



Industry/University
Cooperative Research
Centers

IUCRC PROGRAM FINDINGS FROM THE CENTER STRUCTURE DATABASE

DRAFT RESULTS: FY 2013-2014

***Data collected from 66 out of total 66 active centers**

**TRENDS FROM CENTER STRUCTURE DATABASE:
1980-2014**

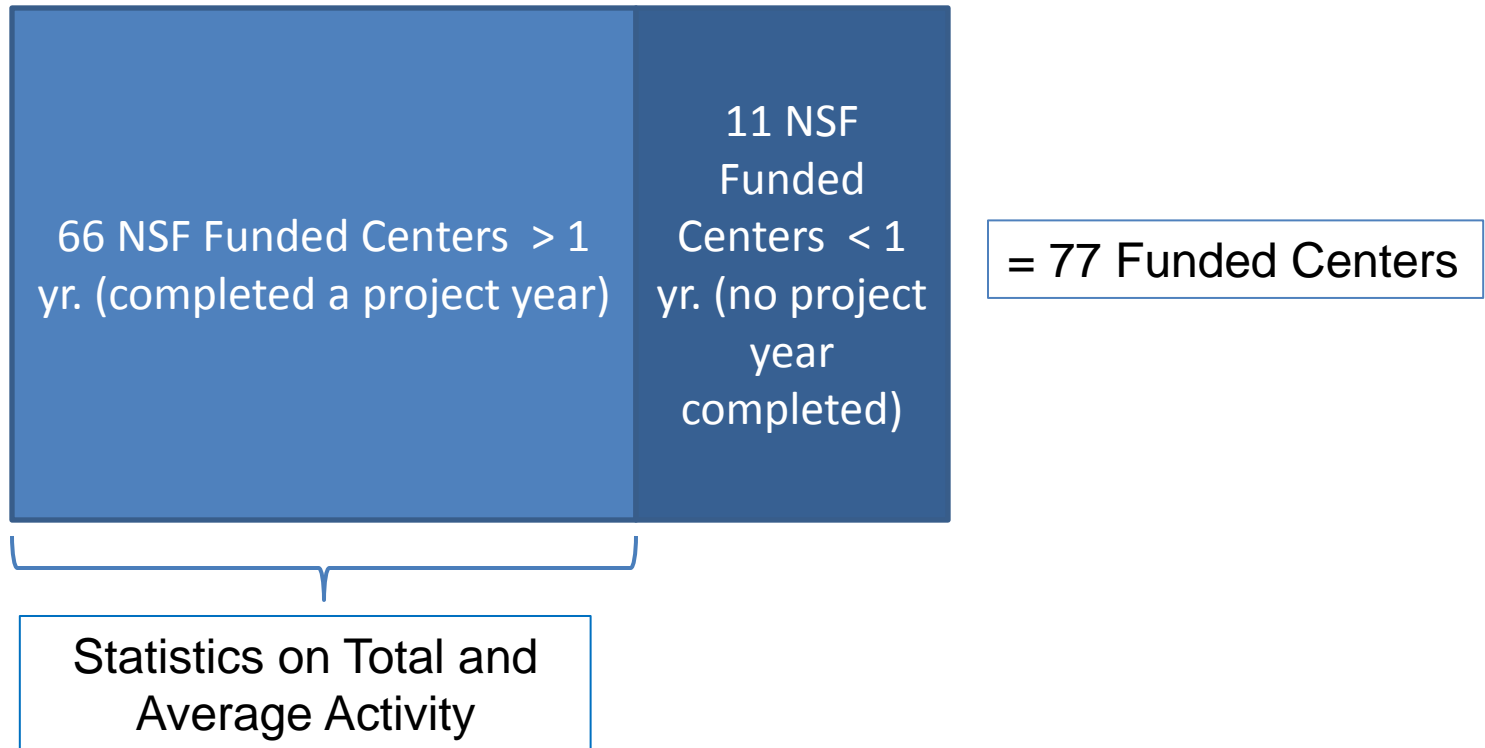
*Gray, D.O., Leonchuk, O., & McGowen, L.C.
North Carolina State University*

Understanding Center Count and Activity Statistics



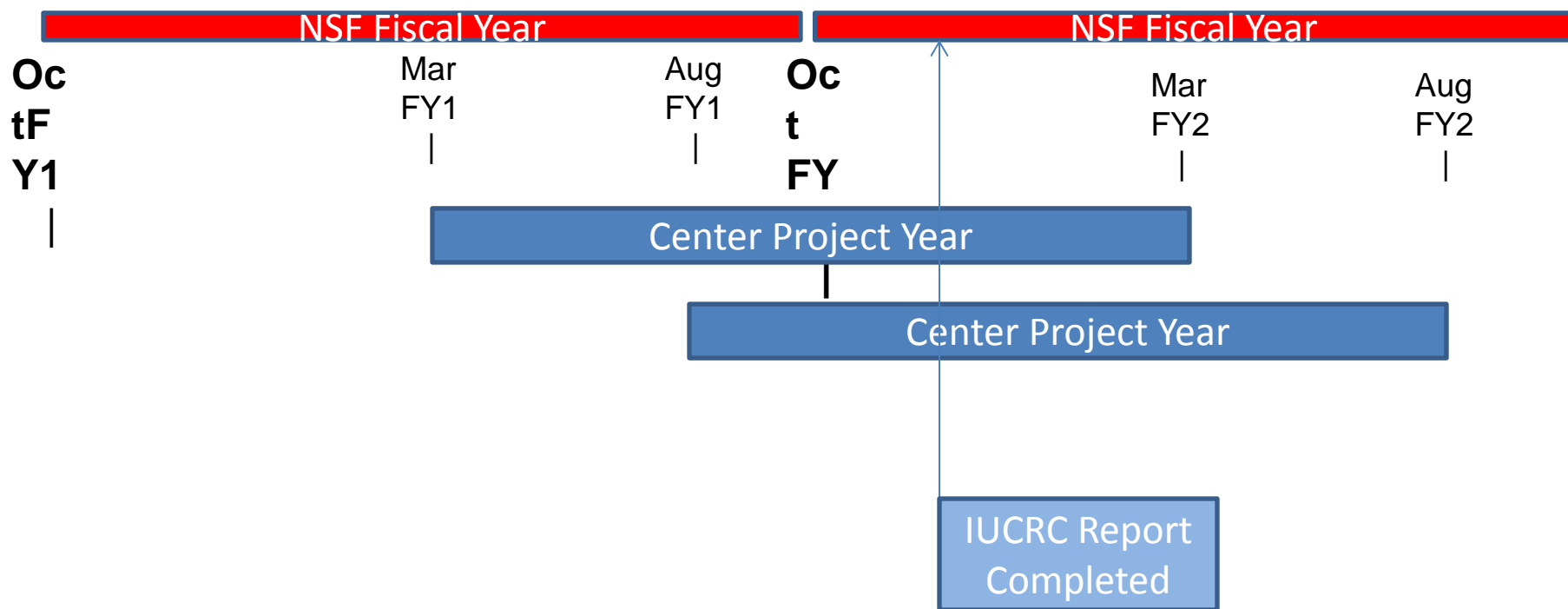
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FY 2014





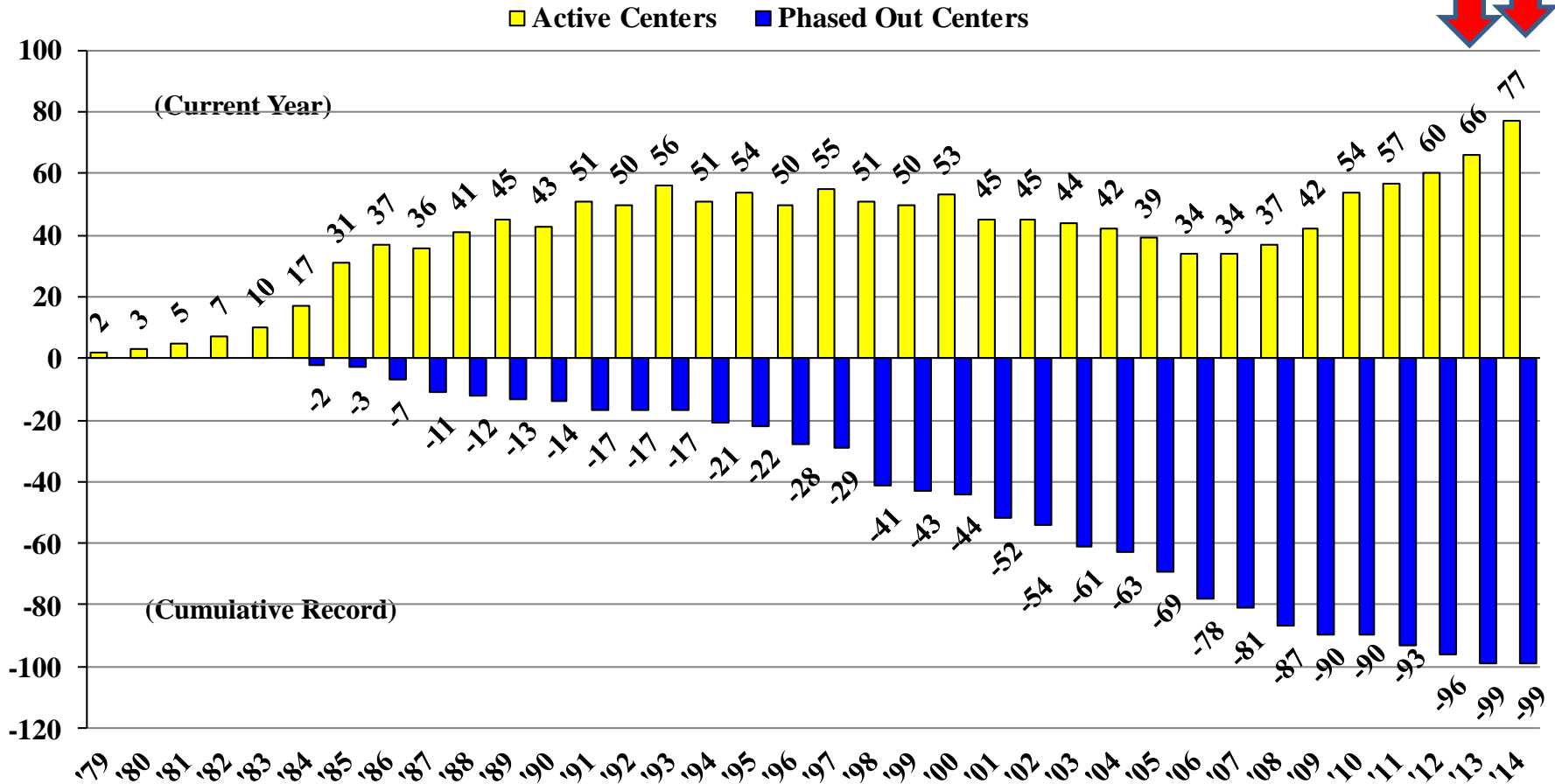
NSF and Center Budgeting Life Cycle



Center Life Cycle*



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Research
Centers
Program

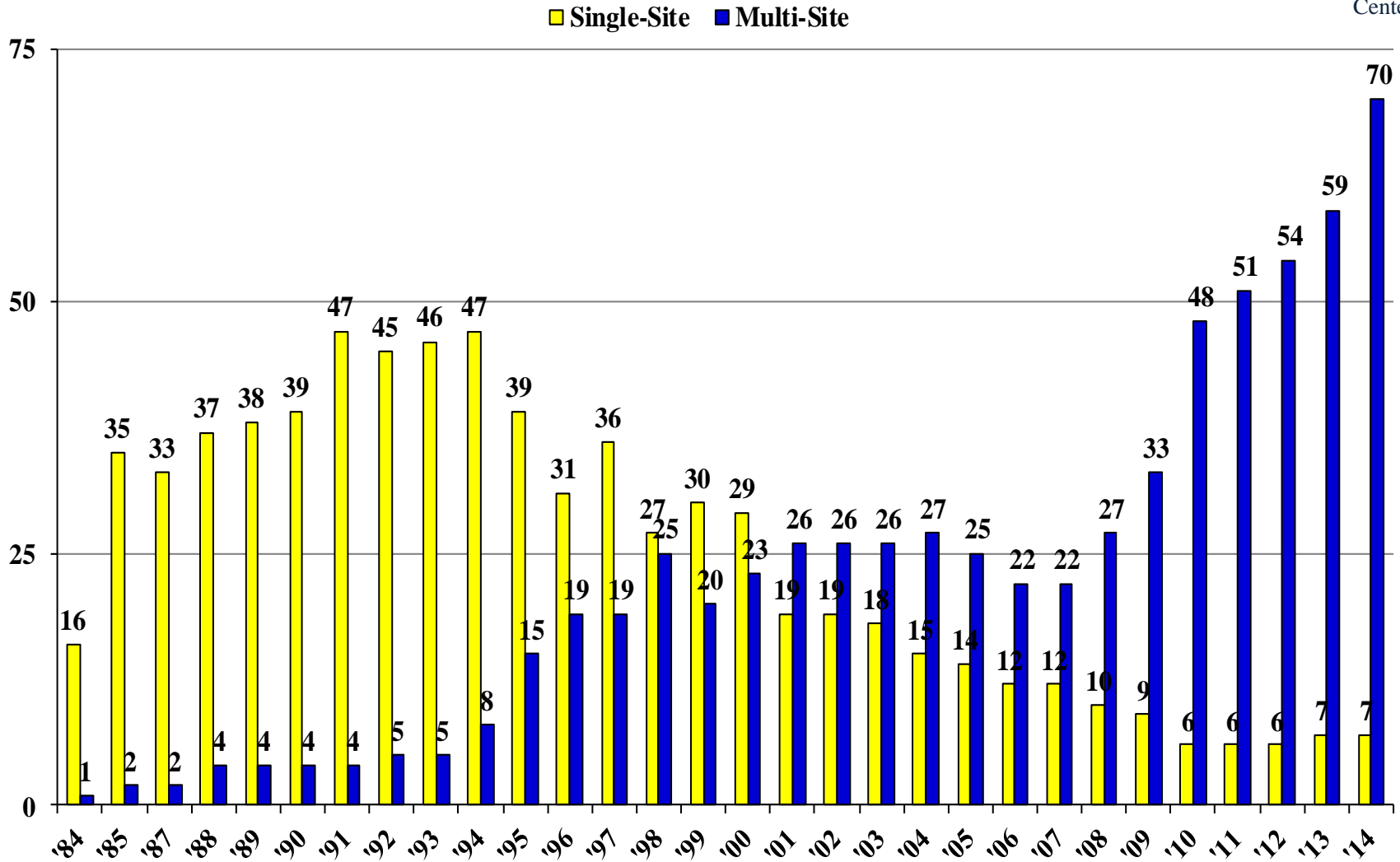


*Data Current for NSF FY2014

Single & Multi-Site Centers*



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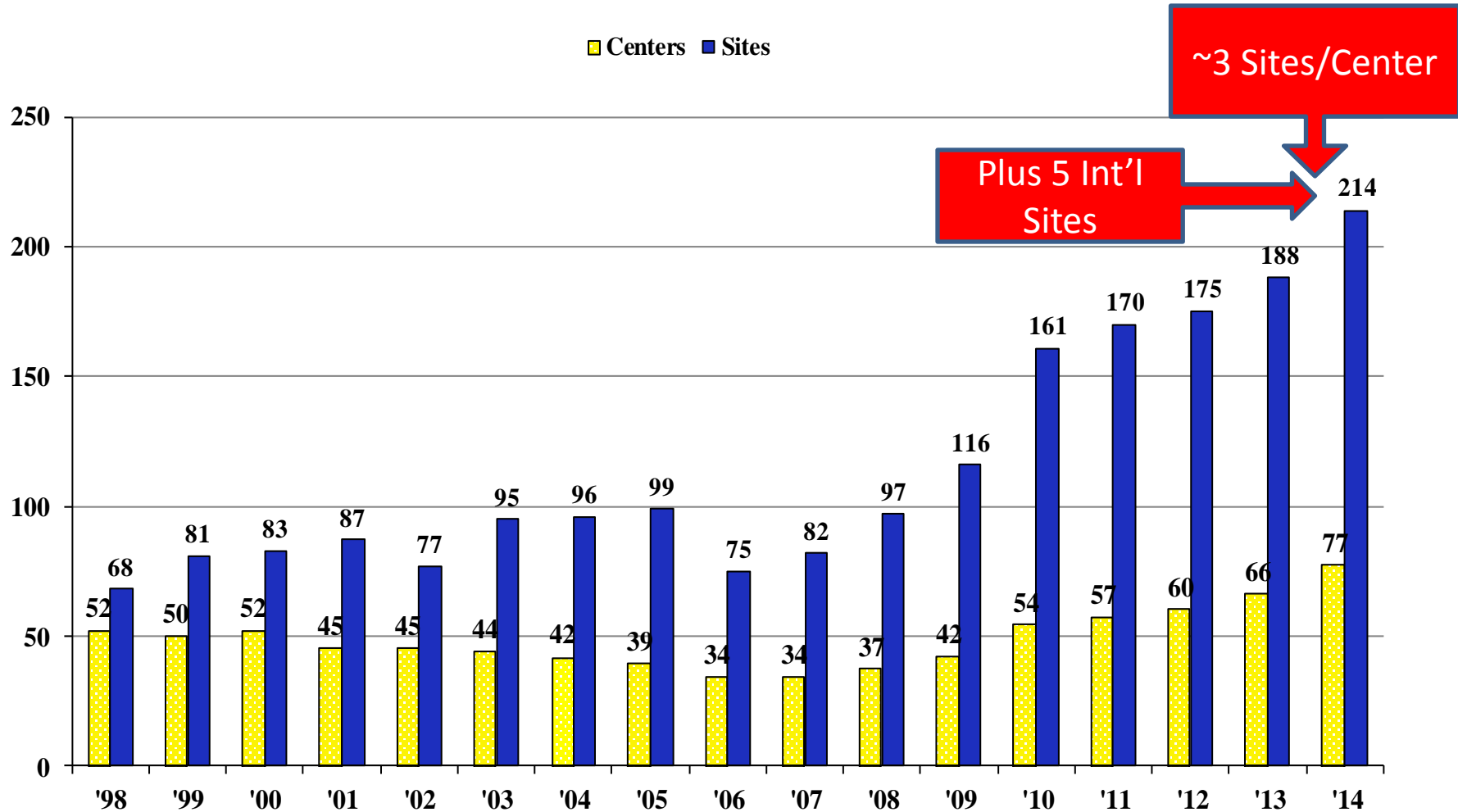
NSF-I/UCRC Center Structure Database

*Data Current for NSF FY2014

ACTIVE CENTERS AND SITES BY YEAR*



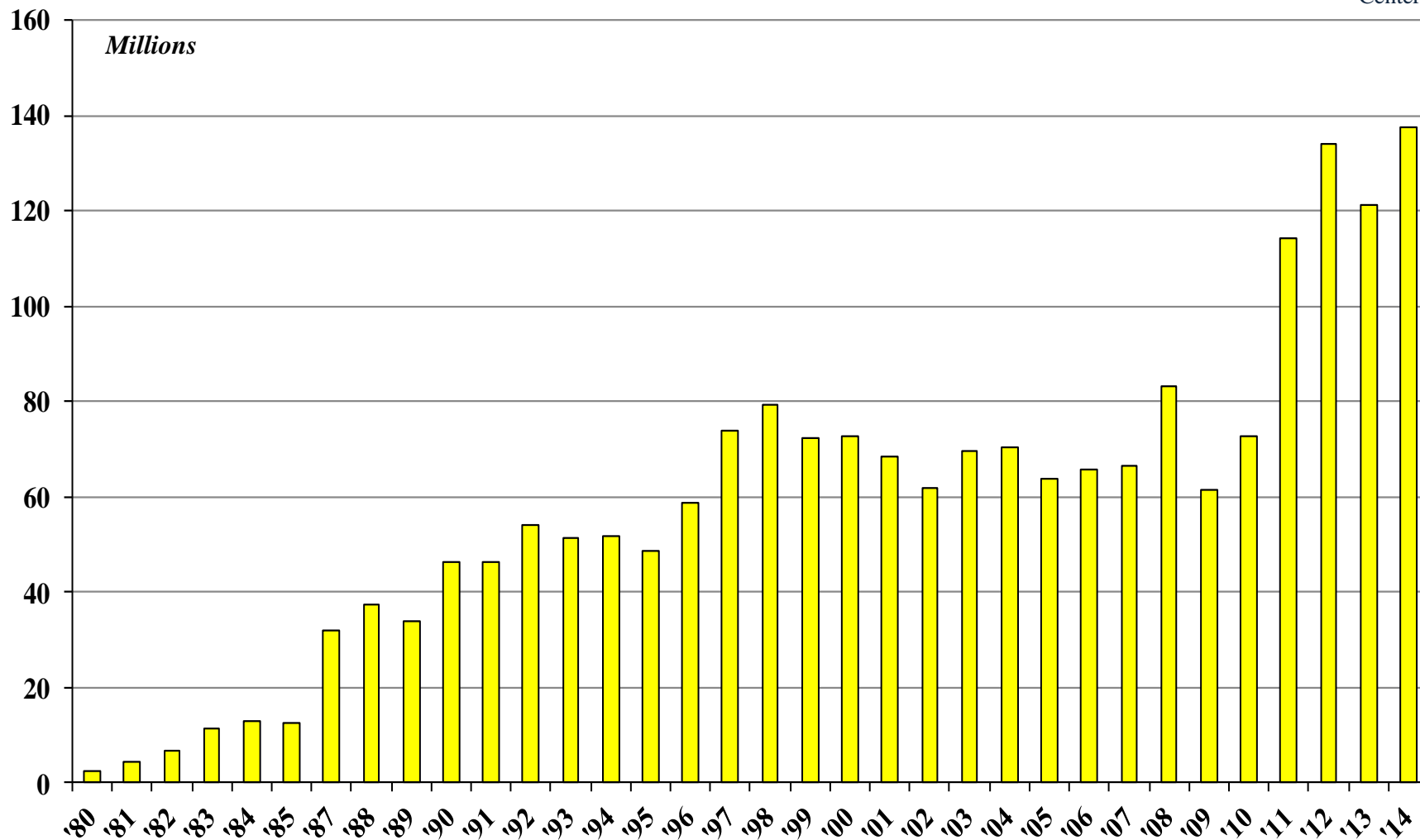
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*Data Current for NSF FY2014



