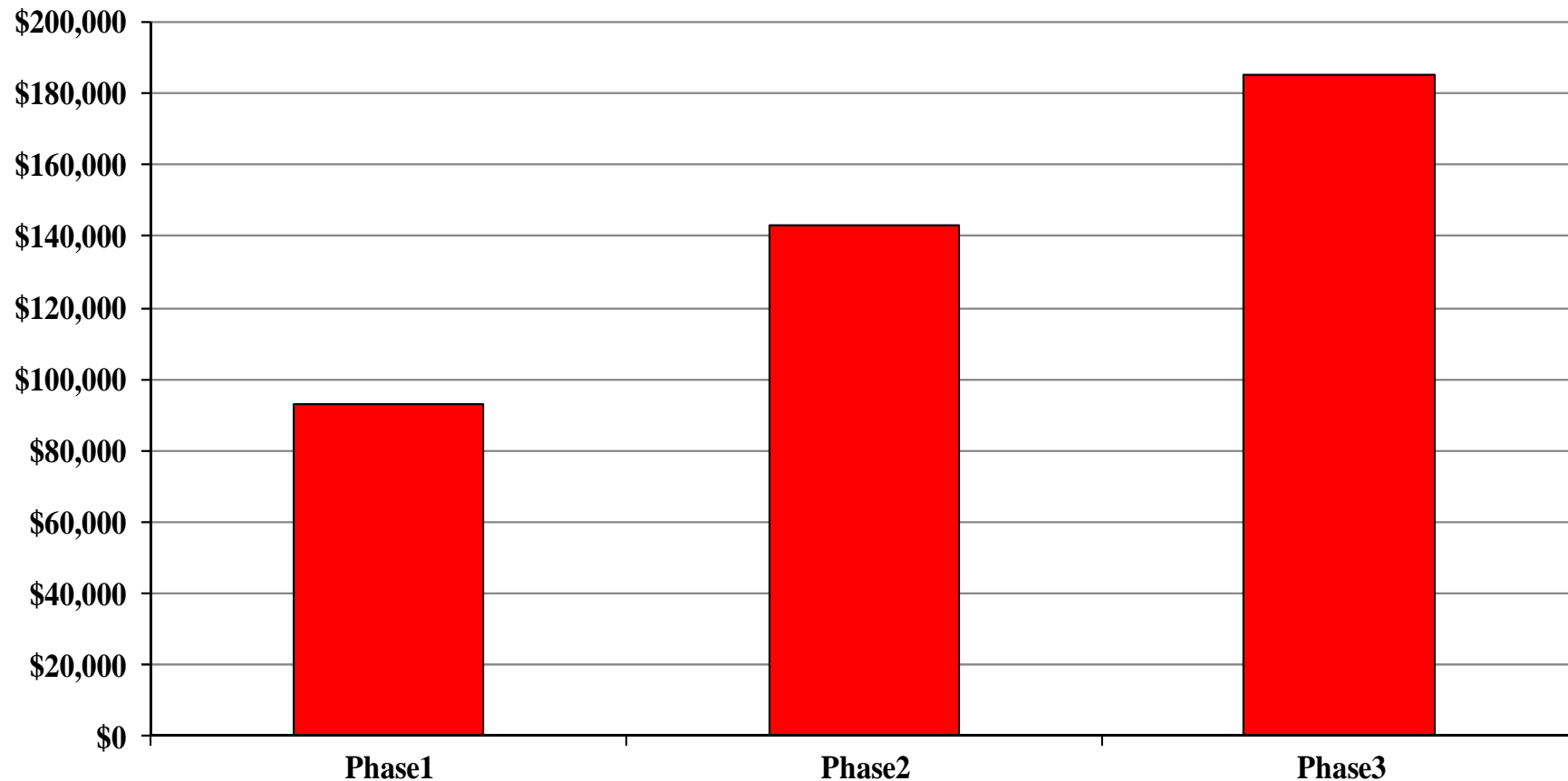


^ Categories comprising Others include: non-profit, non-US gov't, and other org.