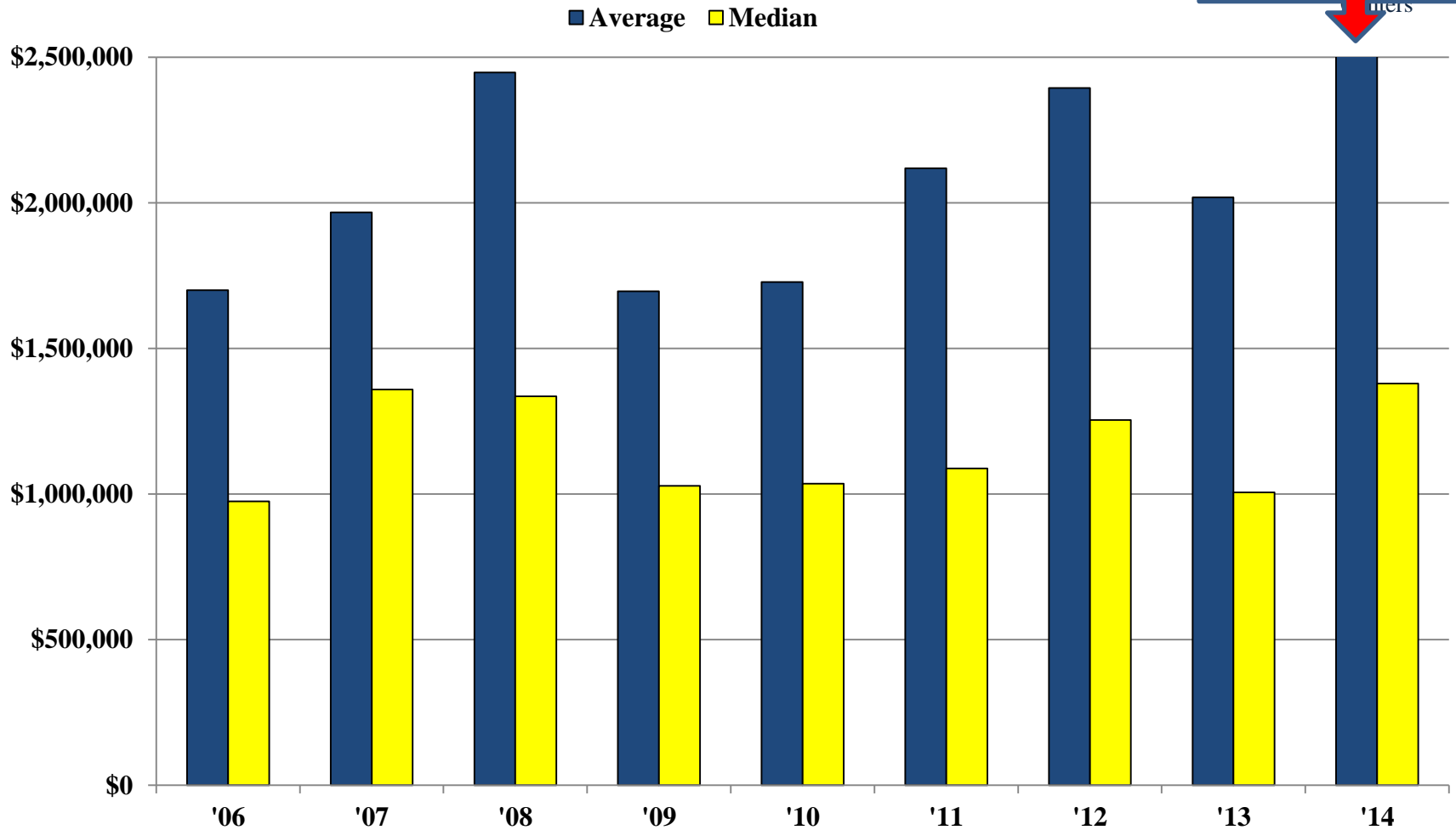
Total Program Funding



Average & Median Total Center Funding



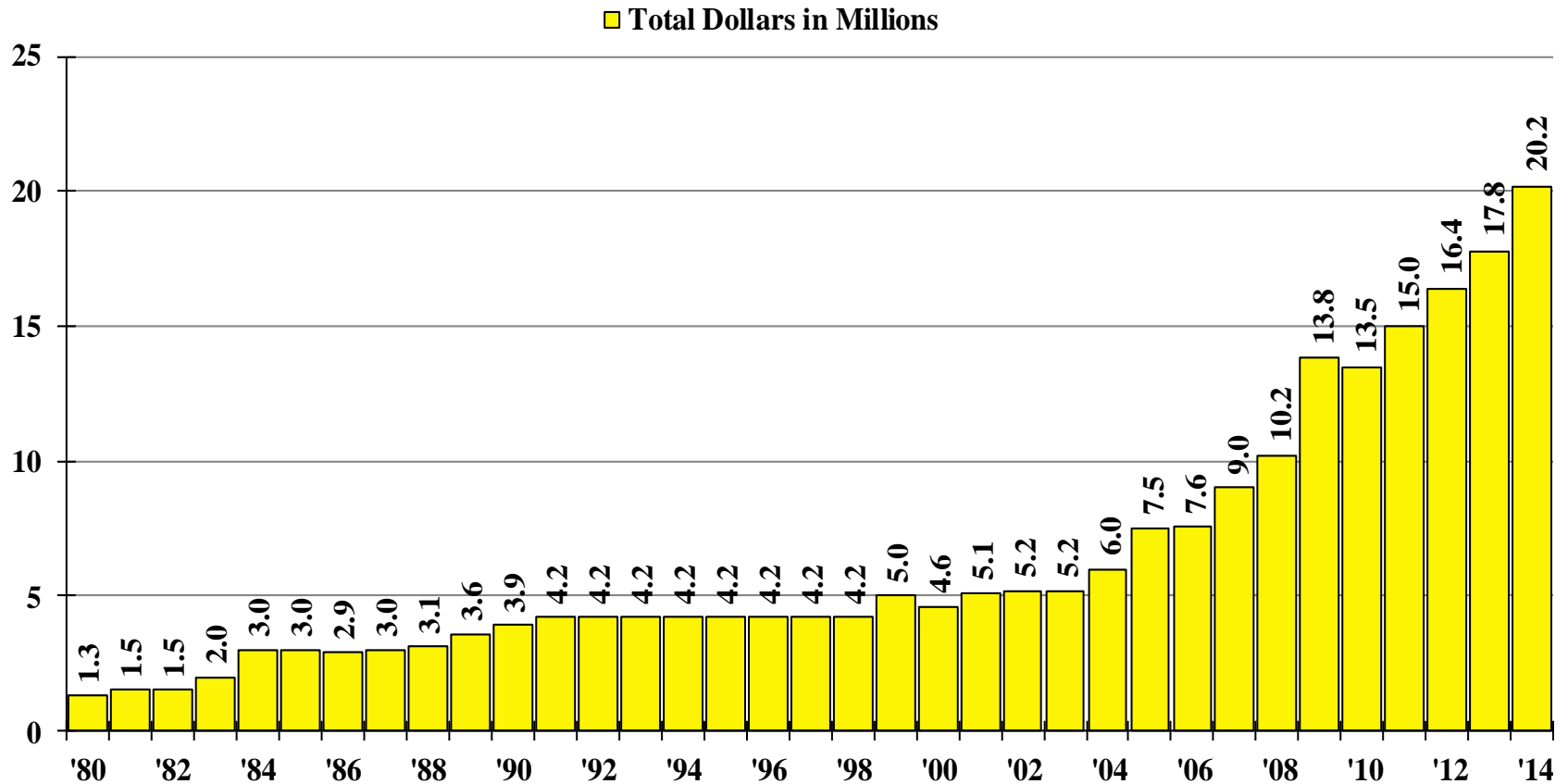
Other Federal
Rebounding



NSF Budget by Year



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Centers



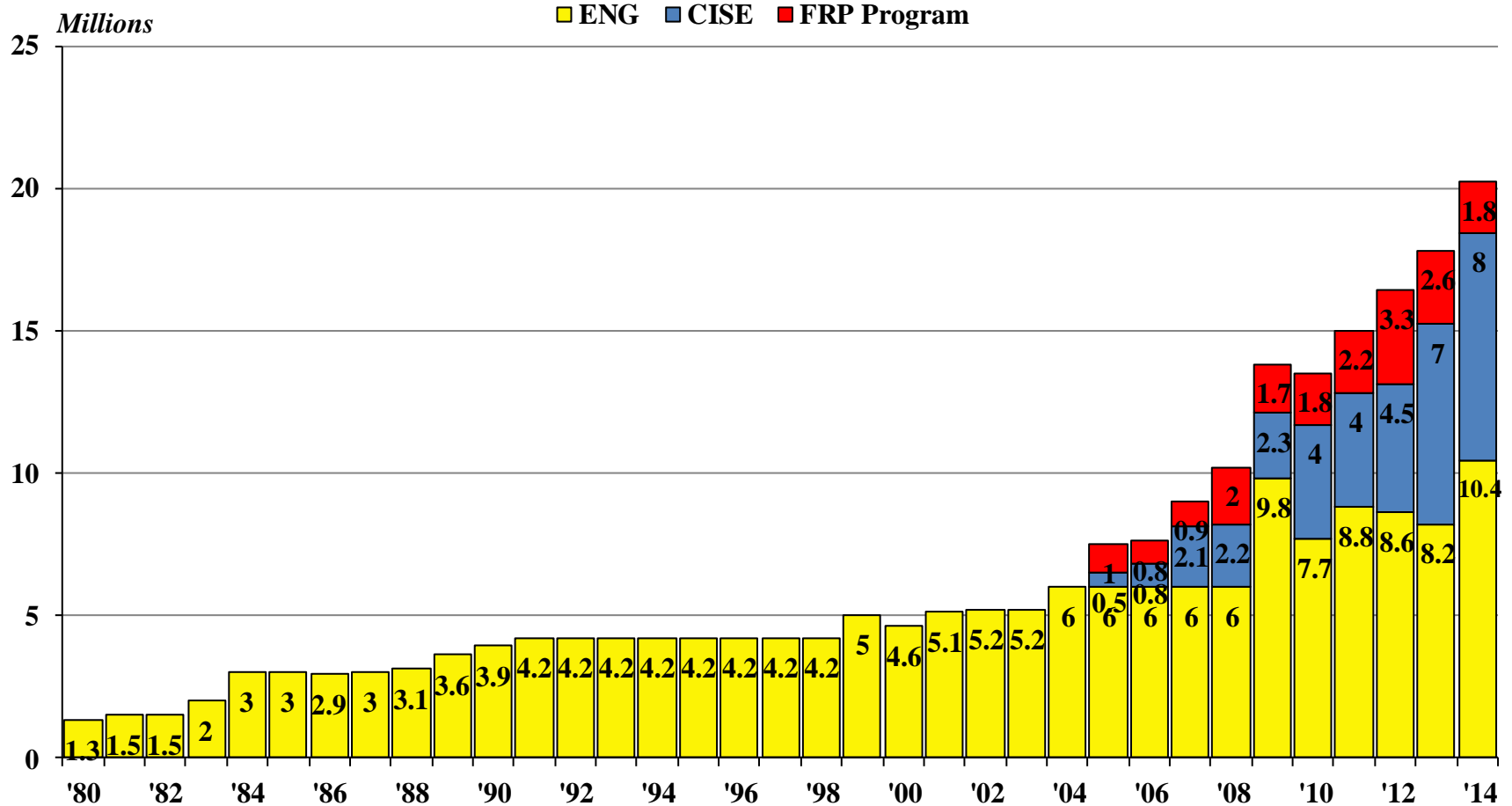
Note: 2005-2014: Include Supplemental Funding and CISE



NSF Budget by Year

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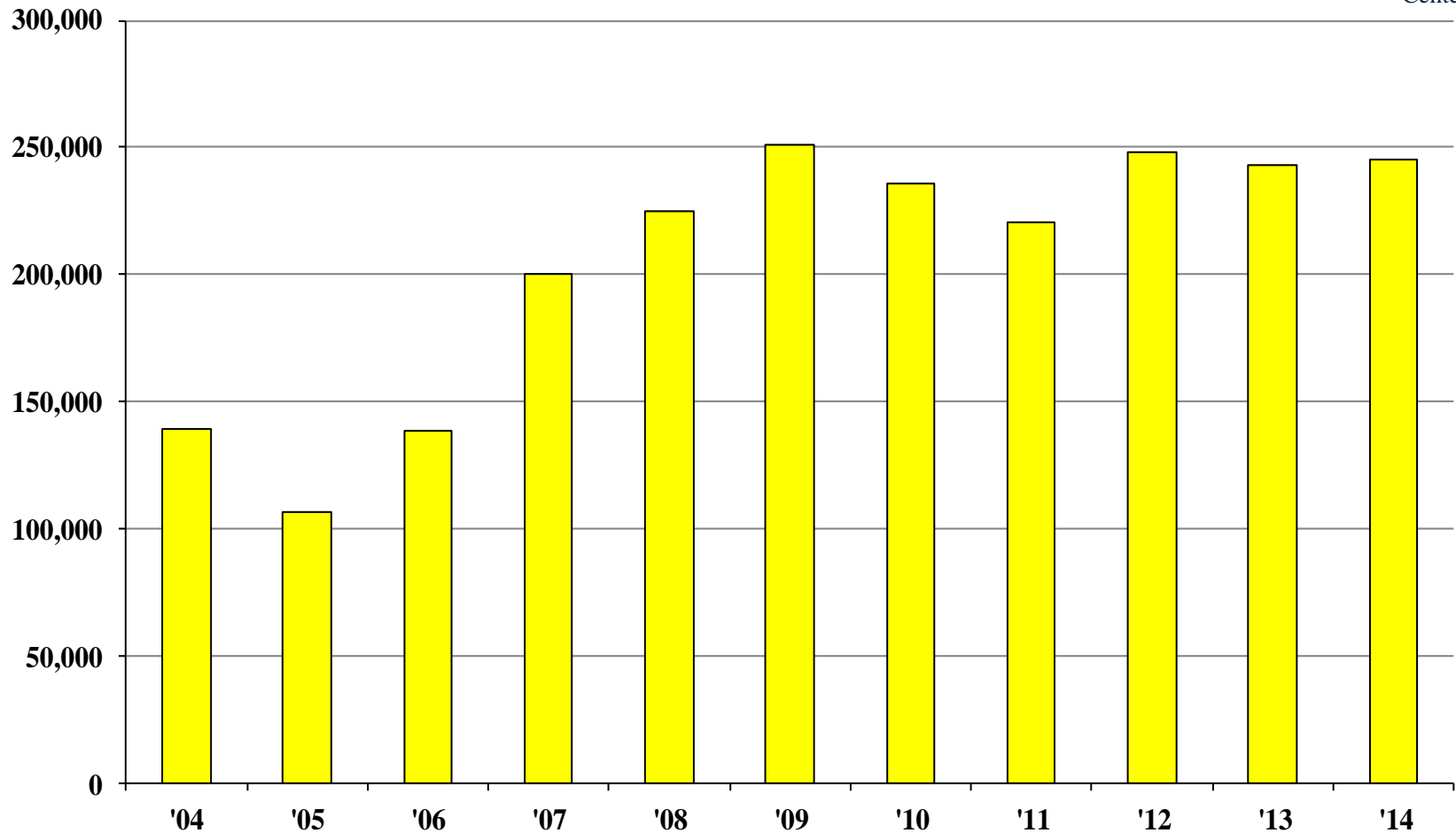
Other Programs co-fund too!



Average NSF IUCRC Awards & Supplements per Center



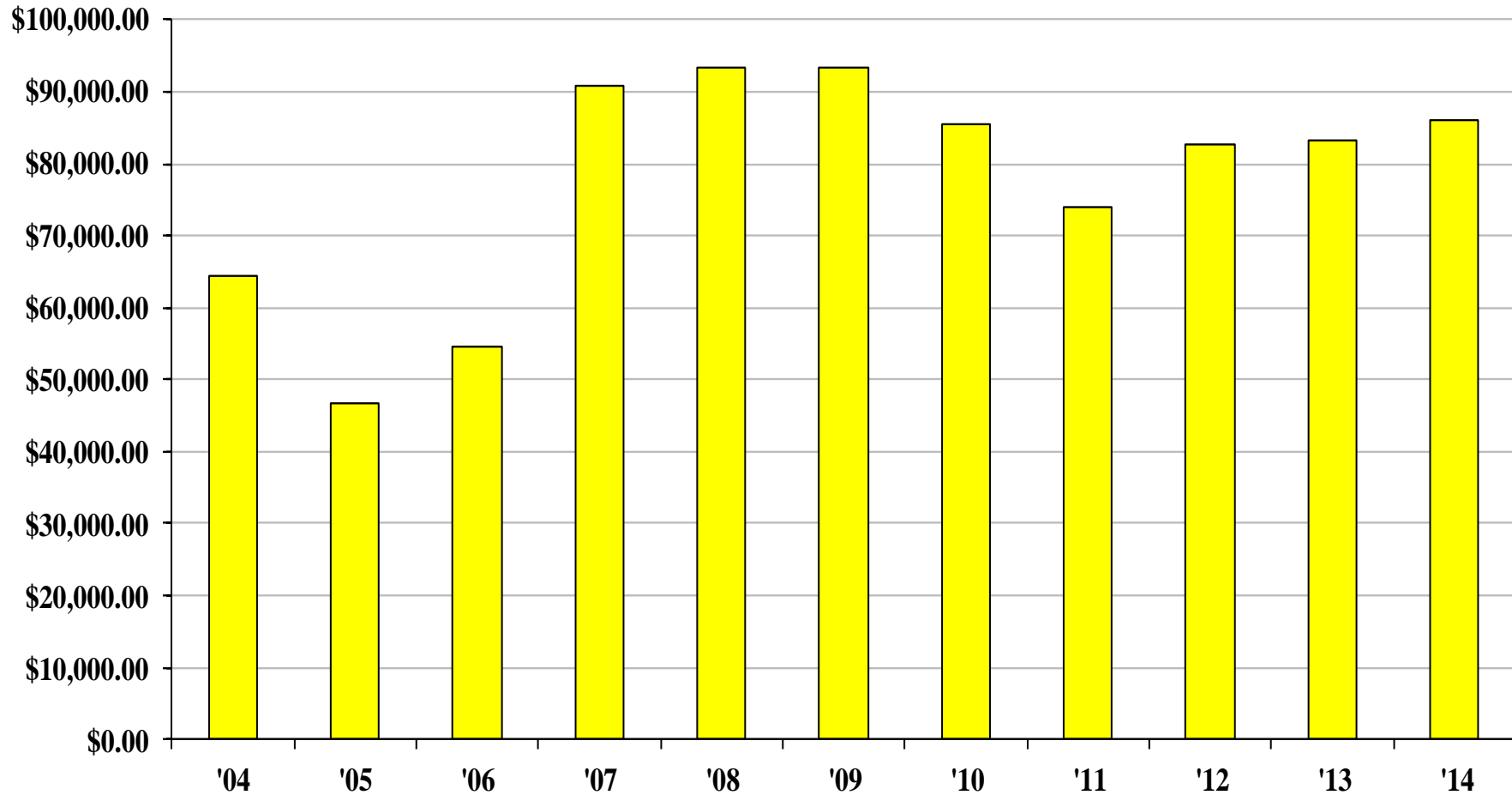
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Average NSF IUCRC Funding per Site



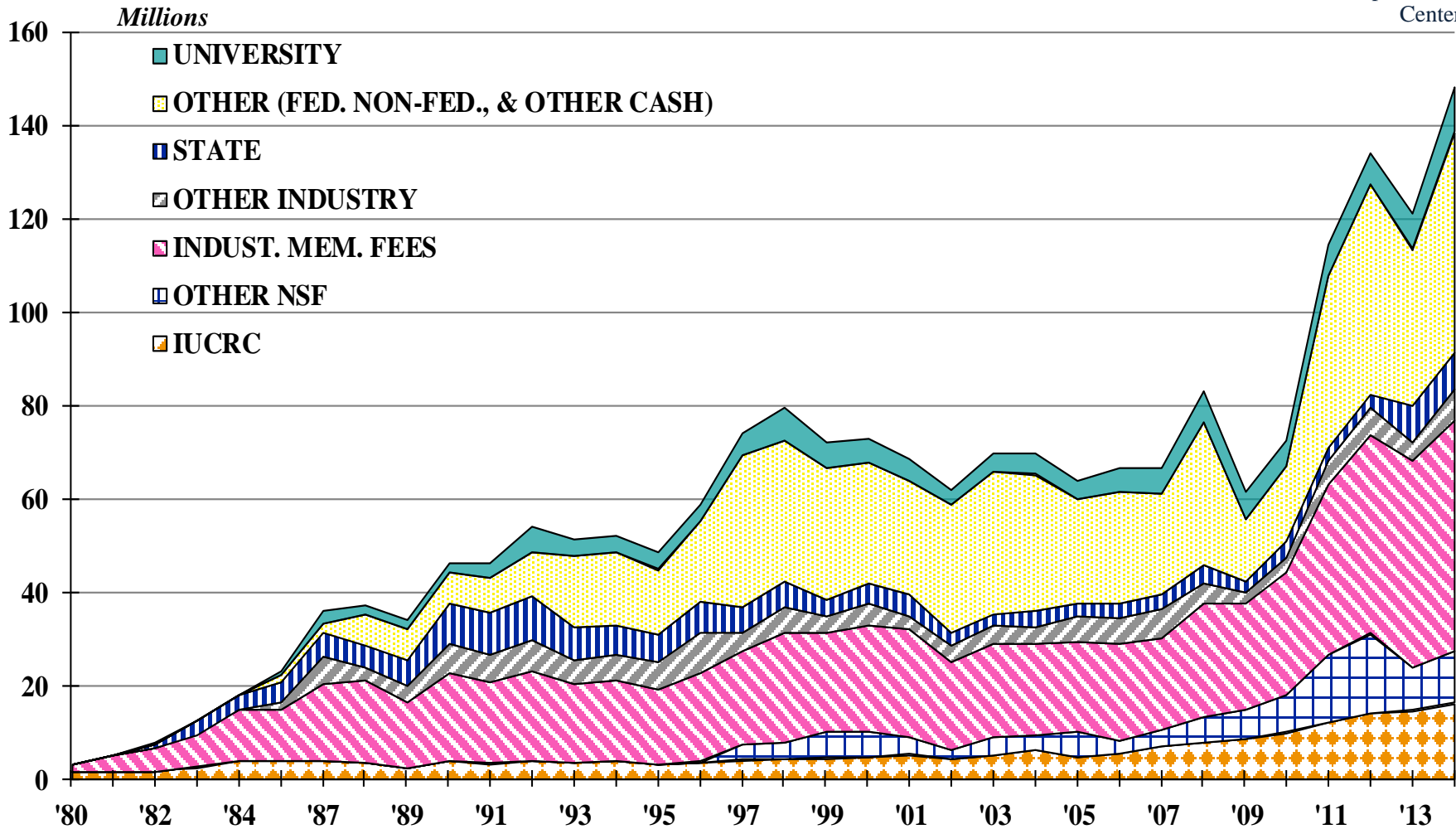
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Total Funding by Source in Dollars



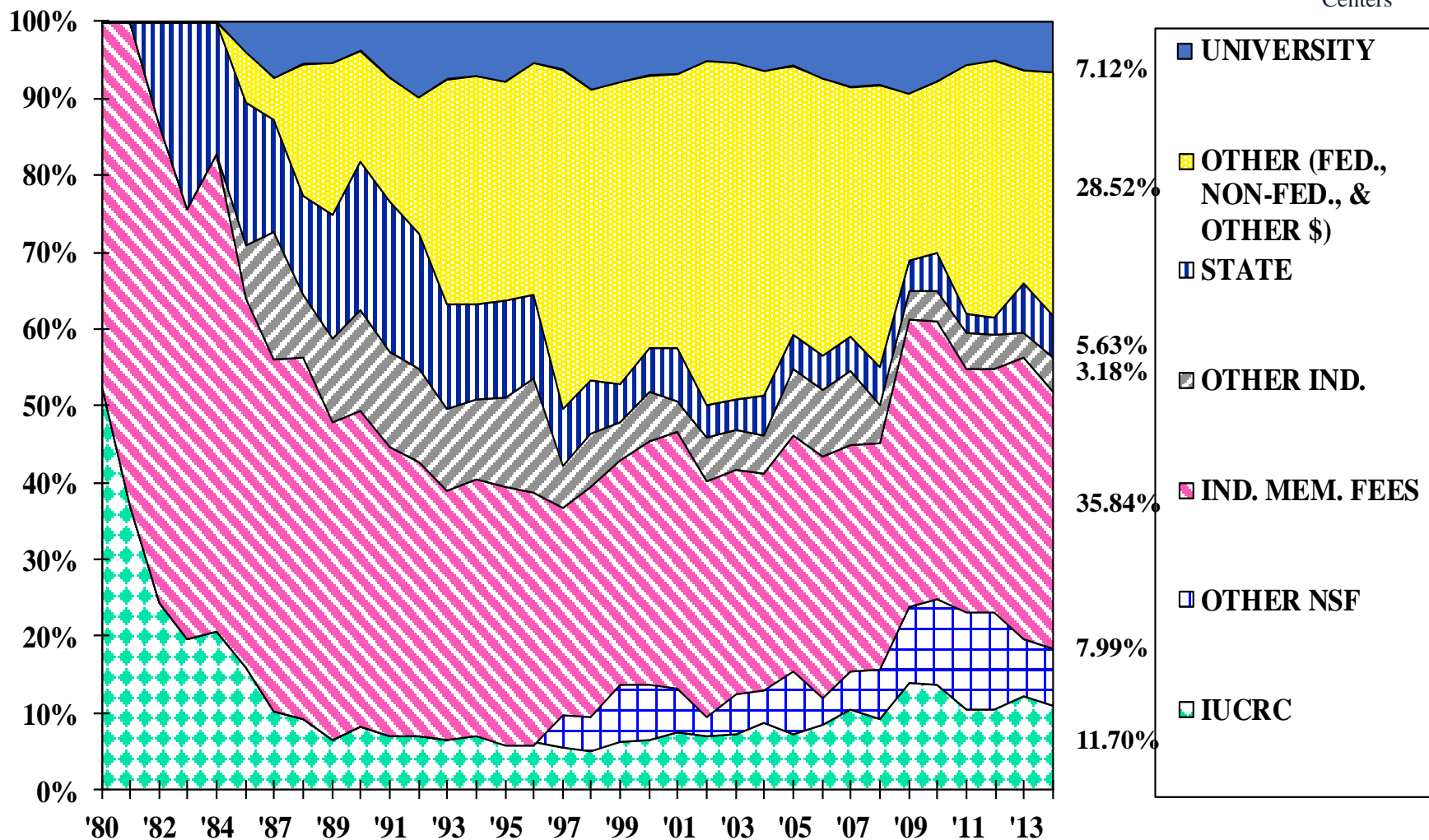
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Total Funding by Source in Percentages



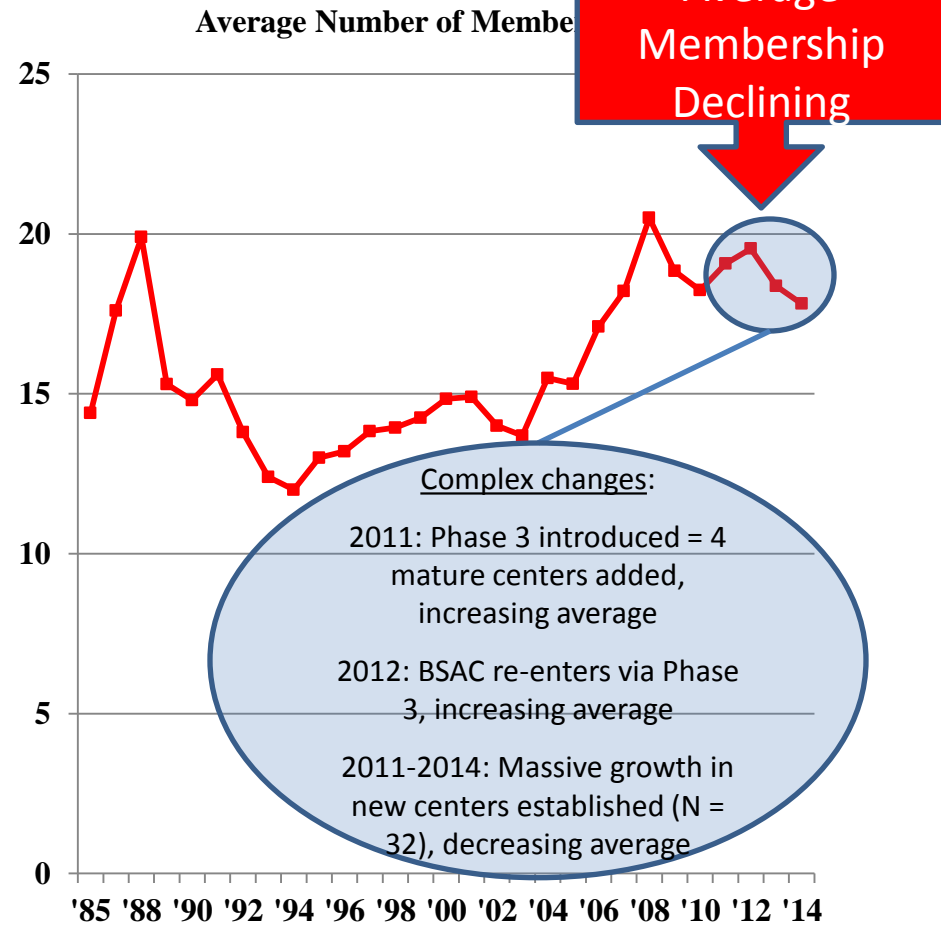
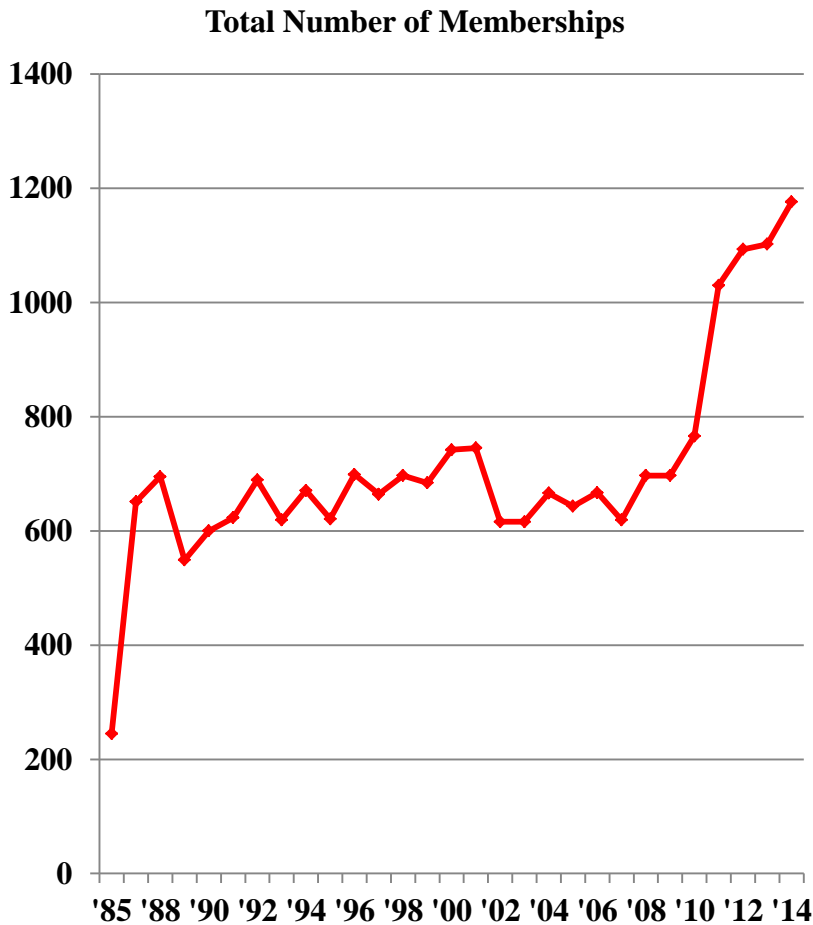
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Industrial Memberships



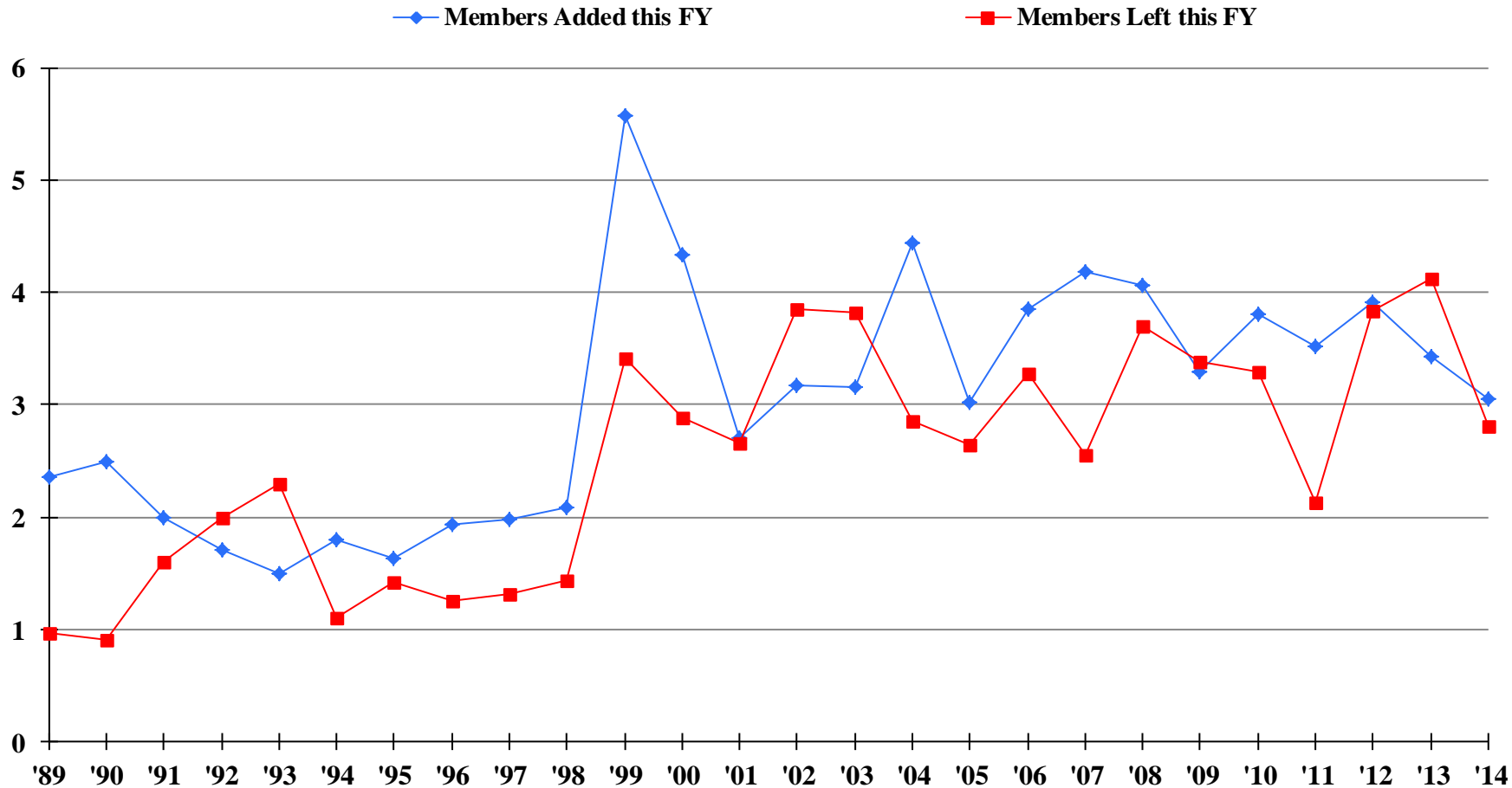
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Average Membership Turn Over



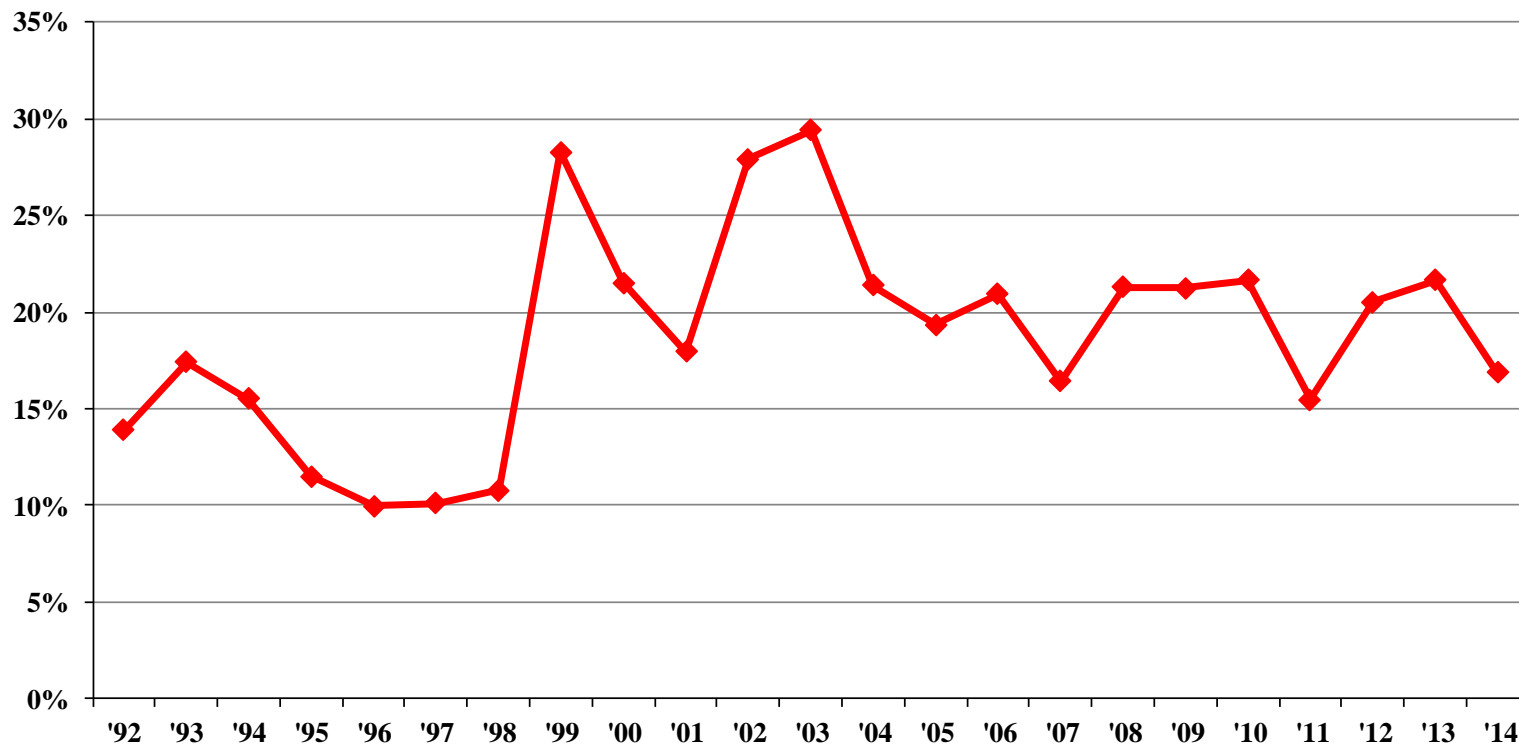
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*Newly funded Centers' members are not counted as Members Added
FY 2013-2014 NSF-I/UCRC Center Structure Database



Member Turnover Rate



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

National Context for Industry Membership: Theory and Reality



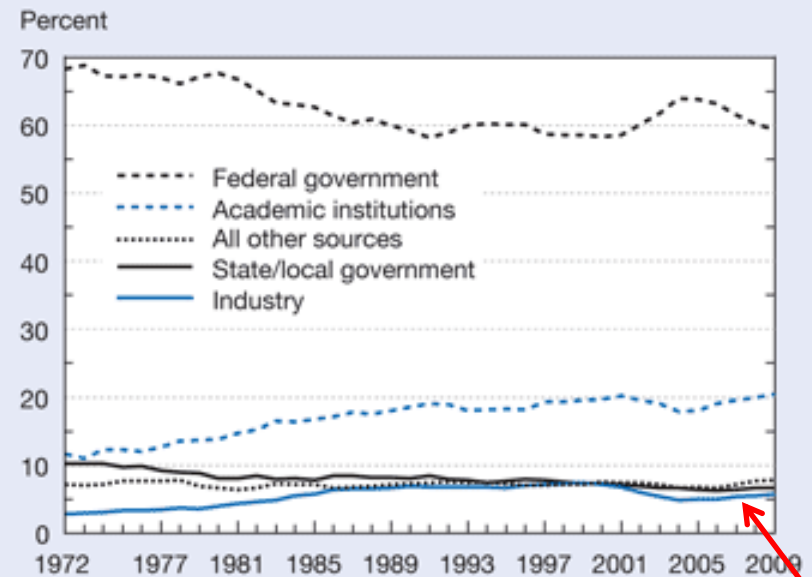
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Open Innovation

- 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



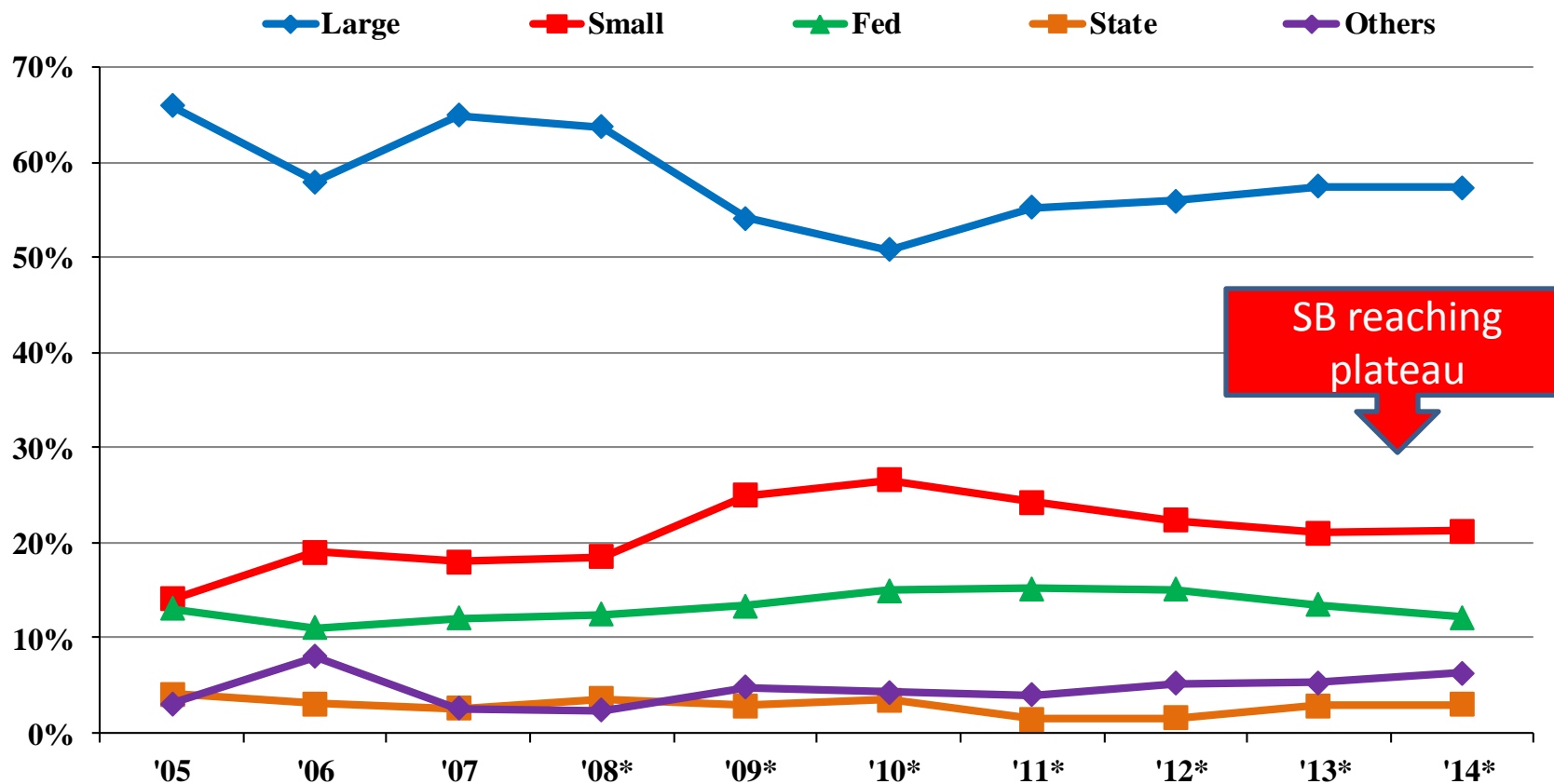
NOTE: Science and engineering R&D; non-S&E R&D not included.

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



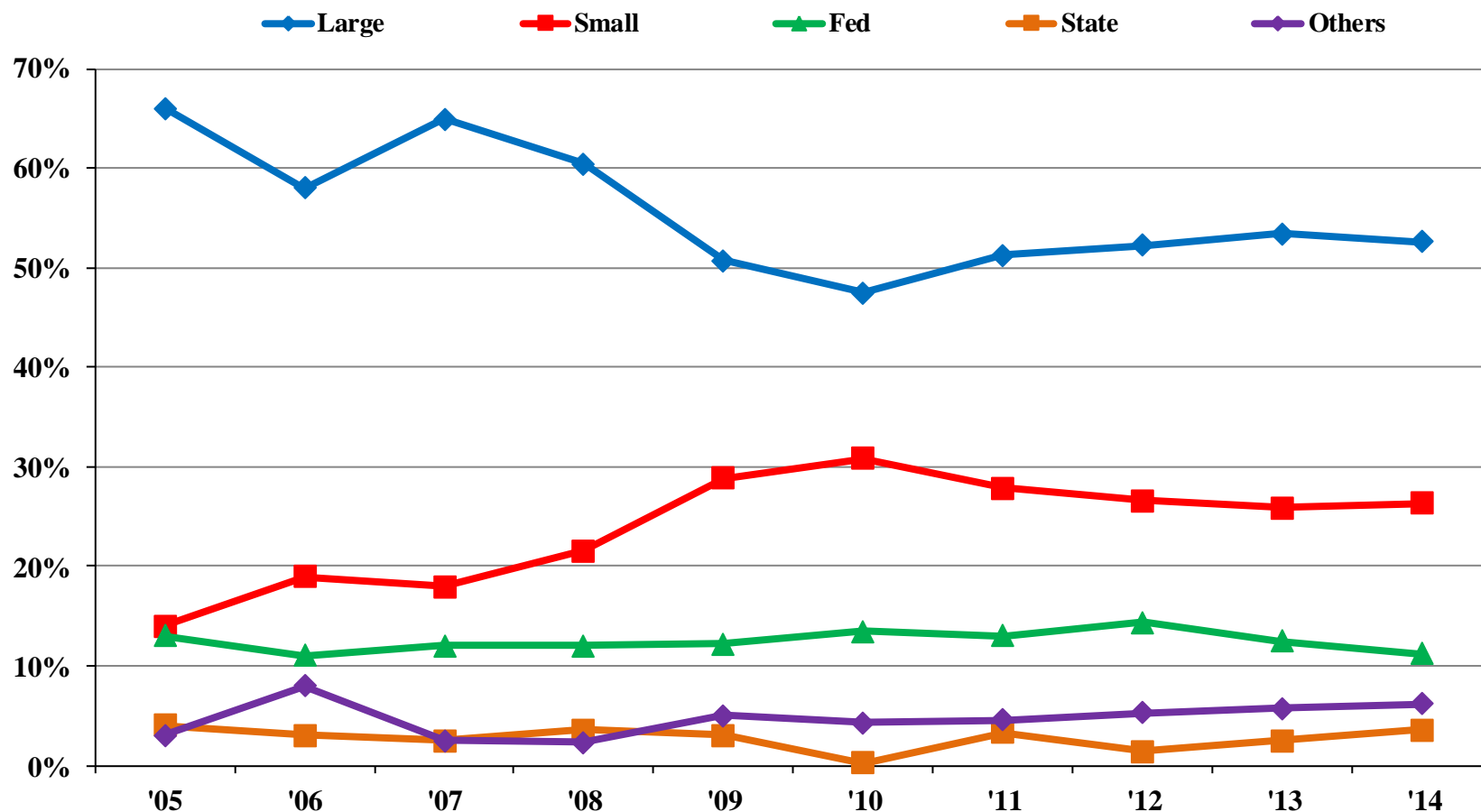
Member Composition 2005-2014



*Years Advanced Forestry excluded as a small business outlier: '08 Small = 36, '09 Small = 49, '10 Small = 57, '11 Small = 66, '12 = 71, '13 = 77, '14 = 86.
^ Categories comprising Others include: non-profit, non-US gov't, and other org.