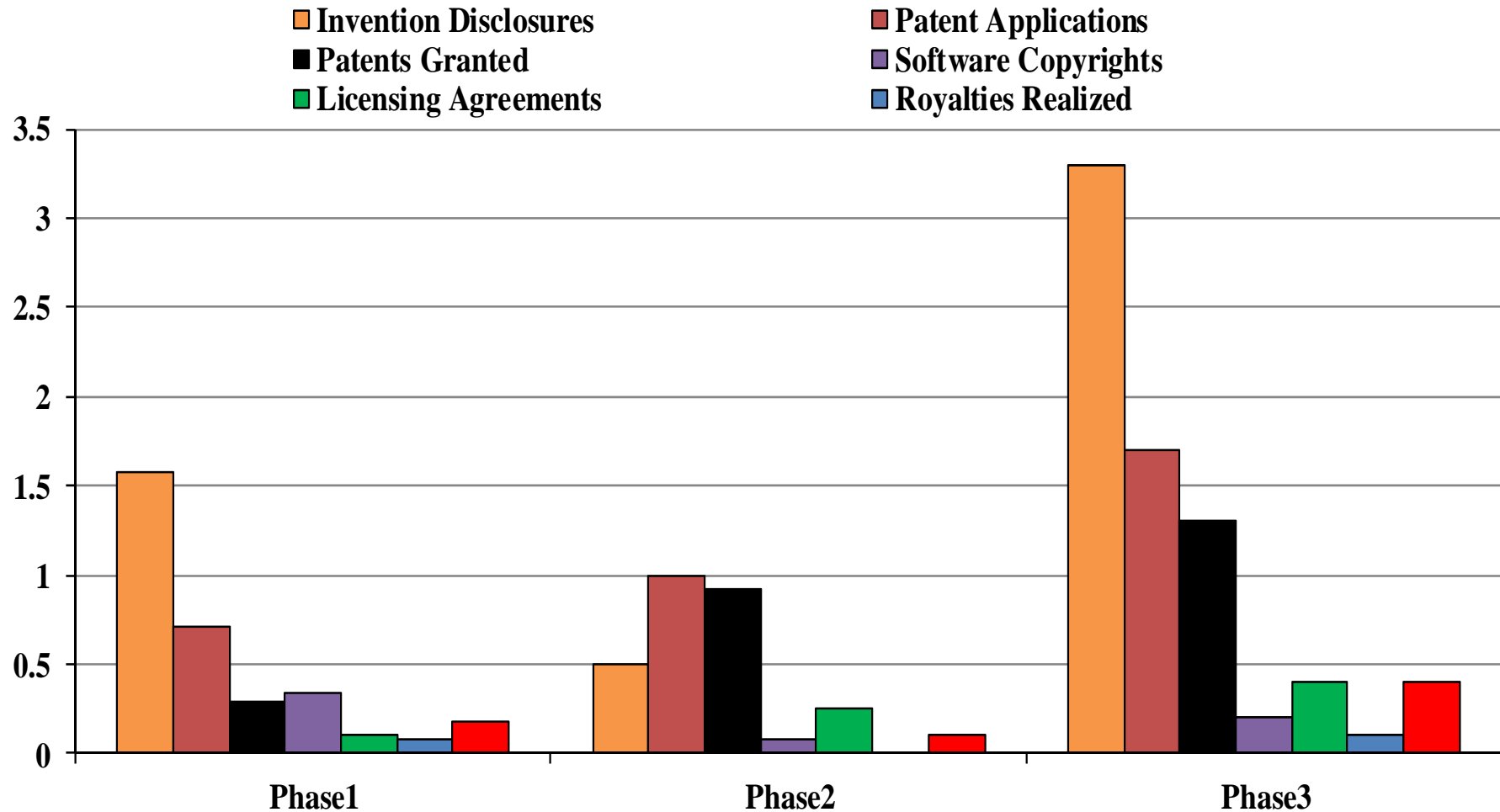
Average Funding per Researcher



Industry/University
Cooperative Research
Centers