Member Composition 2005-2014



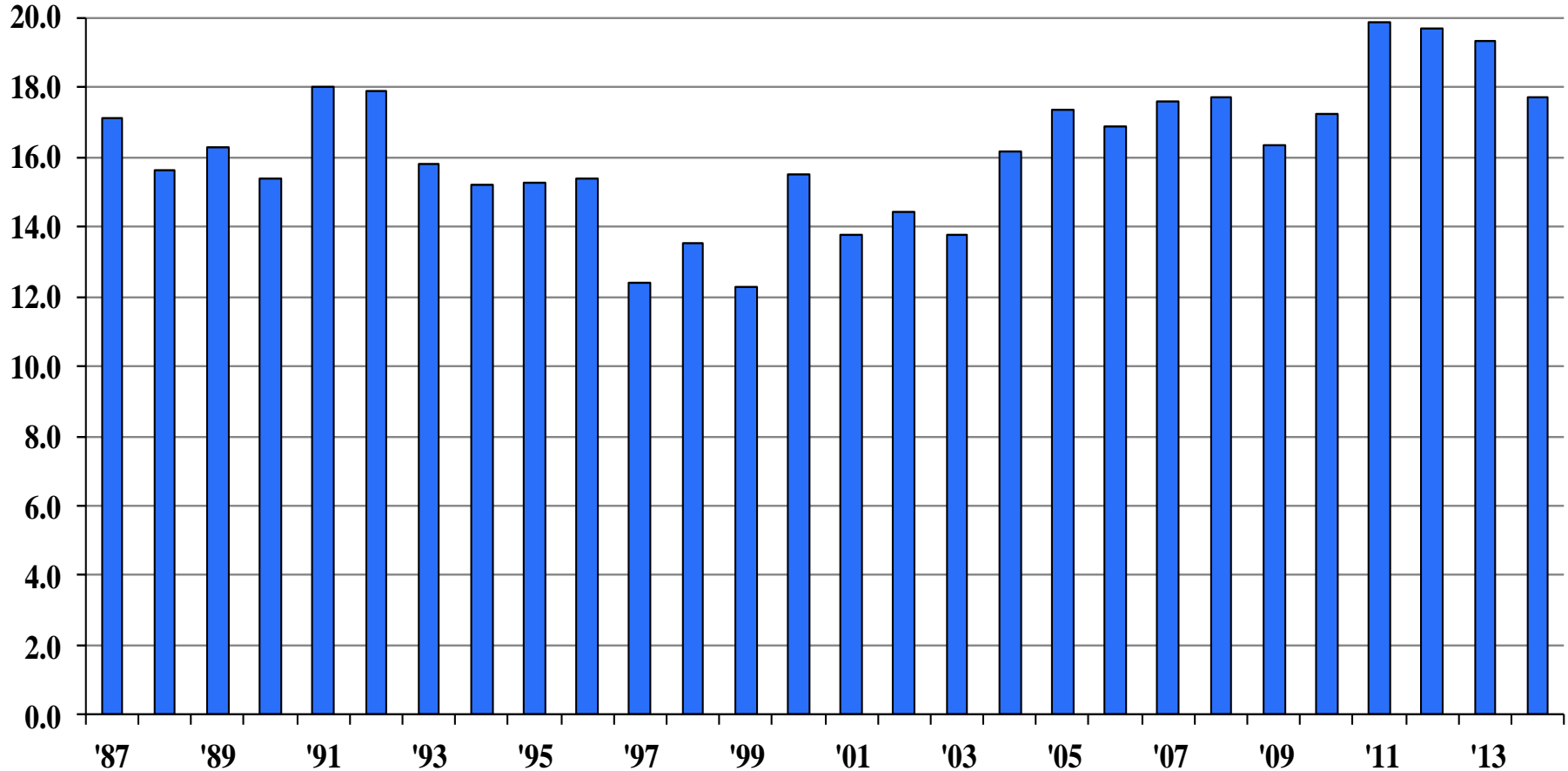
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Average Number of Researchers per Center



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FACULTY & POST DOC RESEARCHERS

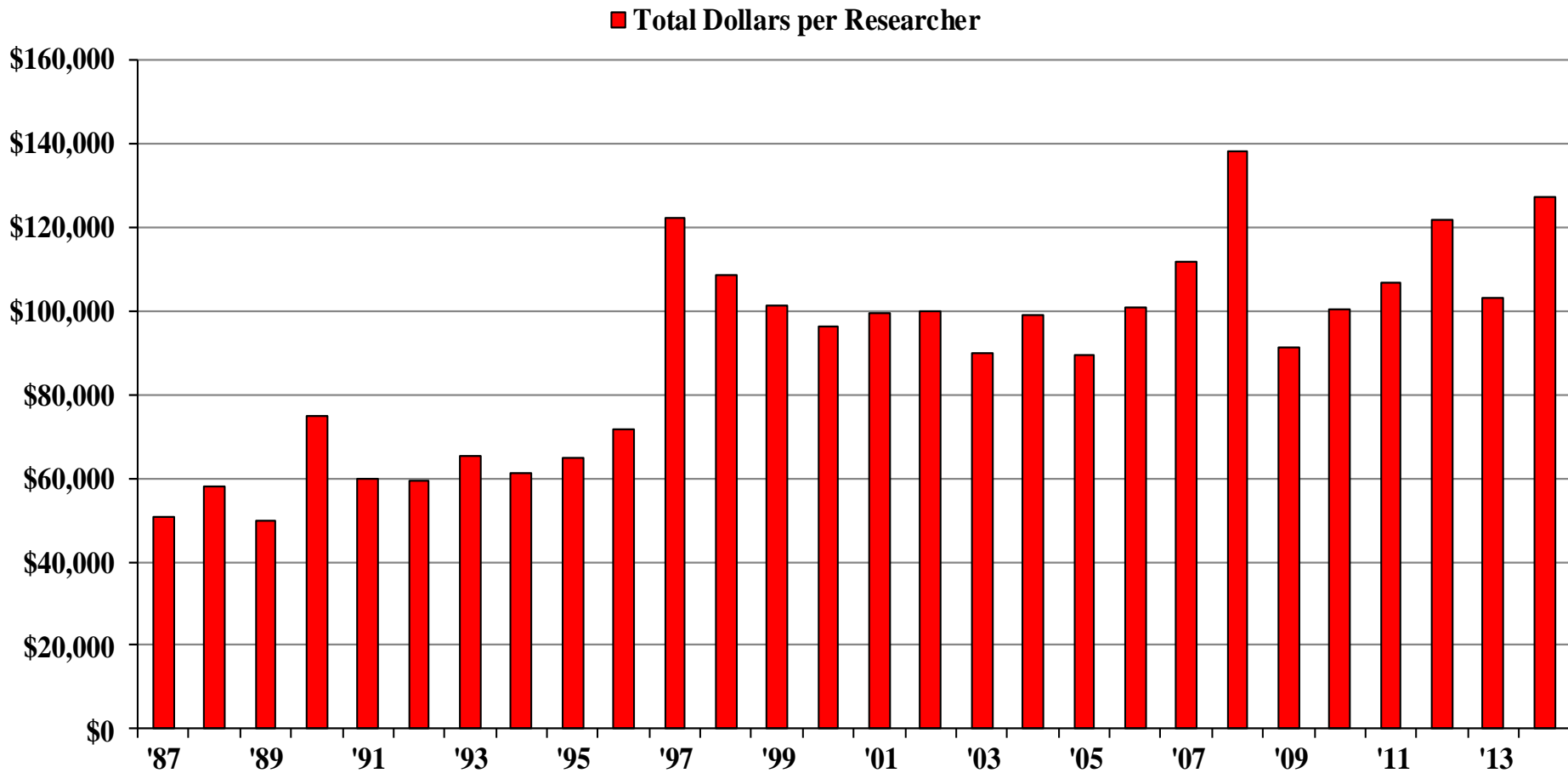


Note: As of 2003, NSF changed the label of "non-faculty" researchers to "post doc" researchers

Funding per Researcher Total



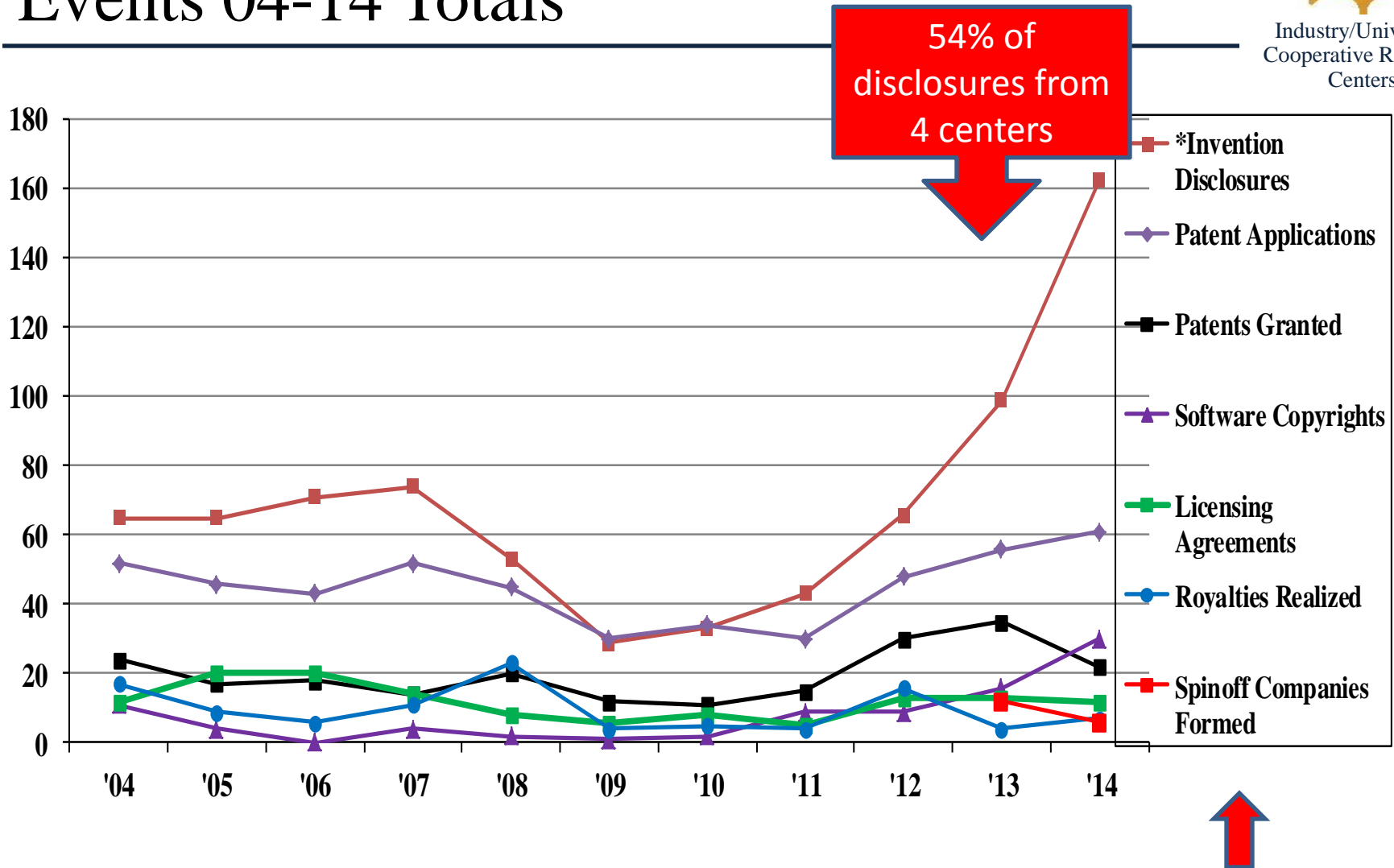
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Intellectual Property & Commercialization Events 04-14 Totals



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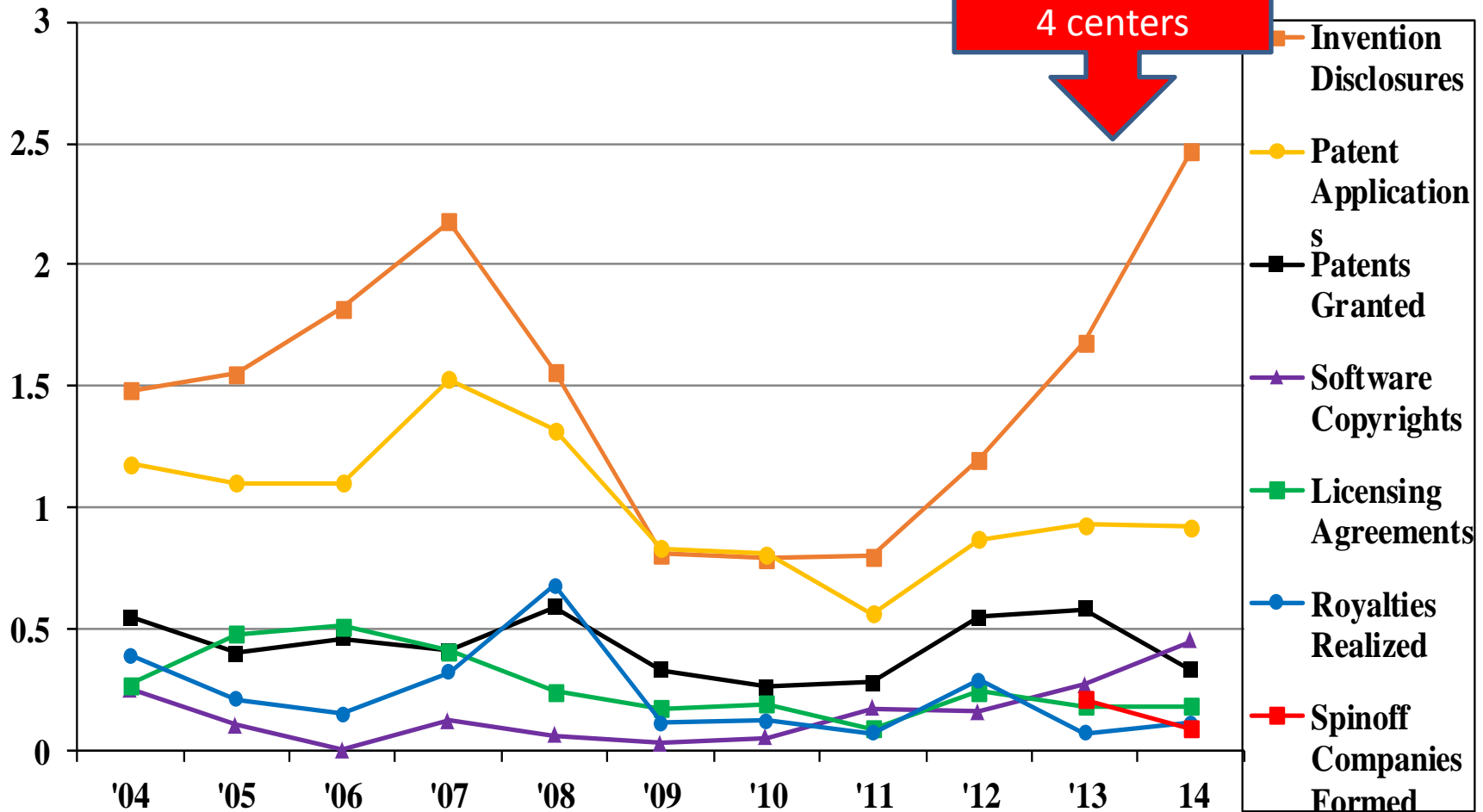


*2014 Invention Disclosures outliers: Visual Decision Informatics = 40, Berkeley Sensor & Actuator Center = 20, E-Design = 12, Identification Technology Research = 17.

Average Number of Intellectual Property & Commercialization Events 04-14



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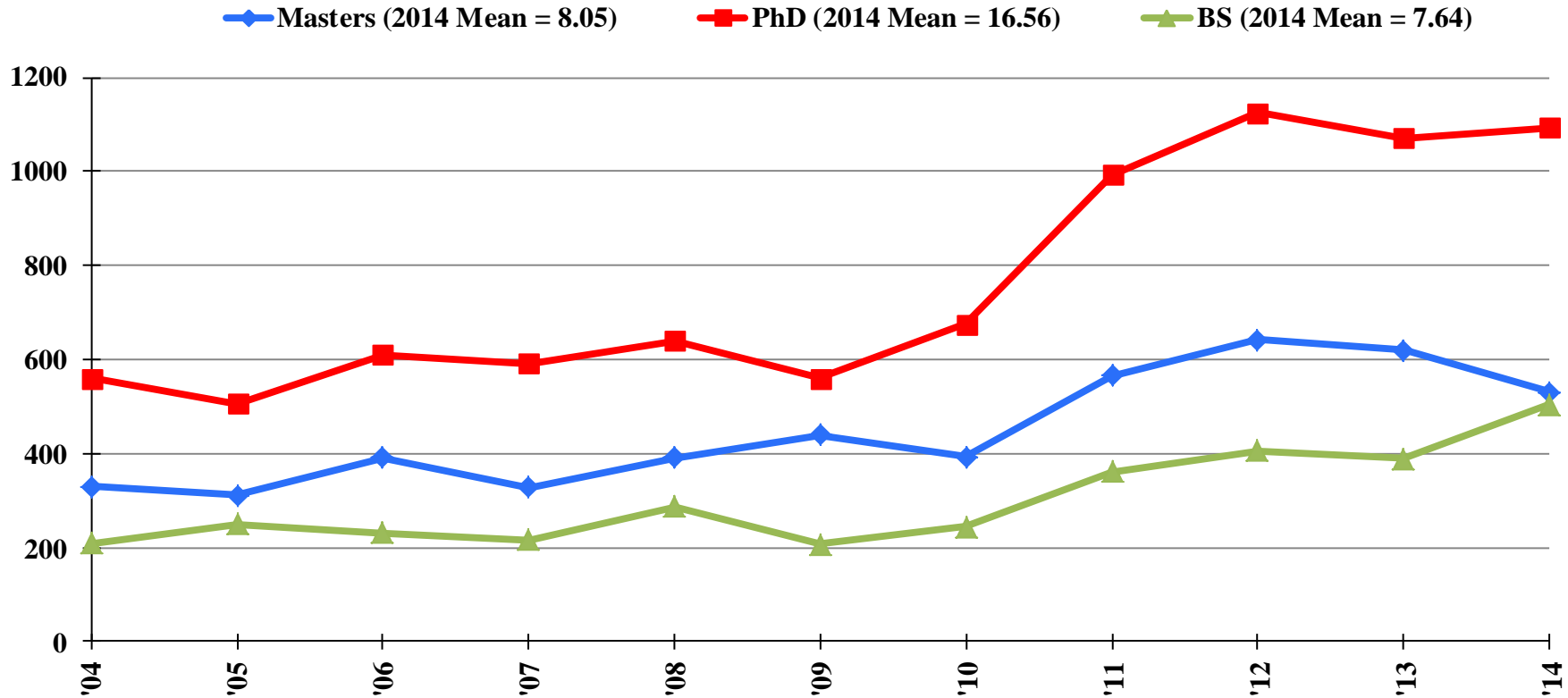


*2014 Invention Disclosures outliers: Visual Decision Informatics = 40, Berkeley Sensor & Actuator Center = 20, E-Design = 12, Identification Technology Research = 17.

Total Students Trained



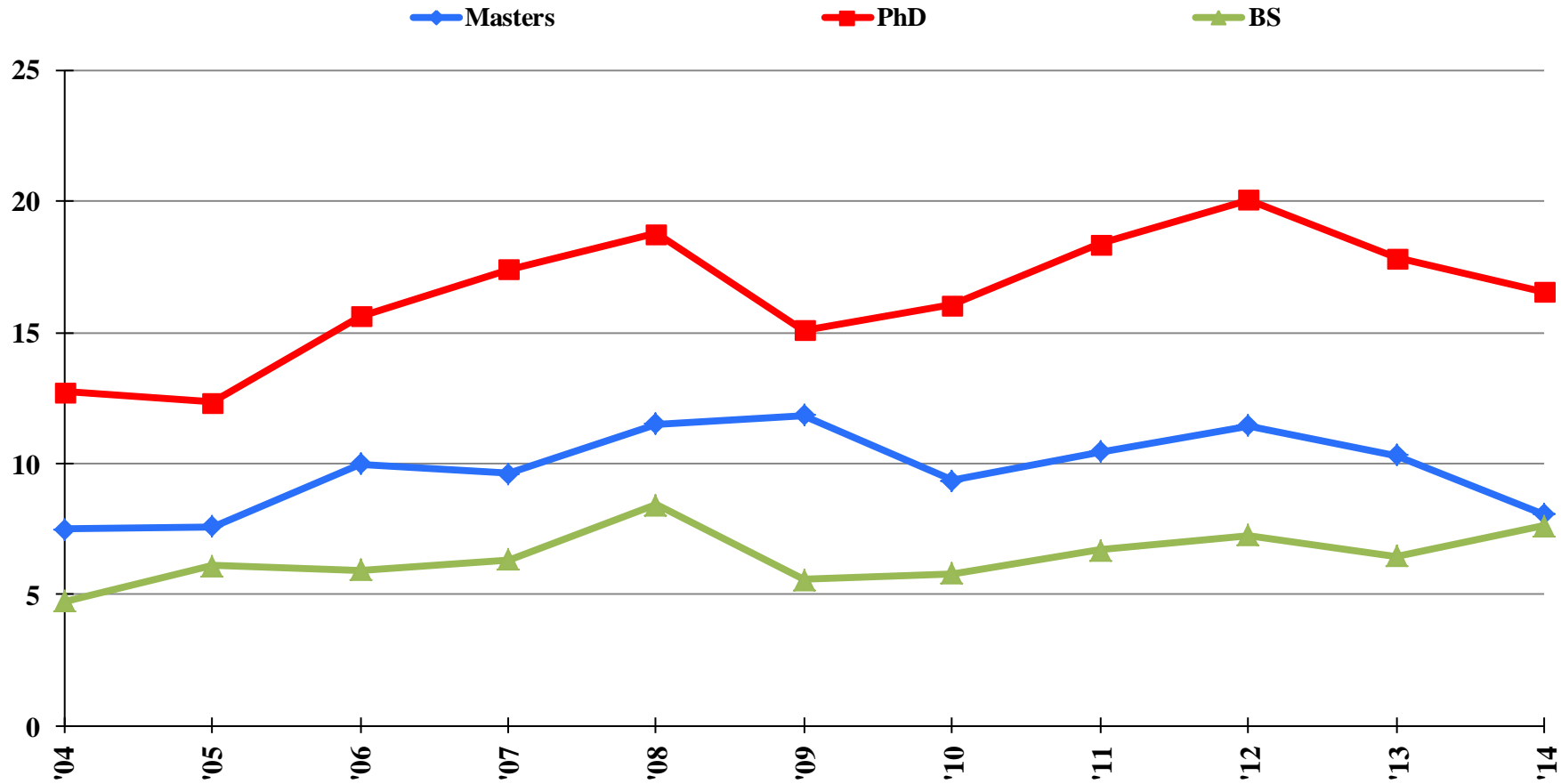
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Average Students Trained



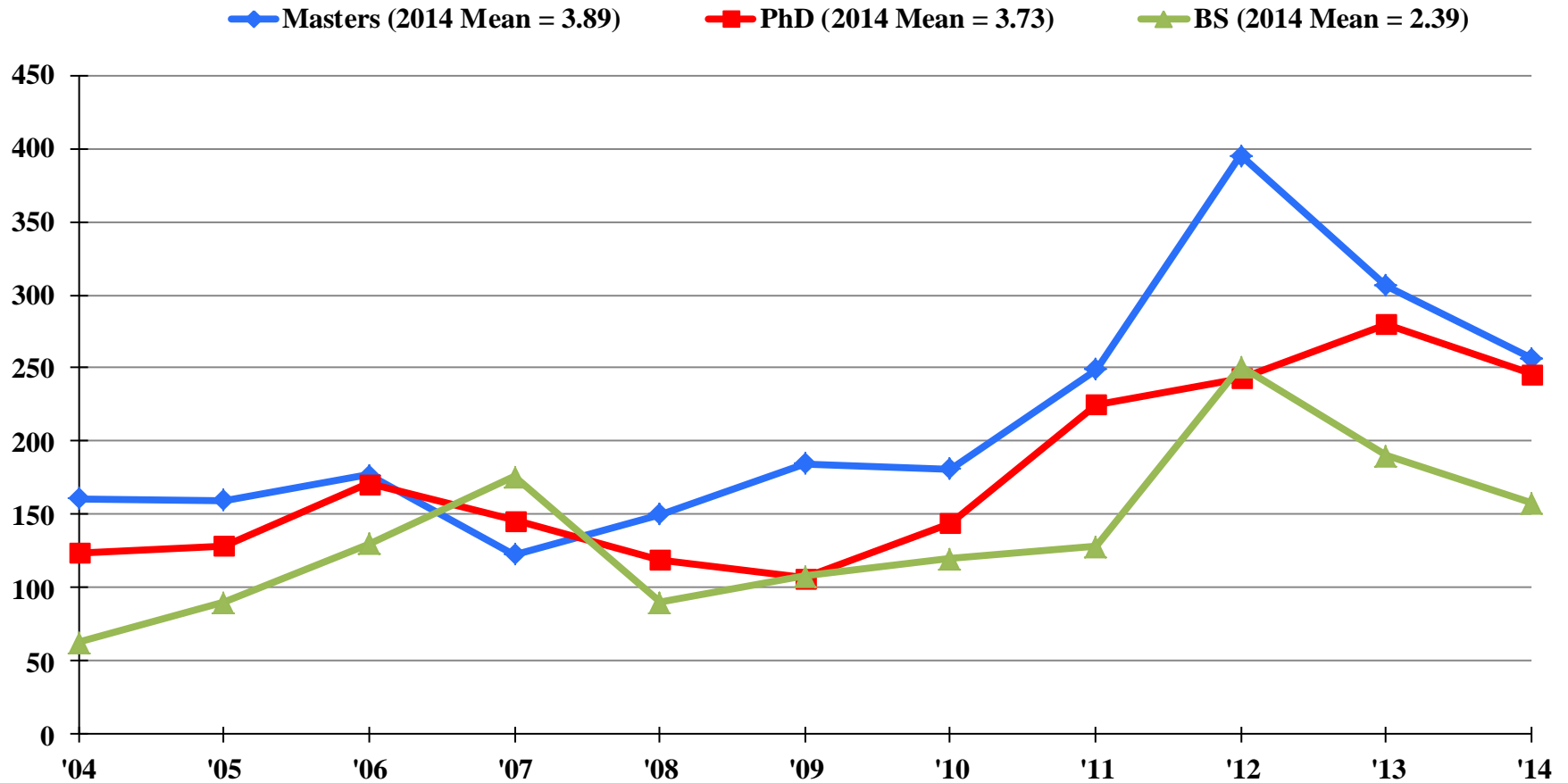
Industry/University
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Total Students Graduated