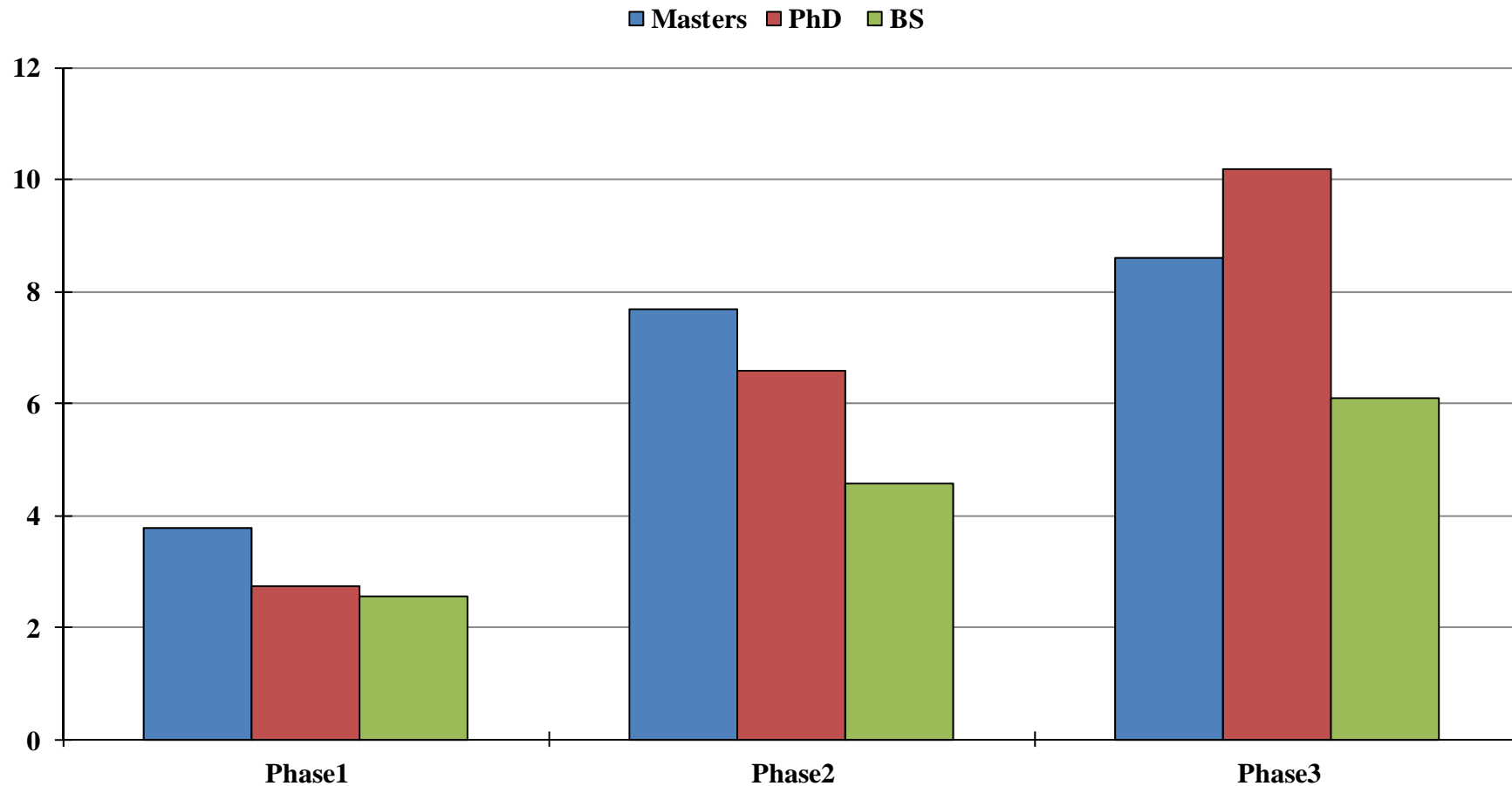
Average Number of Intellectual Property & Commercialization Events 03-13