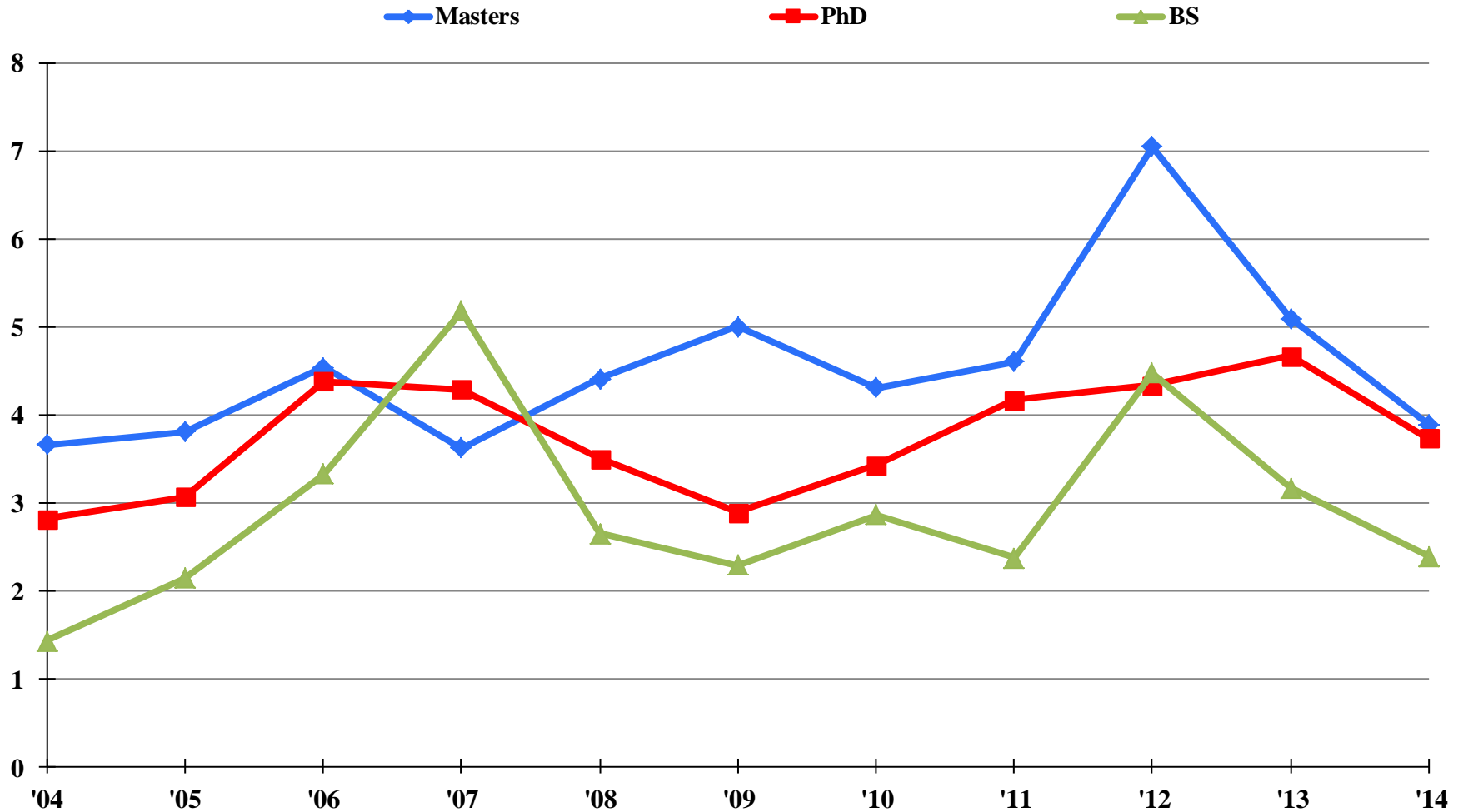
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Centers



Average Students Graduated



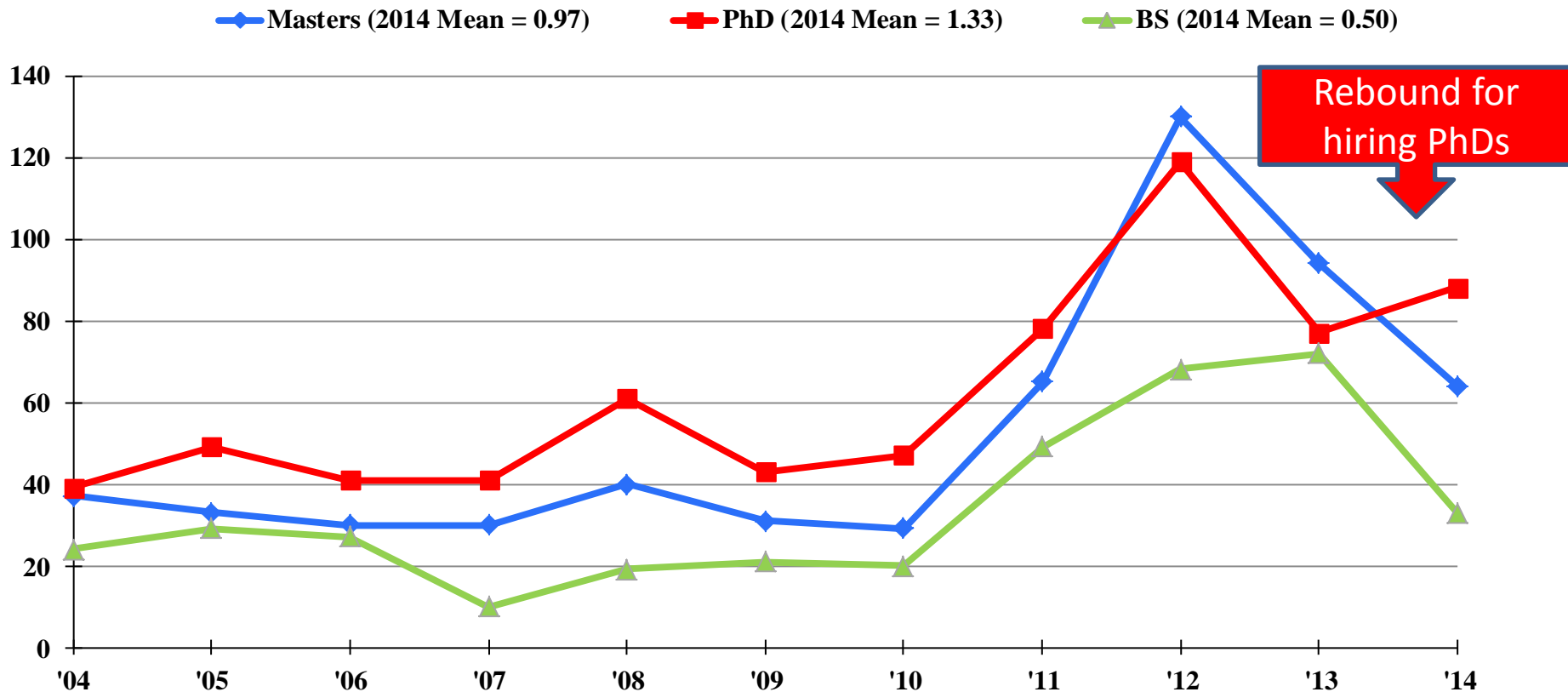
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Centers



Total Students Hired by Members



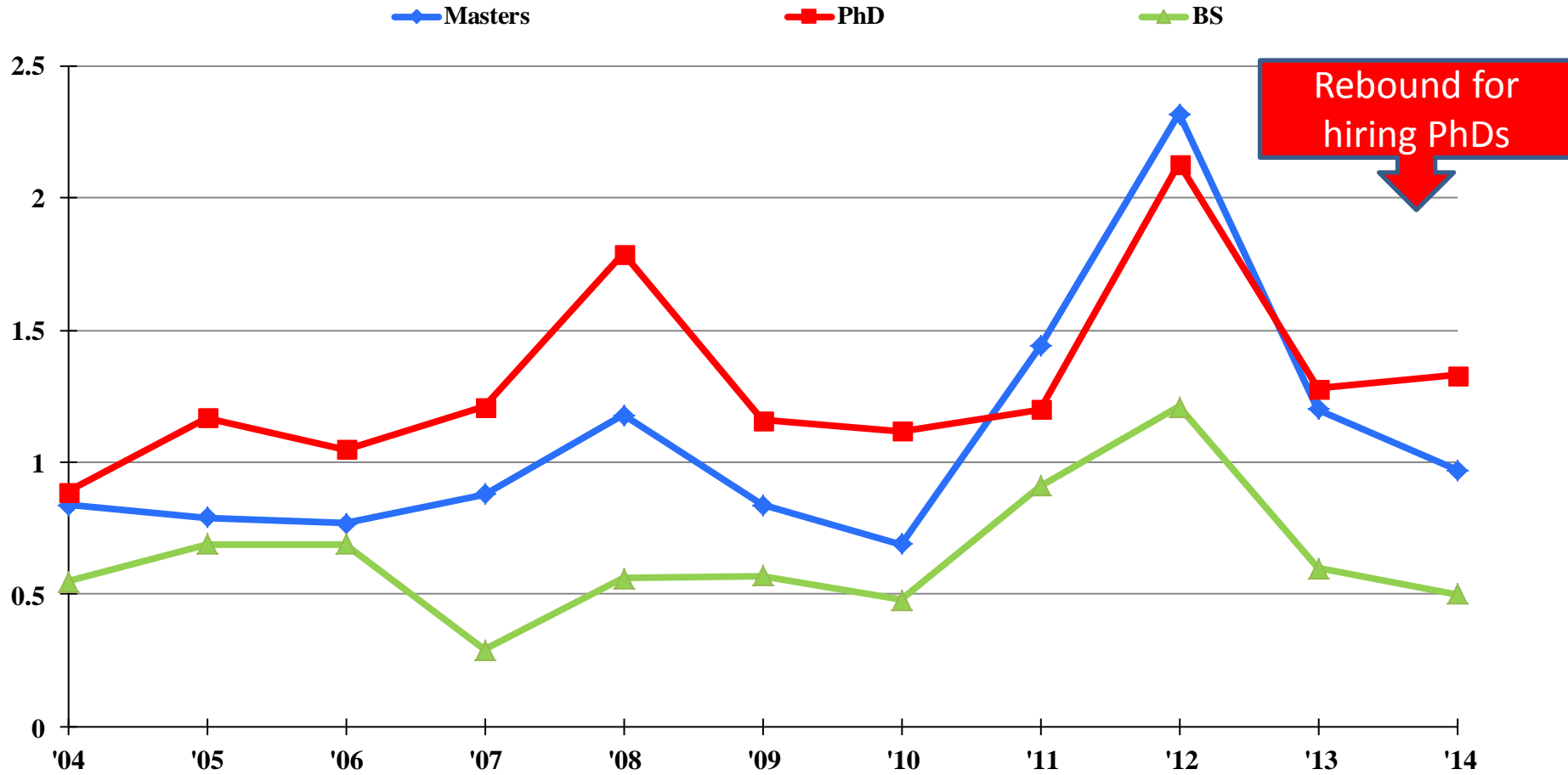
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Cooperative Research
Centers



Average Students Hired by Members



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Centers





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Cooperative Research
Centers

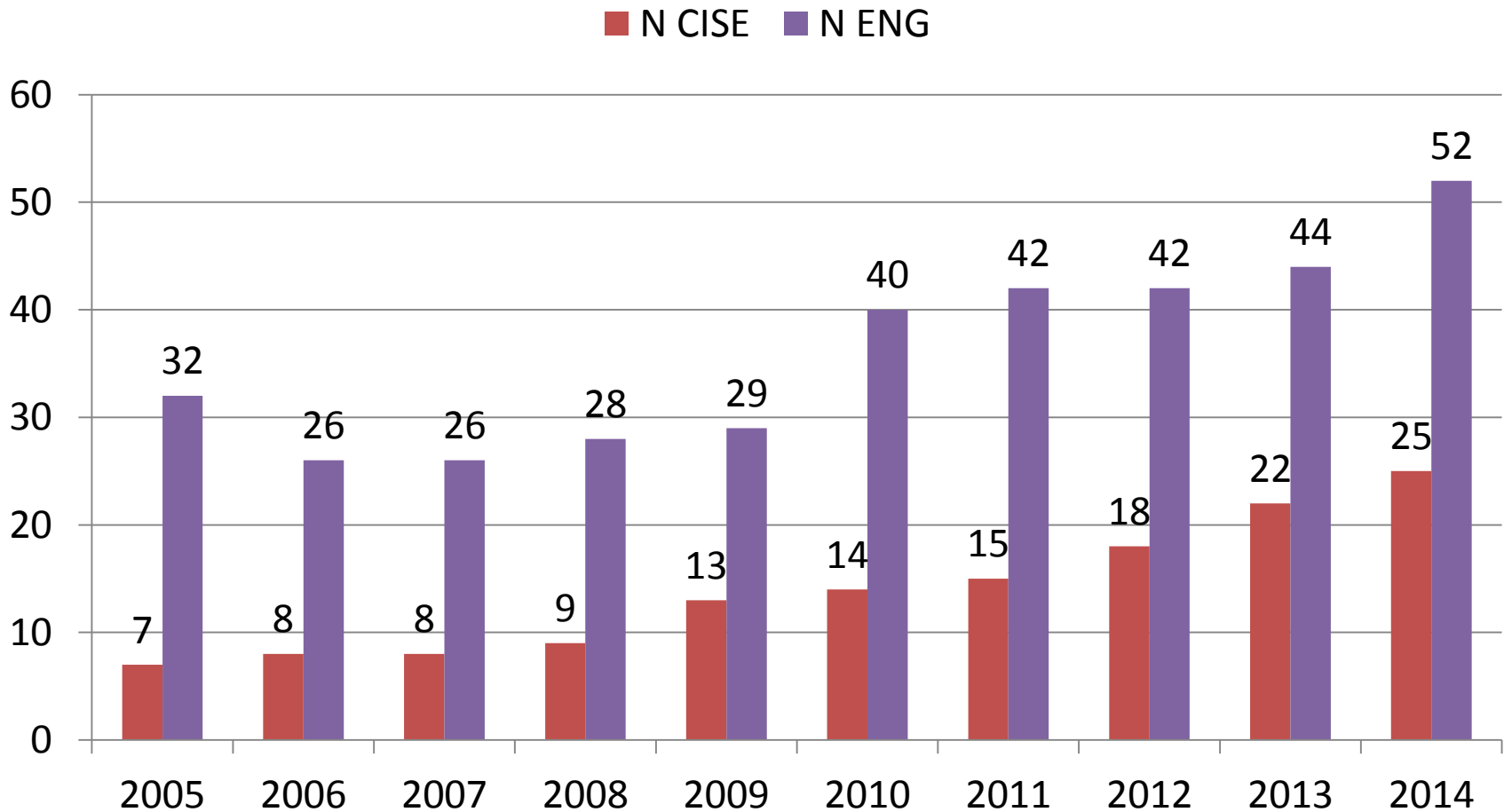
CISE & ENG Partnership

Some Comparisons and Recent Trends

Growth in # of CISE & ENG Centers over time*



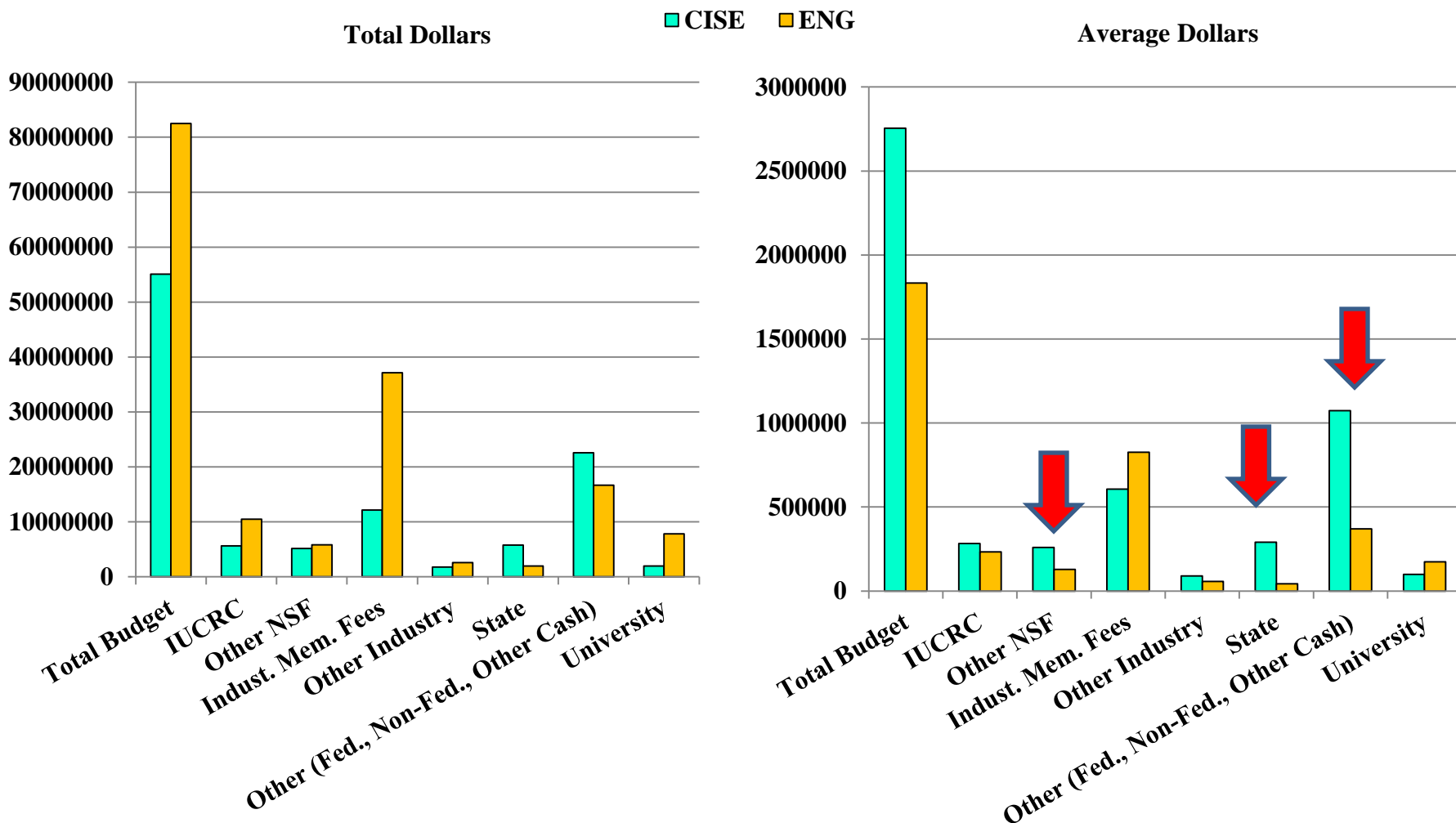
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*Data Current for NSF FY2014



2014 CISE & ENG: Funding by Source

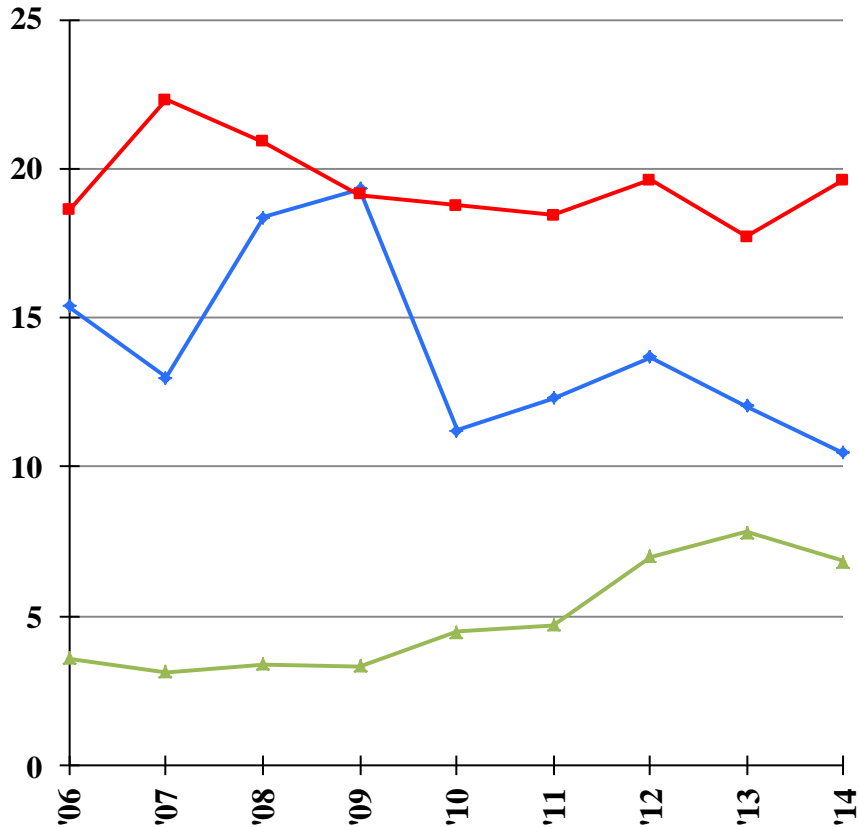


CISE & ENG: Average Students Trained

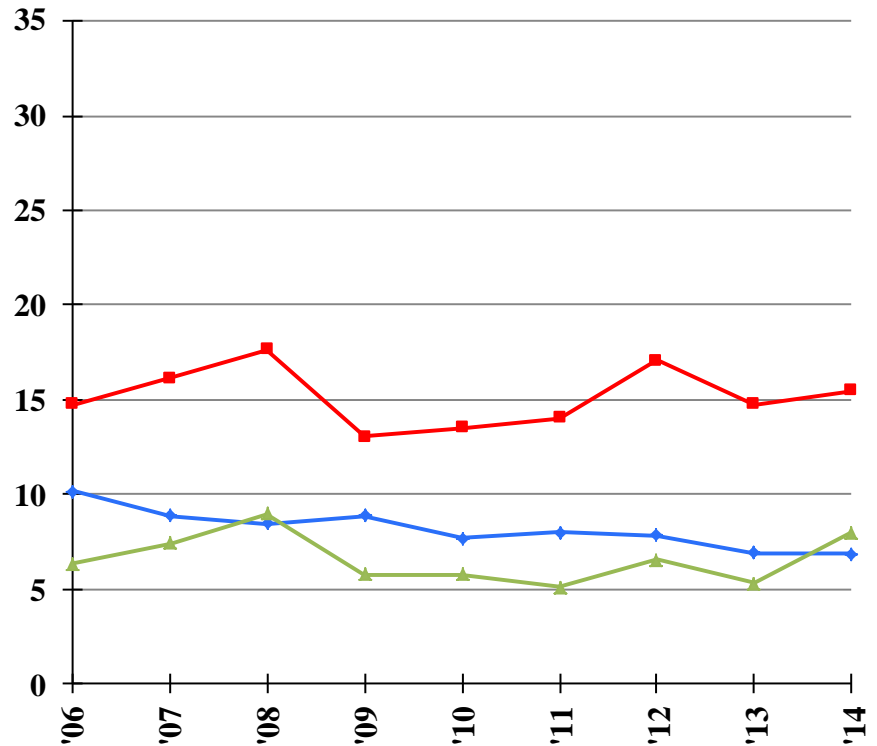


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CISE



ENG



— Masters — PhD — BS

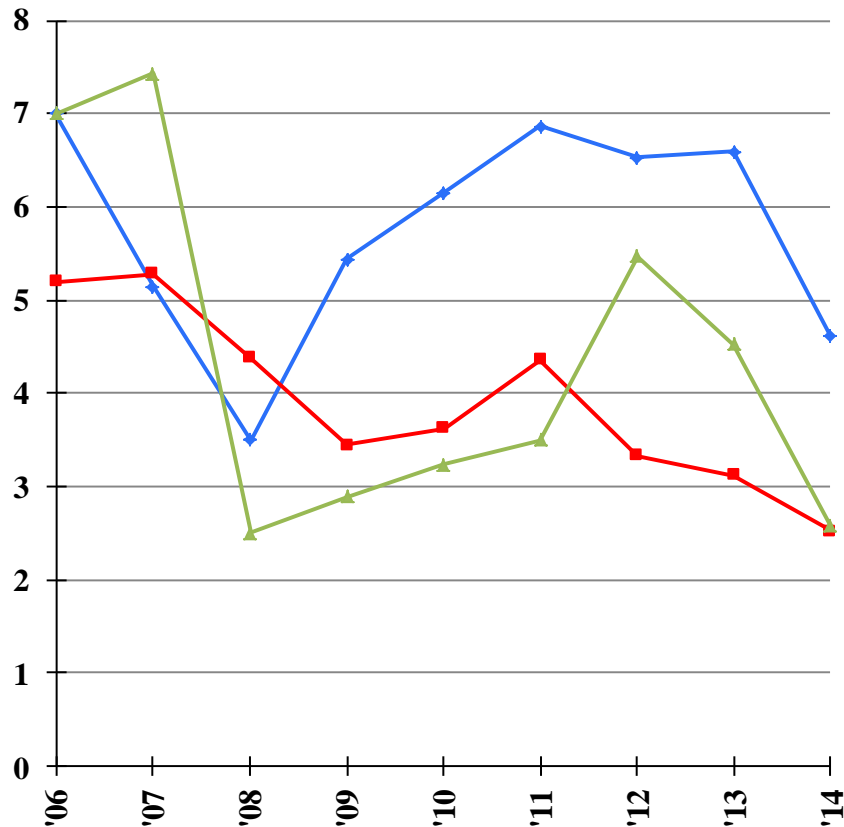
* CISE averages exclude one outlier Center
FY 2013-2014 NSF-I/UCRC Center Structure Database

CISE & ENG: Average Students Graduated

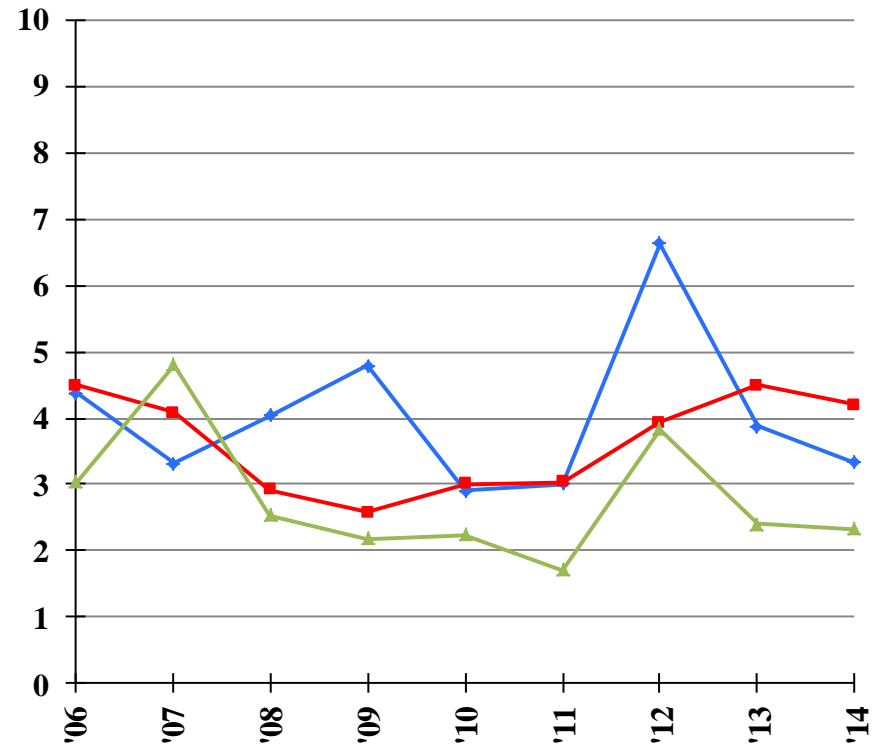


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Centers

CISE



ENG



◆ Masters ■ PhD ▲ BS

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FY 2013-2014 NSF-I/UCRC Center Structure Database

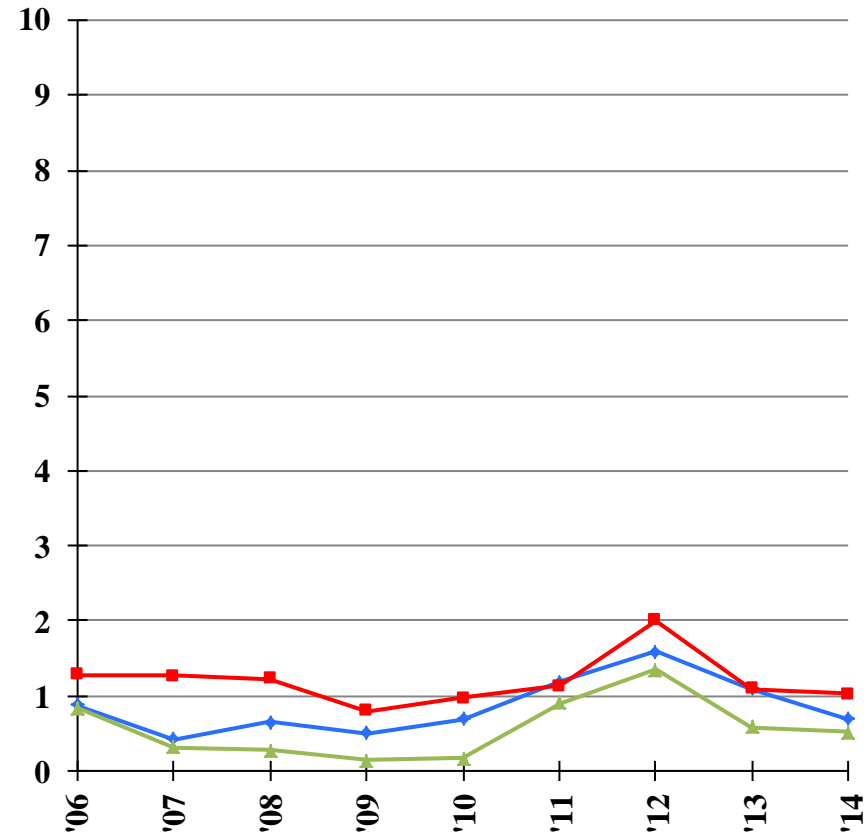
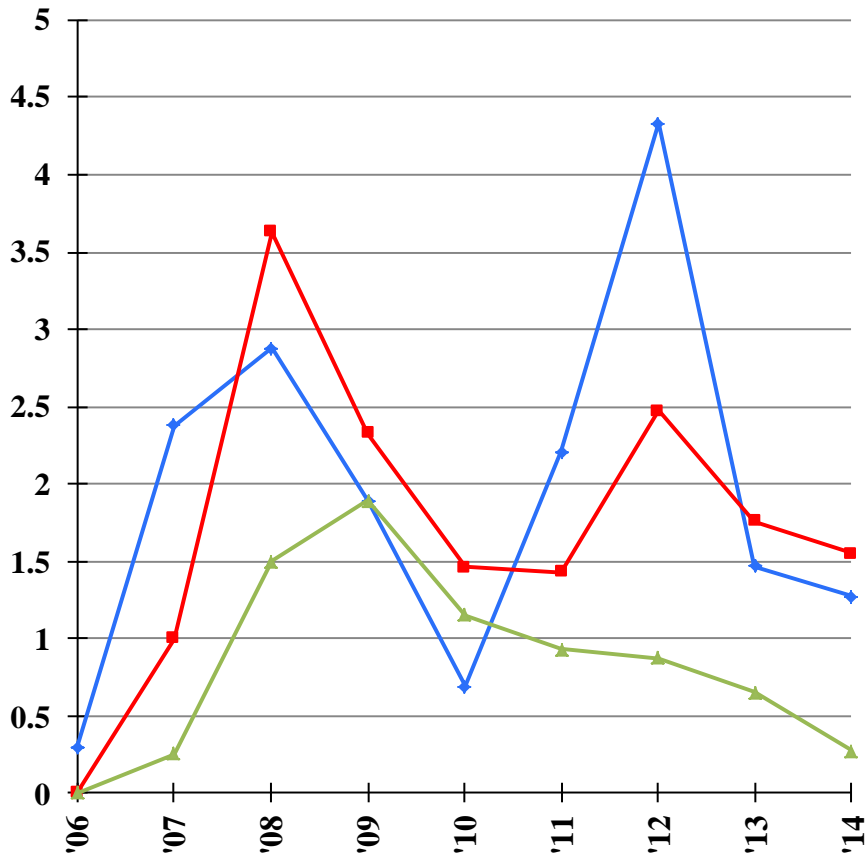
CISE & ENG: Average Students Hired



Industry/University
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Centers

CISE

ENG



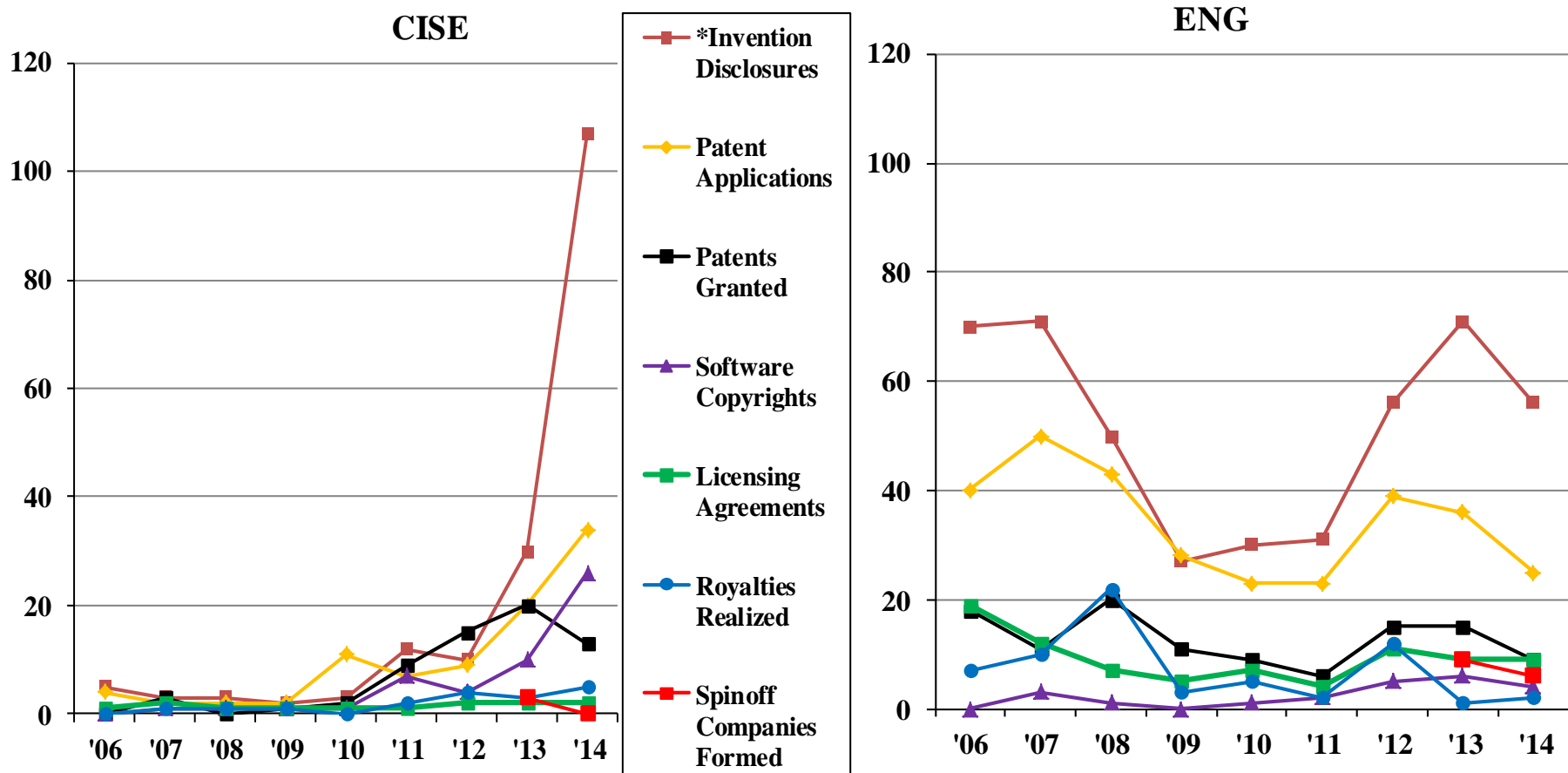
◆ Masters ■ PhD ▲ BS

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FY 2013-2014 NSF-I/UCRC Center Structure Database

CISE & ENG: Intellectual Property & Commercialization Events 06-14 Totals



Industry/University
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Centers



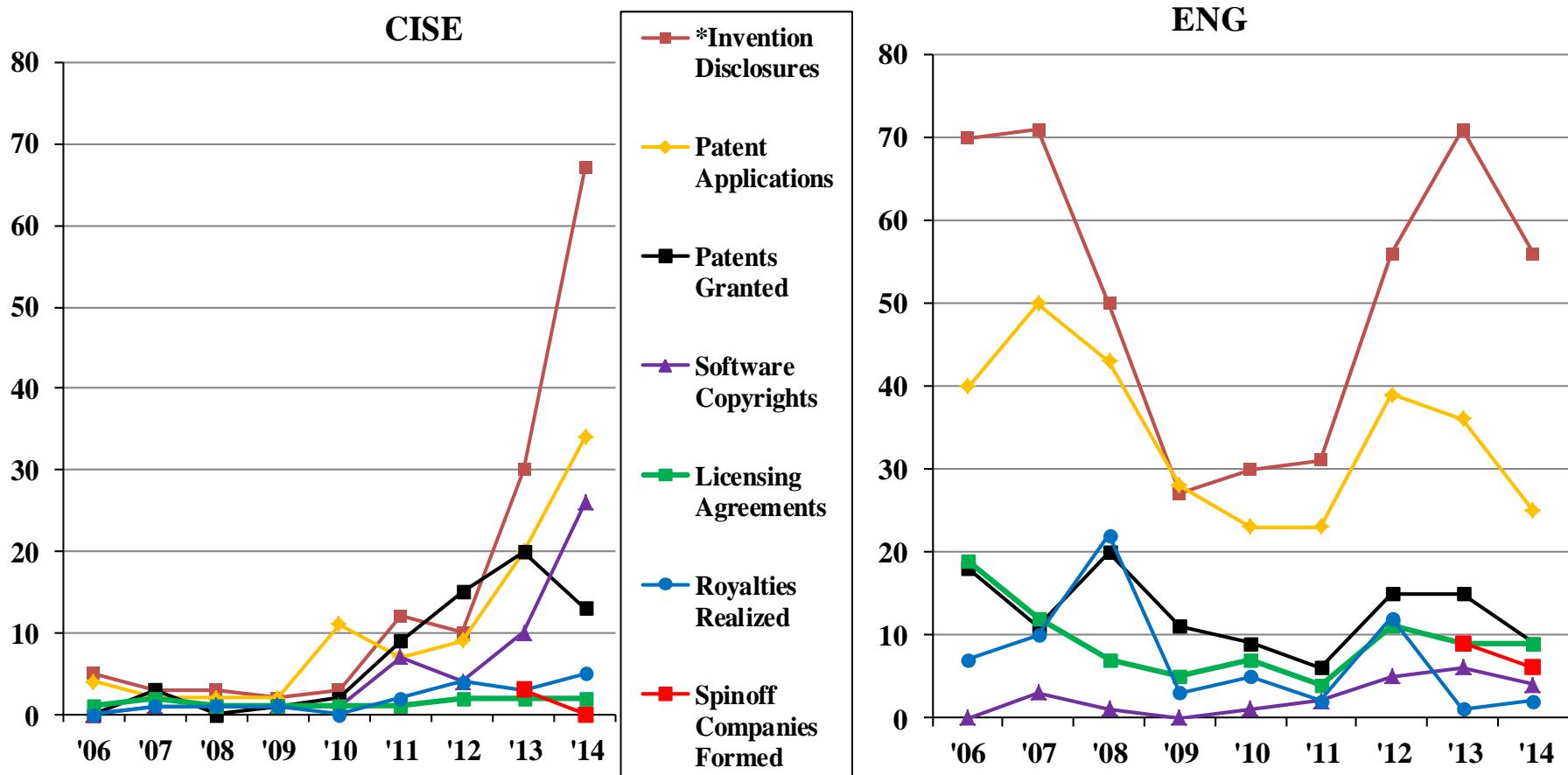
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CISE & ENG: Intellectual Property & Commercialization Events 06-14 Totals (without VDI outlier)



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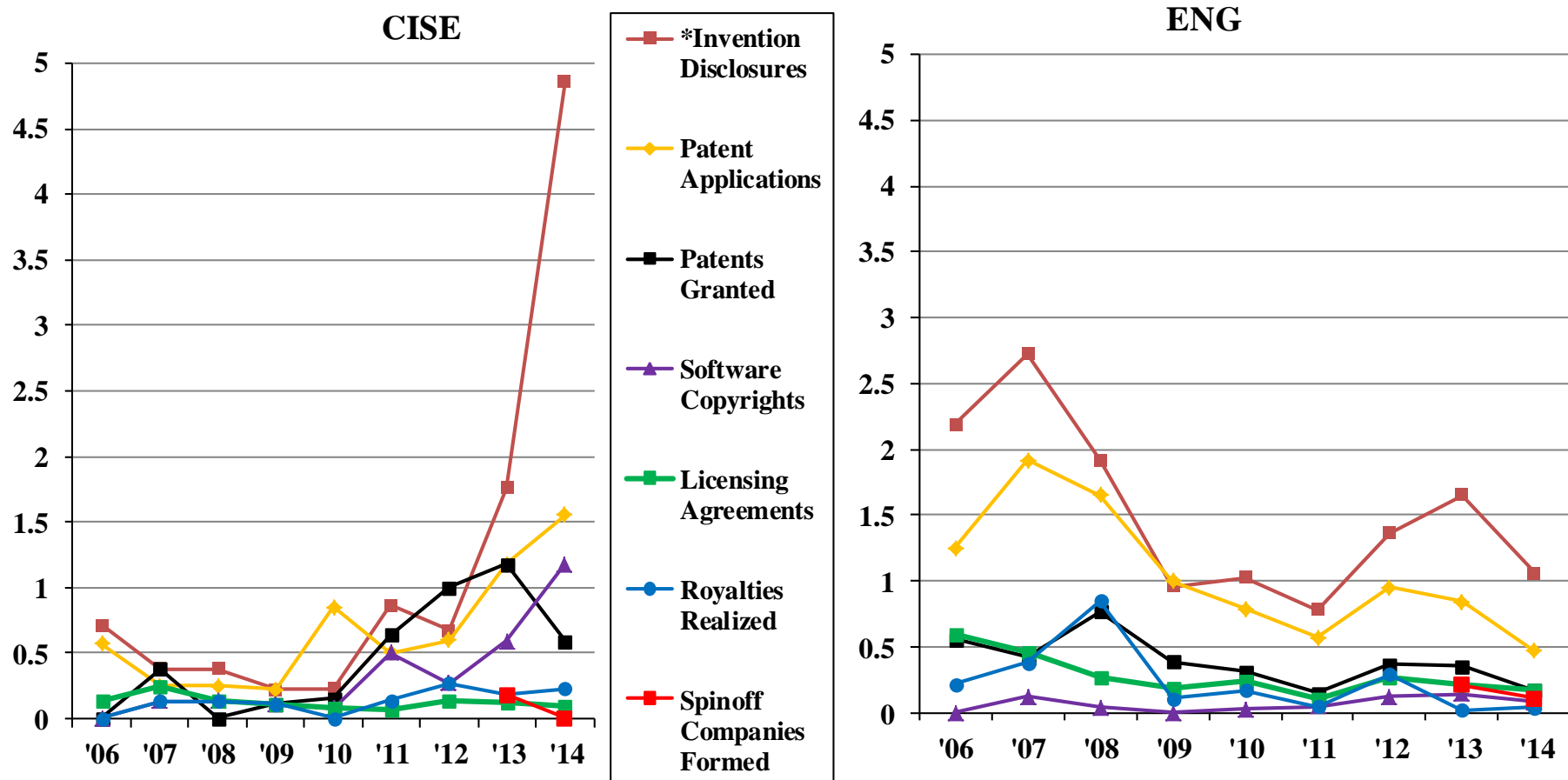
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CISE & ENG: Intellectual Property & Commercialization Events 06-14 Averages



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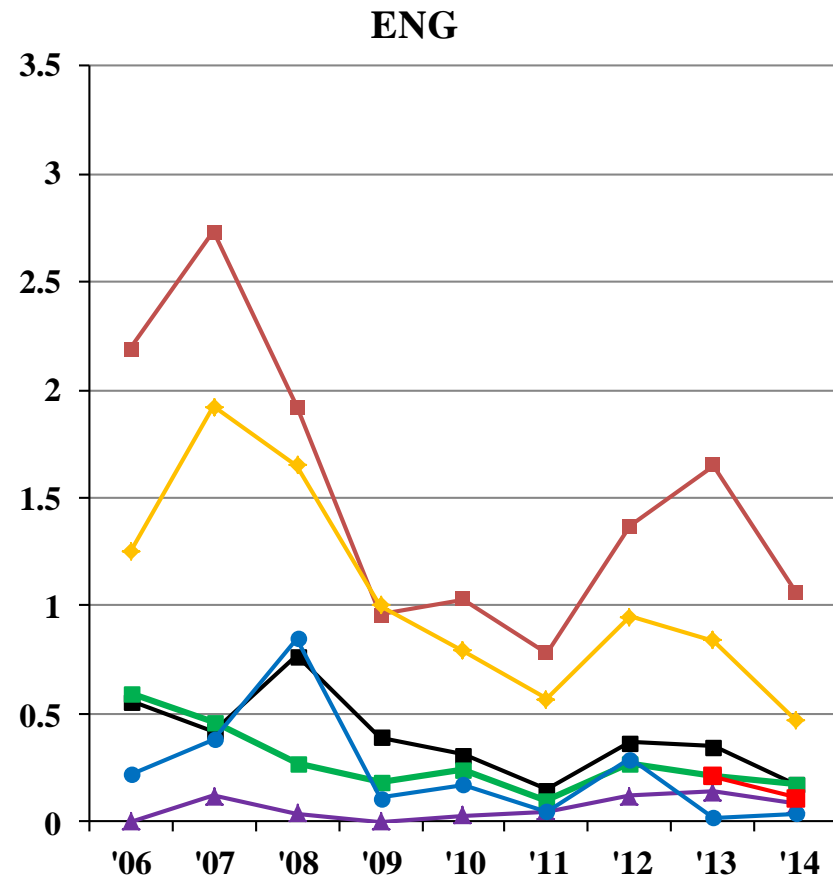
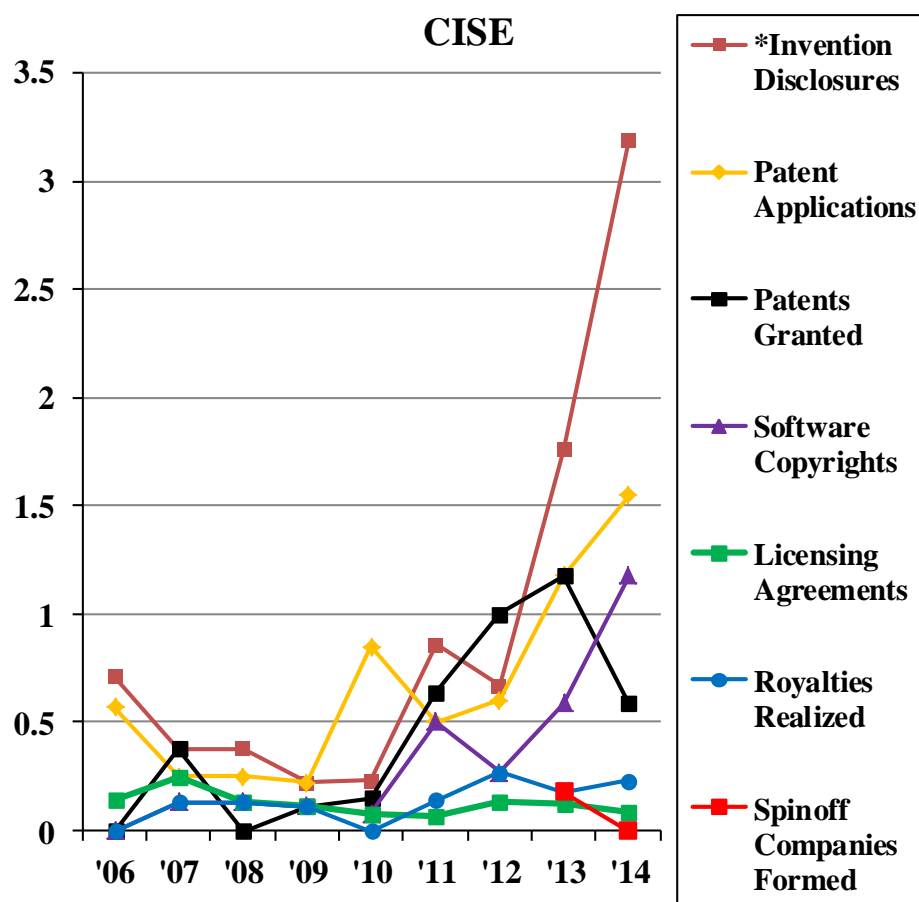
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CISE & ENG: Intellectual Property & Commercialization Events 06-14 Averages (without VDI outlier)