Average Students Graduated



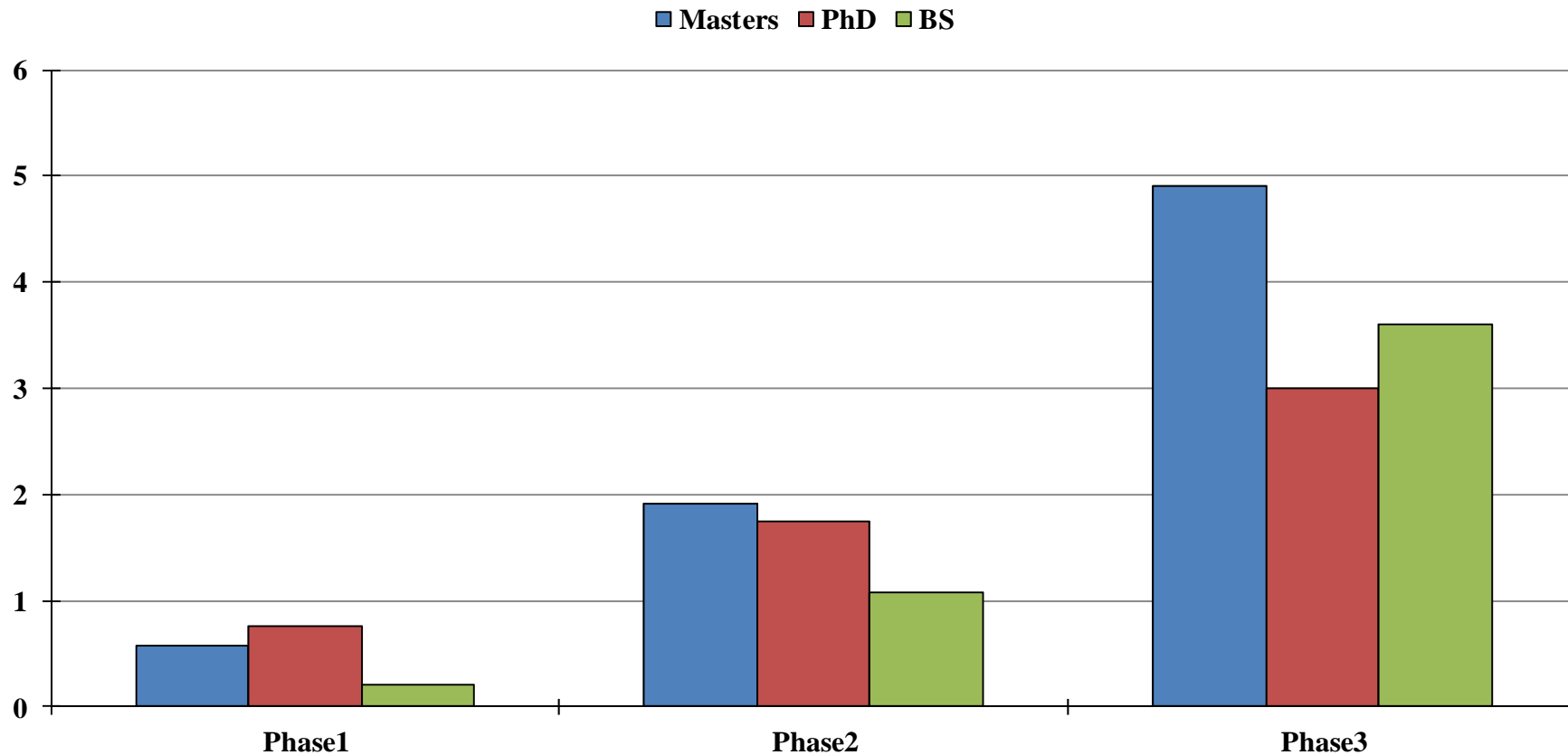
Industry/University
Cooperative Research
Centers



Average Students Hired by Members



Industry/University
Cooperative Research
Centers





Industry/University
Cooperative Research
Centers

QUESTIONS?