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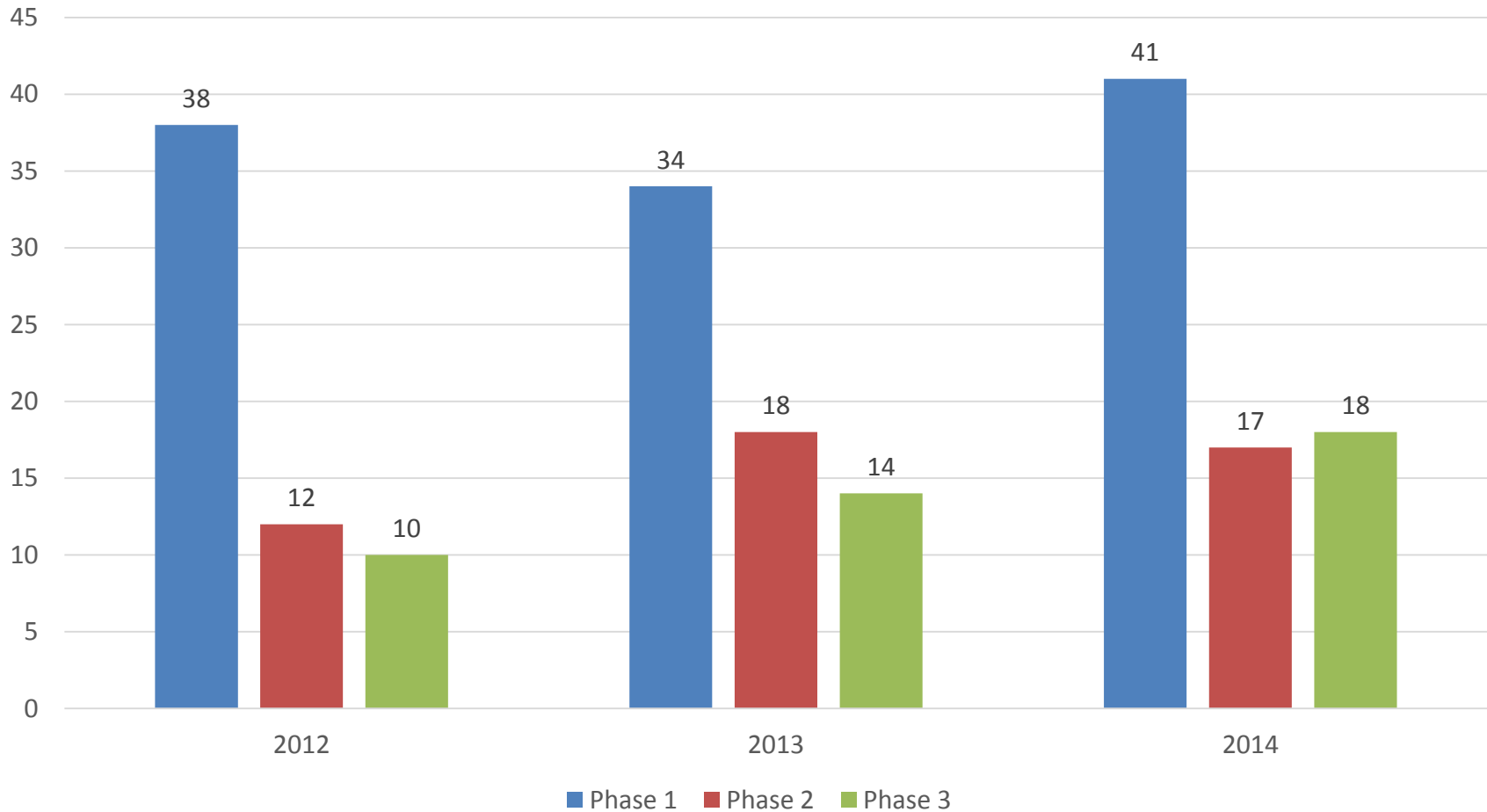
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2014 Phase-based comparison

N of Centers by Phase*



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Centers

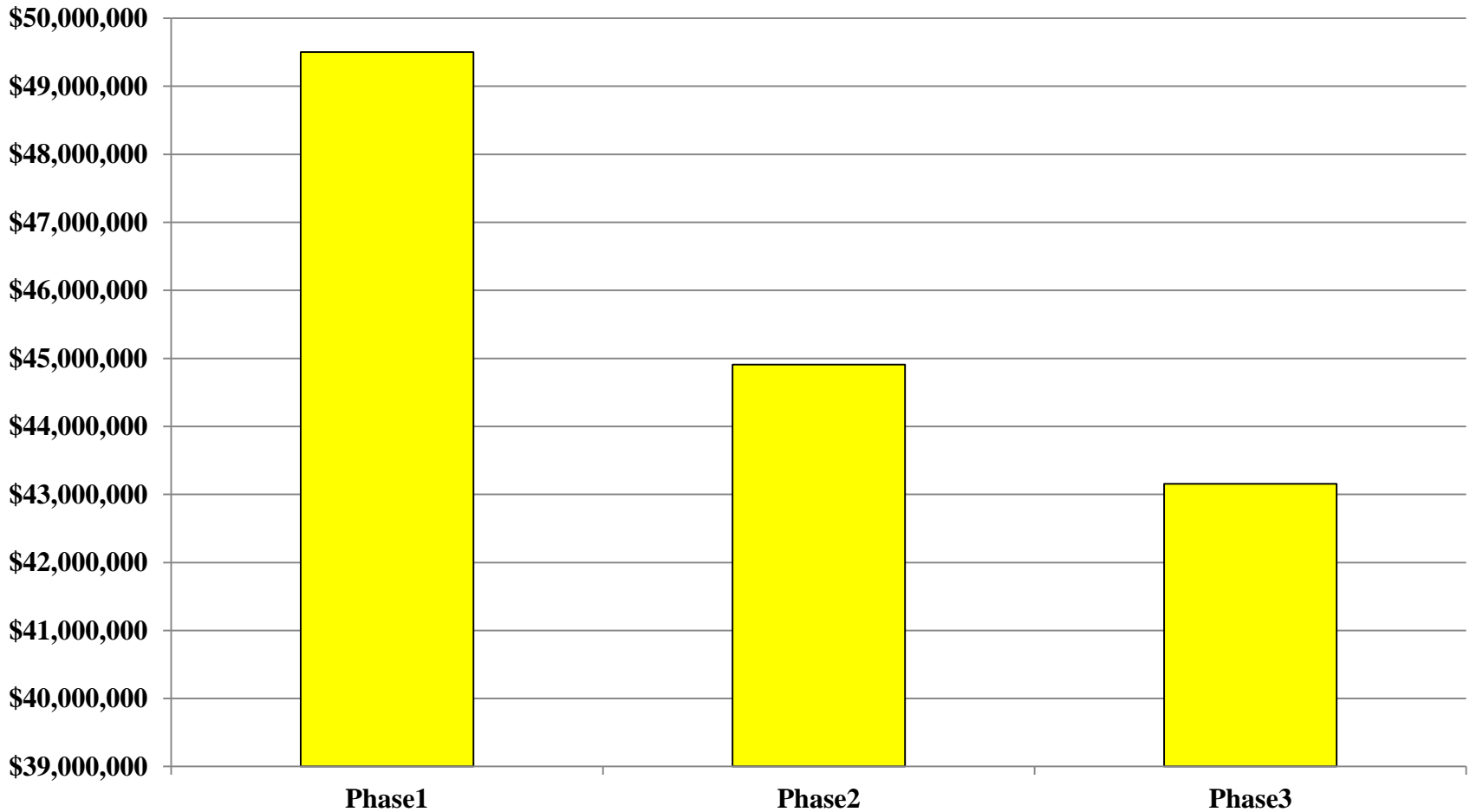


*Data Current for NSF FY2014

Total Program Funding

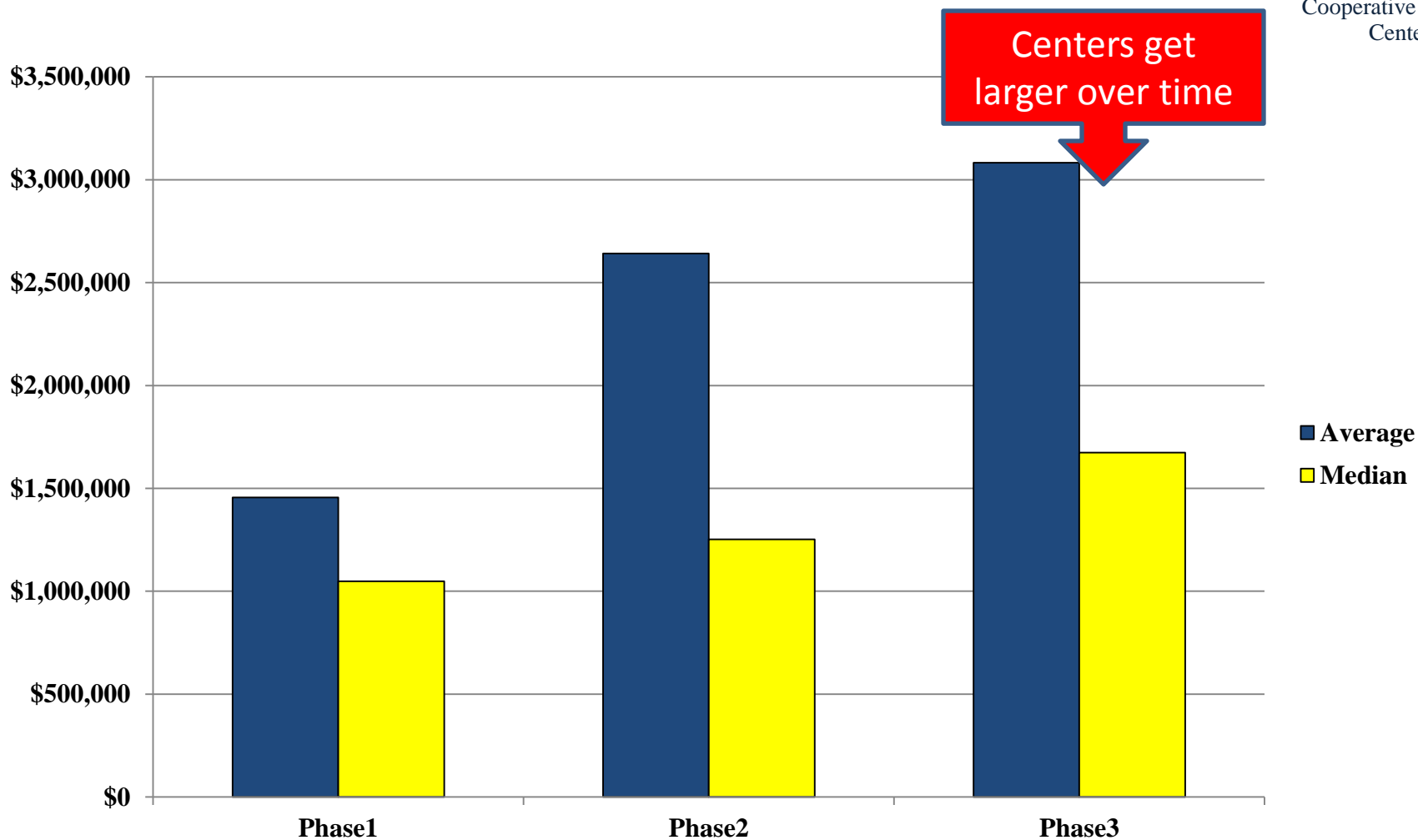


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Centers





Average & Median Total Center Funding

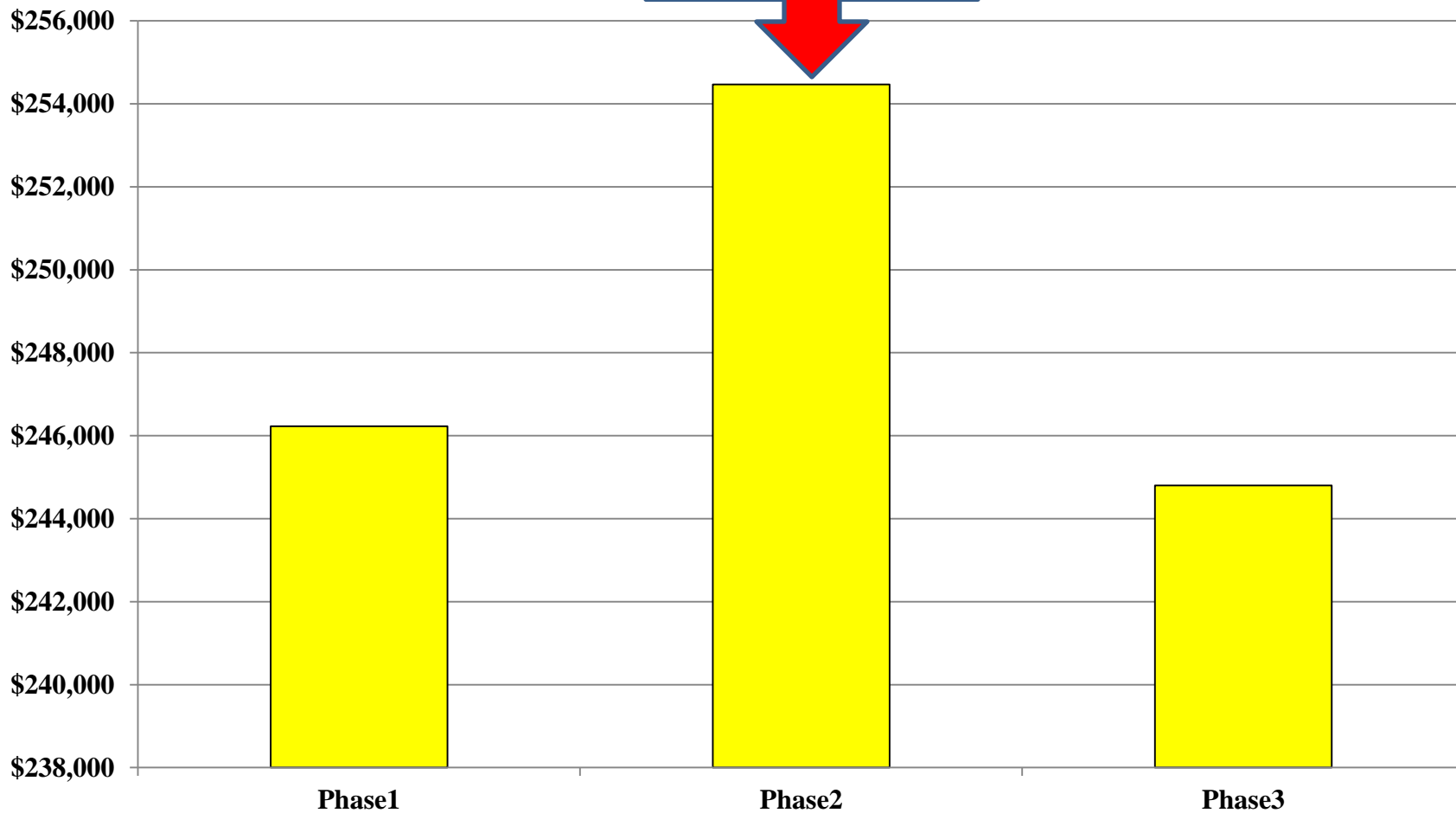


Average NSF IUCRC Awards & Supplements



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Centers

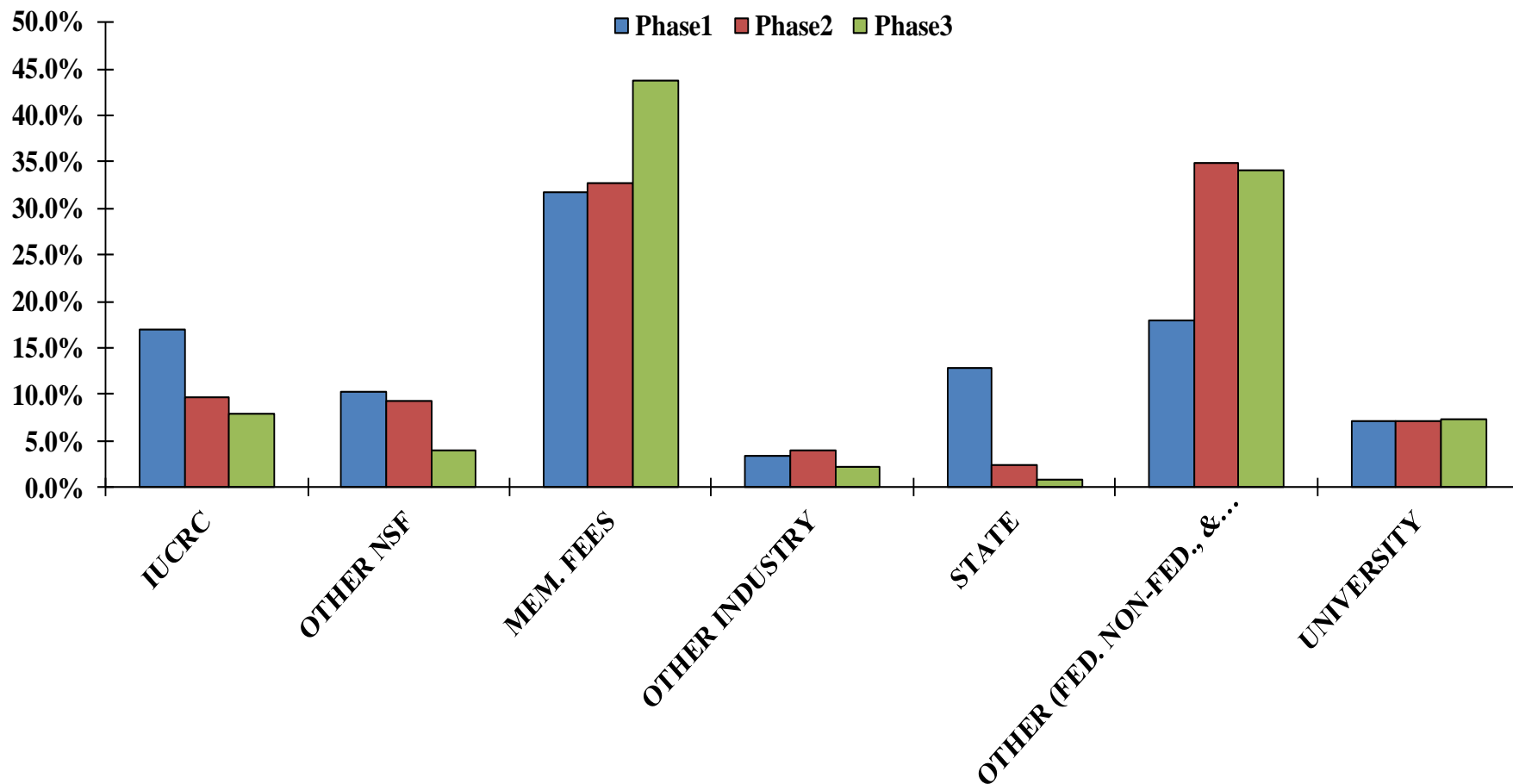
Phase 2 centers
getting rewarded



Total Funding by Source in Percentages



Industry/University
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Centers

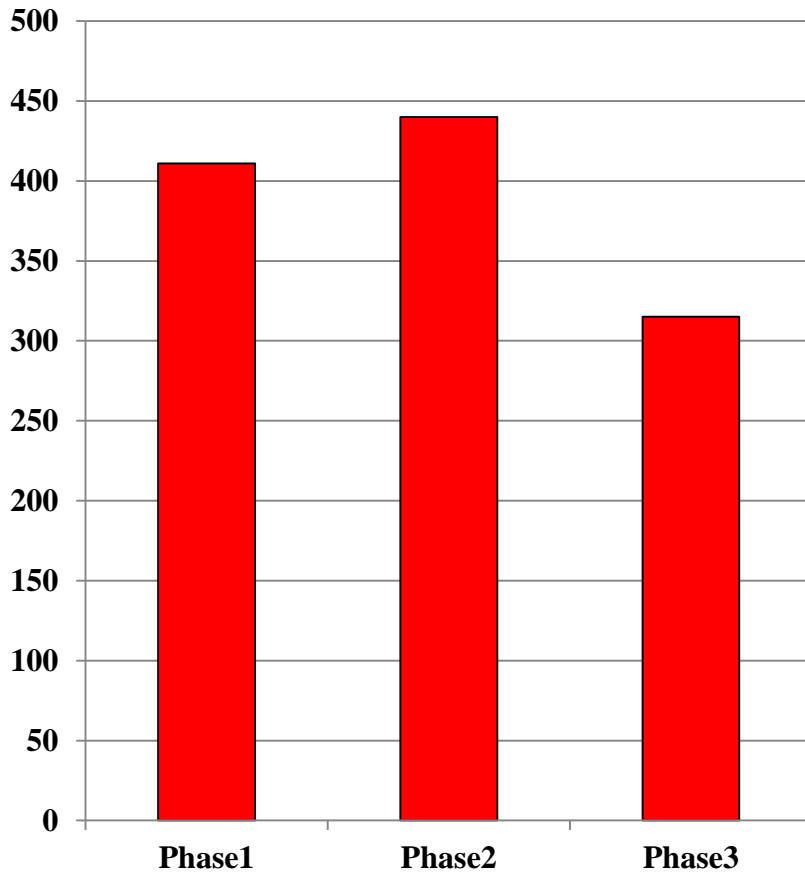


Industrial Memberships

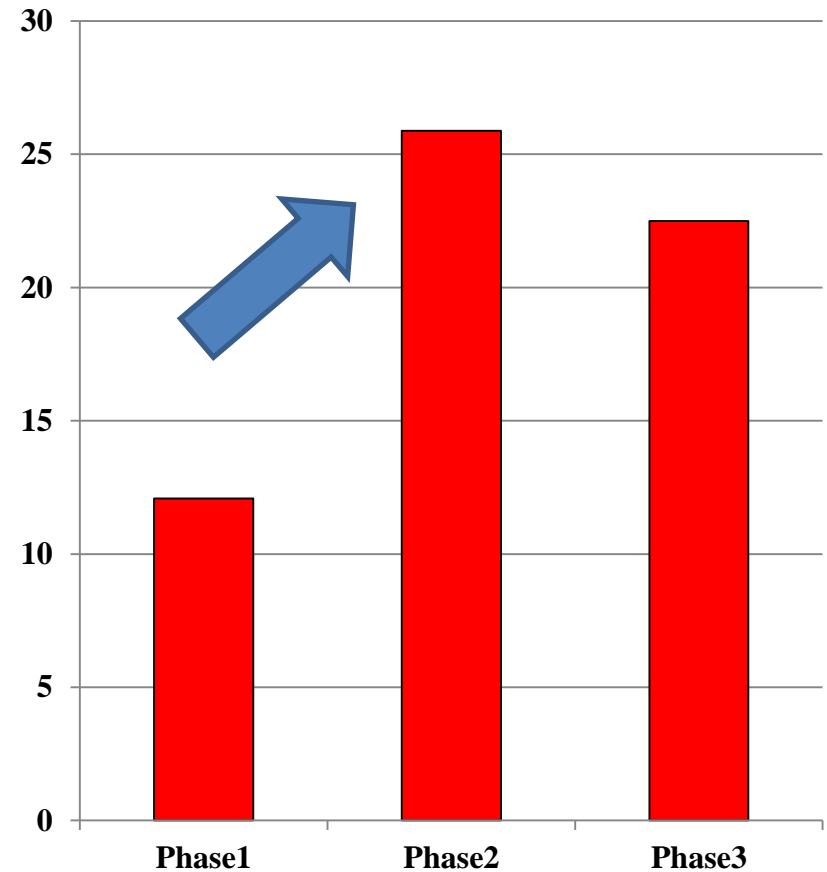


Industry/University
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Centers

Total Number of Memberships



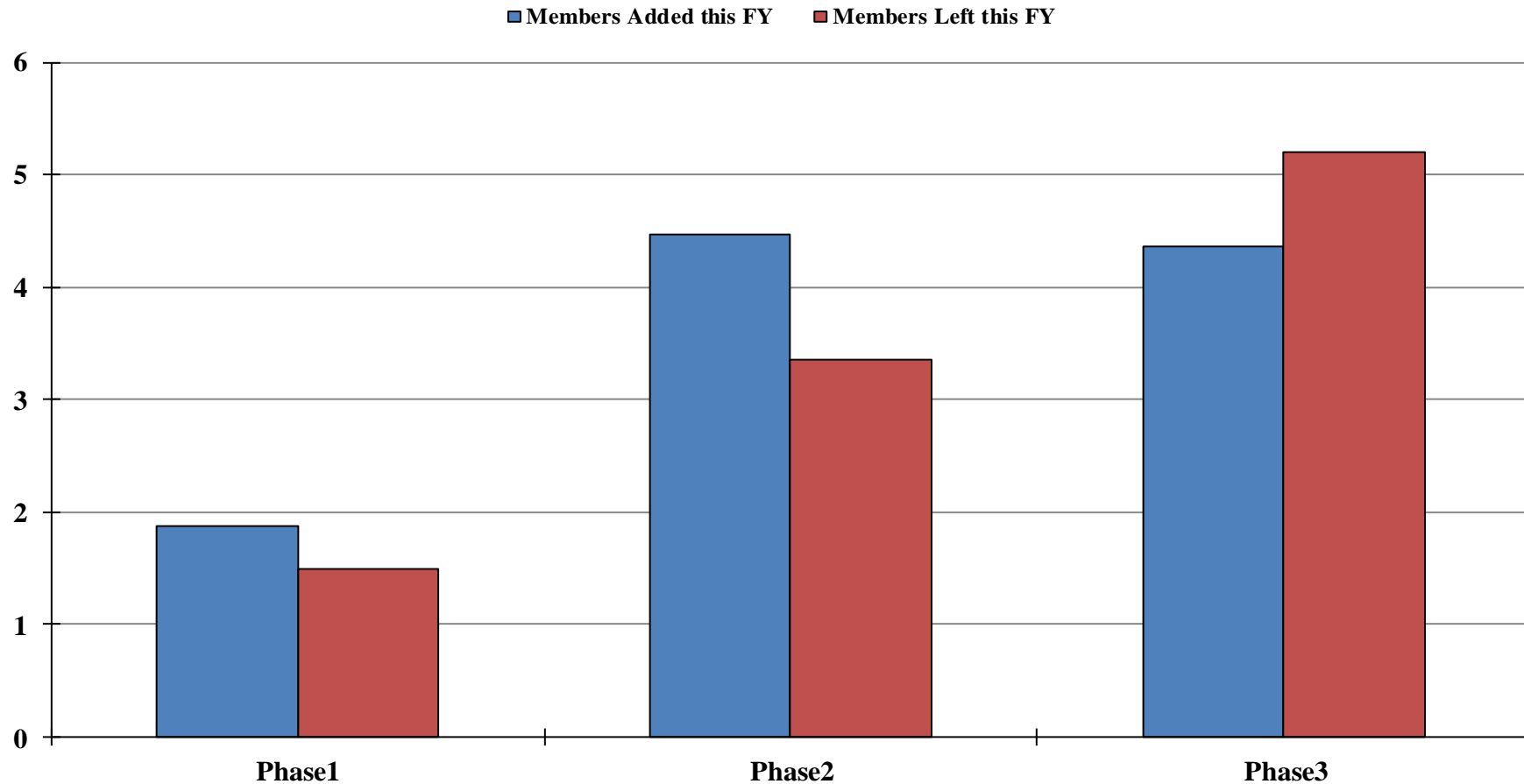
Average Number of Memberships



Average Membership Turn Over



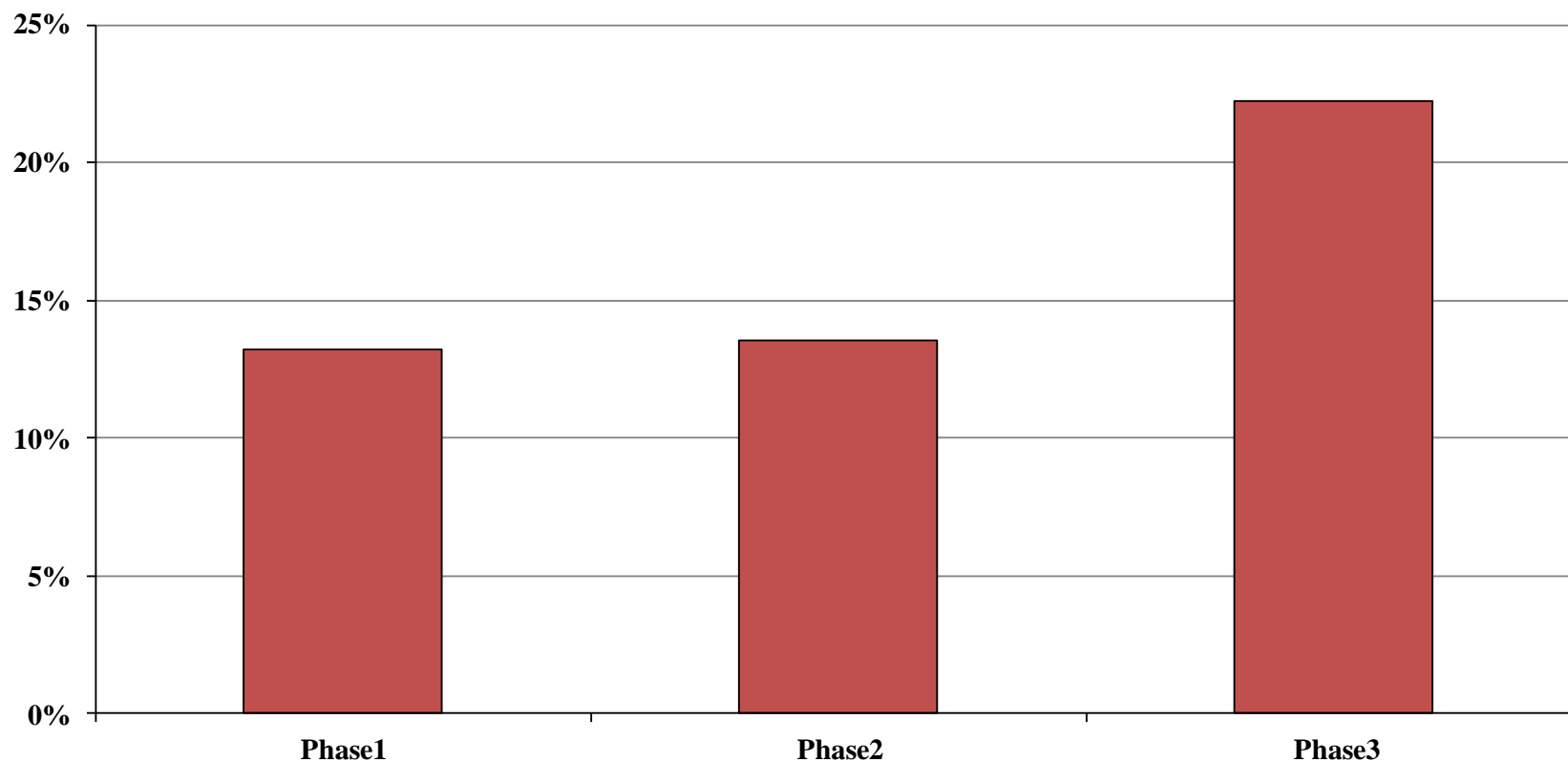
Industry/University
Cooperative Research
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FY 2013-2014 NSF-I/UCRC Center Structure Database



Member Turnover Rate

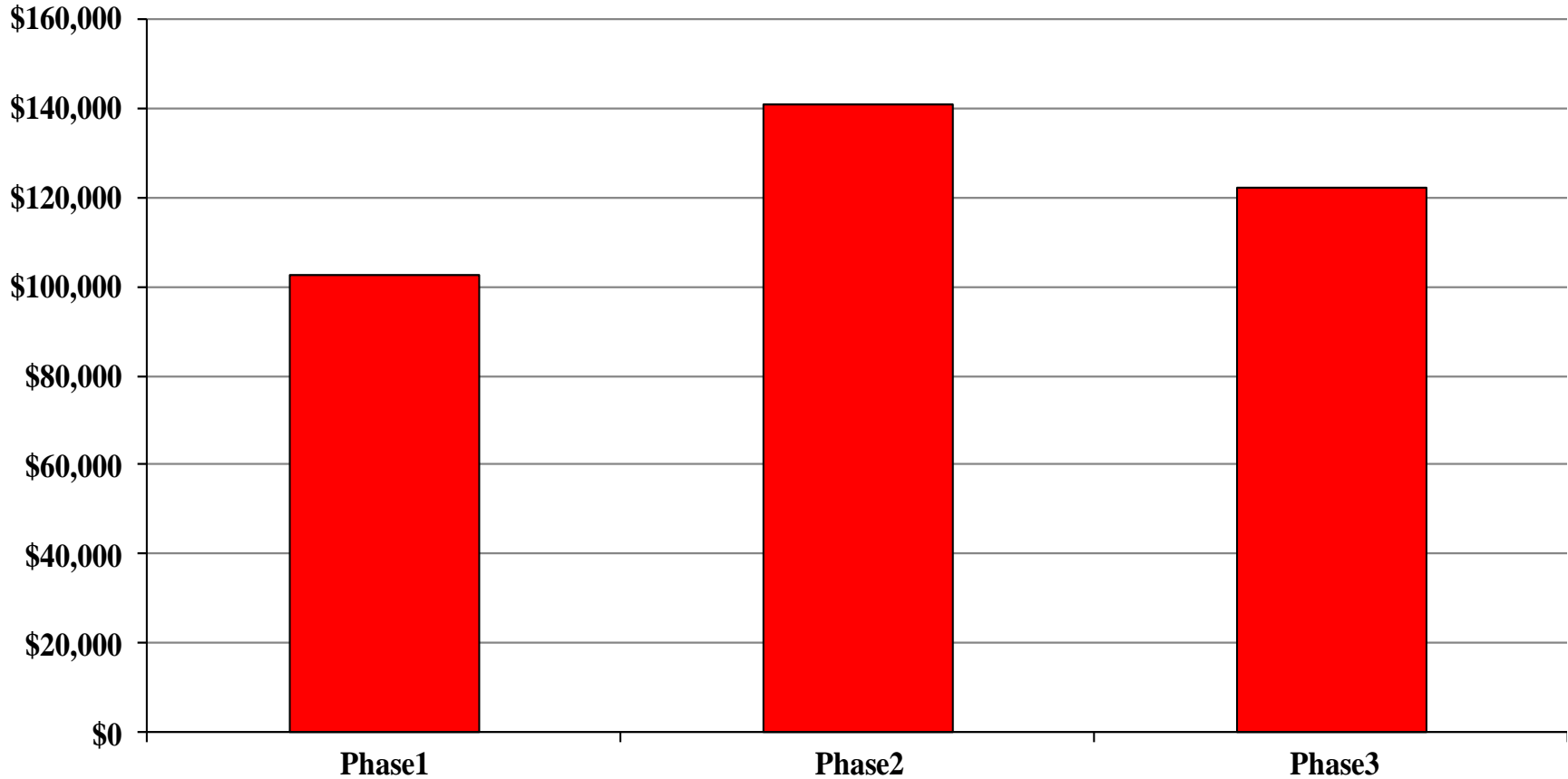


Turnover % = Members terminated in “year X+1” / Total members in “year X”

Average Funding per Researcher



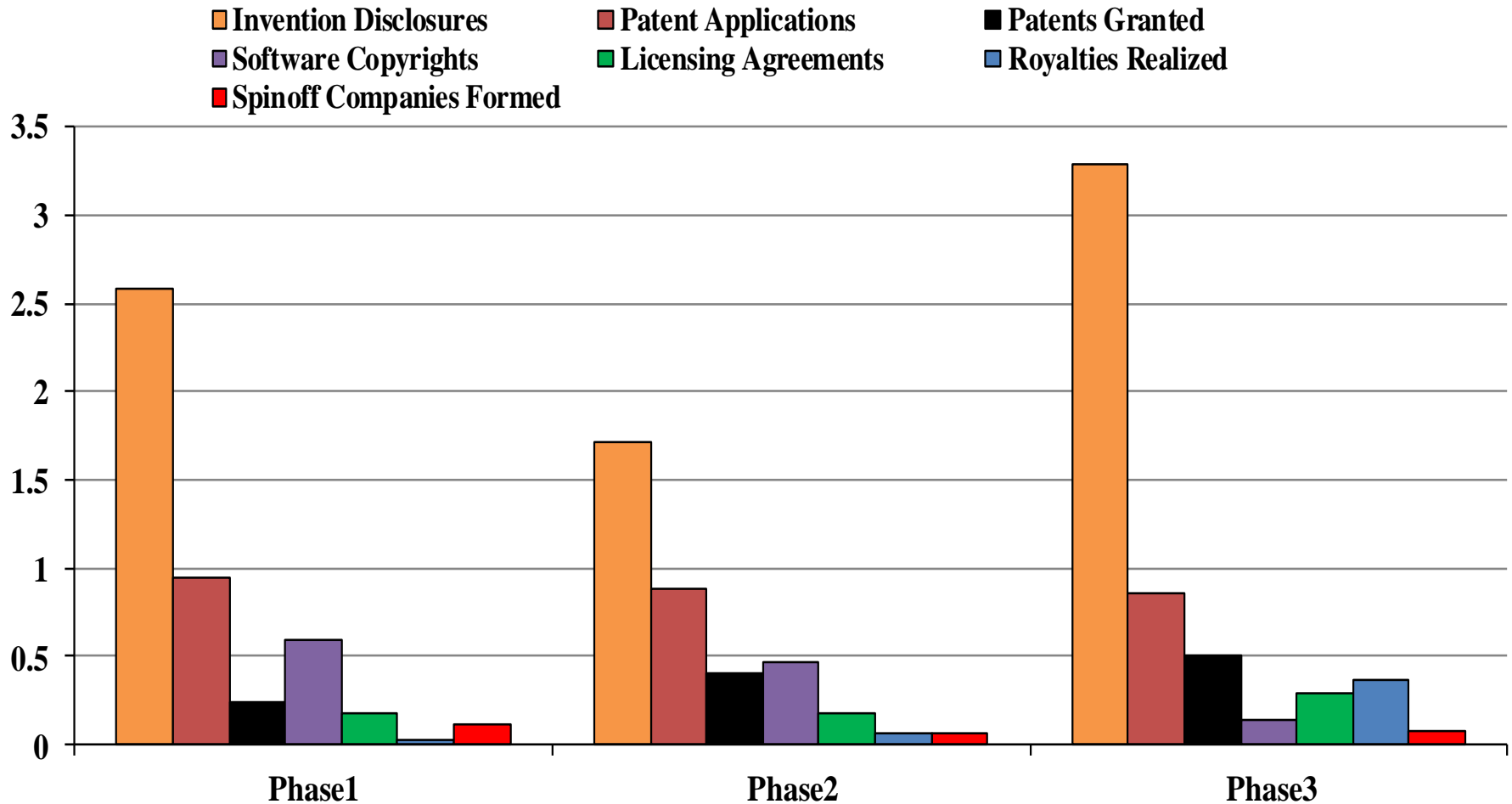
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Average Number of Intellectual Property & Commercialization Events



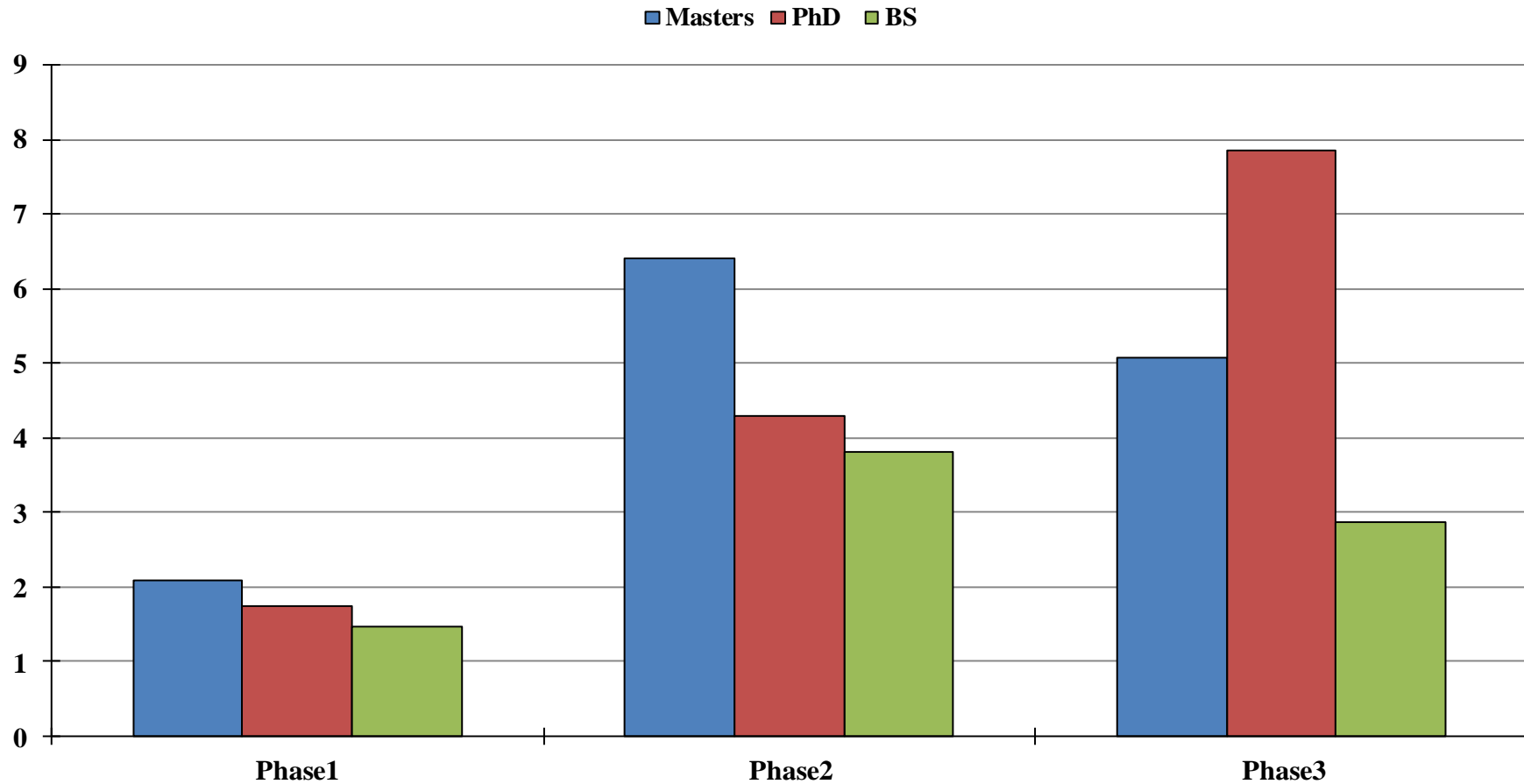
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Average Students Graduated



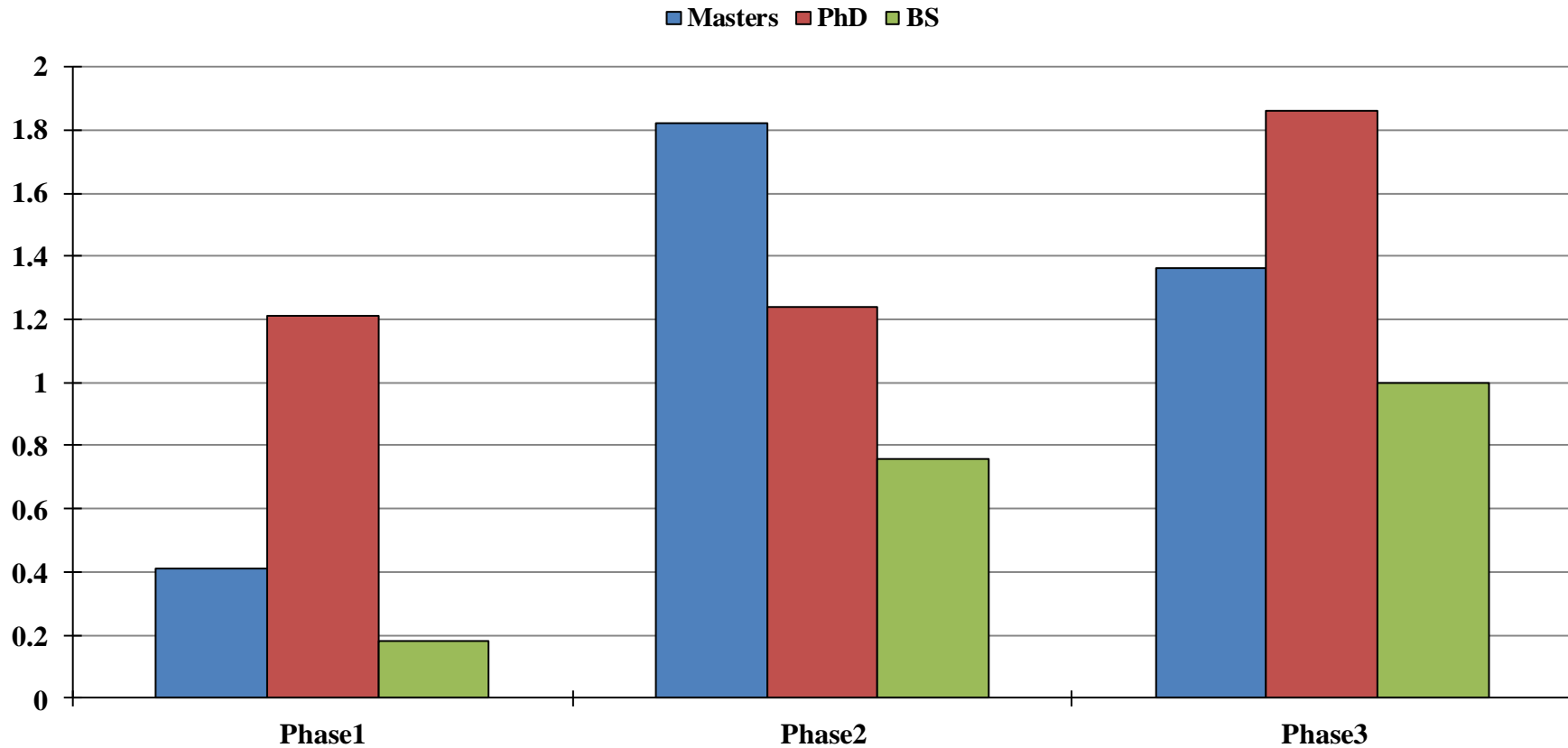
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Average Students Hired by Members



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QUESTIONS?