

National AGEP Evaluation

AGEP National Conference

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AMERICAN INSTITUTES FOR RESEARCH



Today's Presentation

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Quantitative Analysis

-  Preliminary Observations

-  Completion Data

-  Enrollment Data

Qualitative Data



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Quantitative Data



Preliminary Observations

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- ✍ With roughly half as many institutions, AGEP enrolled similar numbers of URMs in STEM graduate departments as Non-AGEP institutions
- ✍ With roughly half as many institutions, AGEP awarded more STEM PhDs to URMs than Non-AGEP institutions
- ✍ AGEP URM enrollment and completion data in Physical Sciences and Math & Statistics is increasing faster than Non-AGEP numbers
- ✍ AGEP URM completion data in Engineering is increasing faster than Non-AGEP while enrollment is relatively similar
- ✍ Non-AGEP URM enrollment data in Biological Sciences is increasing faster than AGEP numbers



Preliminary Observations (cont.)

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- ✍ African American enrollment in Non-AGEP biological and computer science graduate departments increases faster than AGEP institutions
- ✍ Completion and enrollment of URMs in STEM is increasing across all institutions while Non-URM data fluctuates but remains relatively flat
- ✍ More STEM PhDs are awarded to Hispanics at institutions outside Puerto Rico than within



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Completion Data

*PhDs Awarded in STEM Disciplines
from 1990 to 2007 (Preliminary)*



Preliminary Observations

Completion Data

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- ✍ With roughly half as many institutions, AGEP awarded more STEM PhDs to URMs than Non-AGEP institutions
- ✍ AGEP URM completion data in Physical Sciences, Engineering, and Math & Statistics is increasing faster than Non-AGEP numbers



Preliminary Observations

Completion Data (cont.)

7



- ✍ Completion of URM's in STEM is increasing across all institutions while Non-URM data fluctuates but remains relatively flat
- ✍ More STEM PhDs are awarded to Hispanics at institutions outside Puerto Rico than within



Data Description

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Underrepresented Minorities Defined

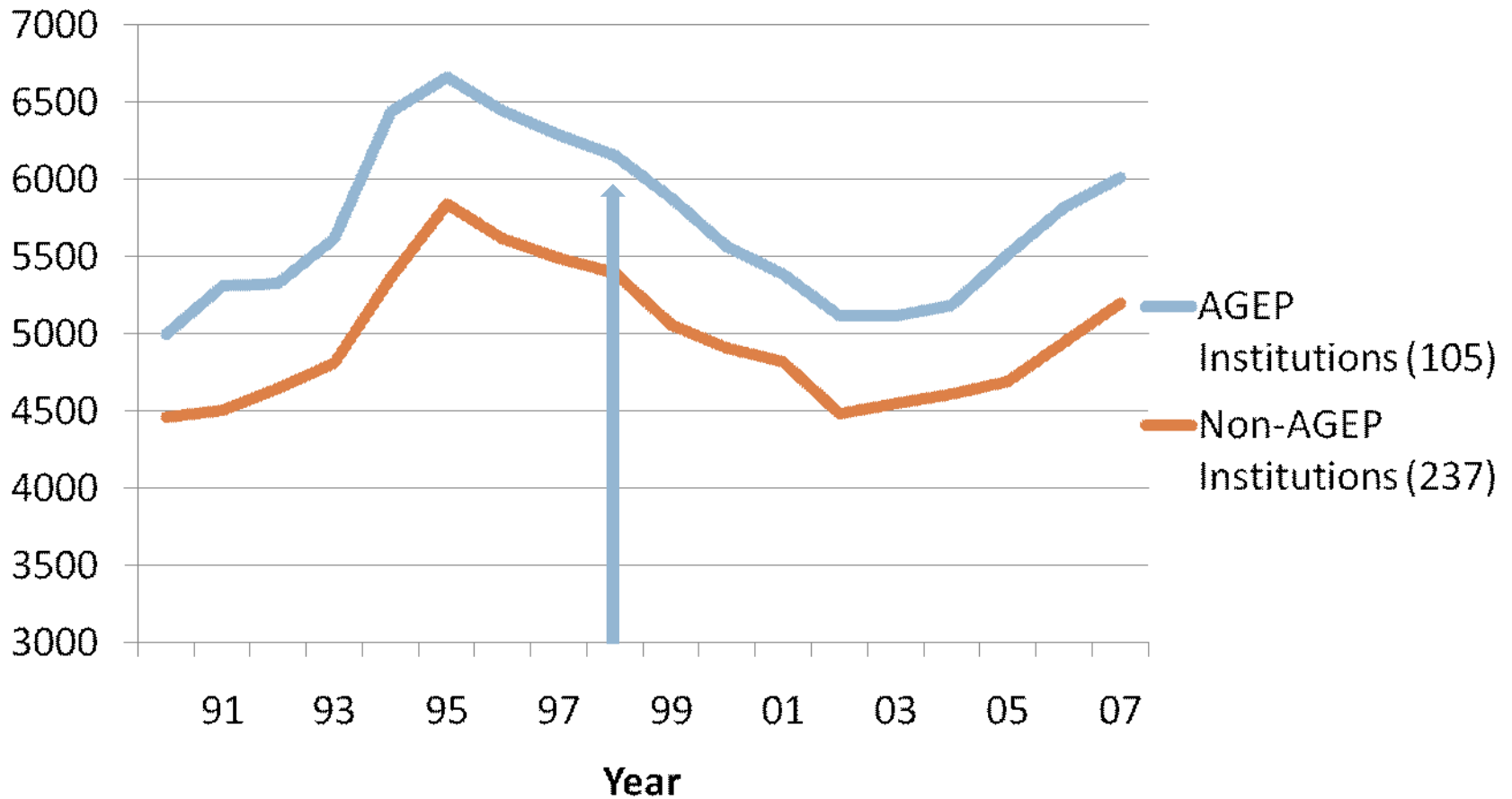
-  U.S. citizens and permanent residents: African American, Non Hispanic; American Indian or Alaskan Native; Hispanic
-  Data for Native Hawaiian /Pacific Islanders was not available until 2001, so they are not included in overall URM numbers but are presented separately

STEM Disciplines Include:

-  Engineering, Math and Statistics, Physical Sciences, Biological Sciences, and Computer Sciences

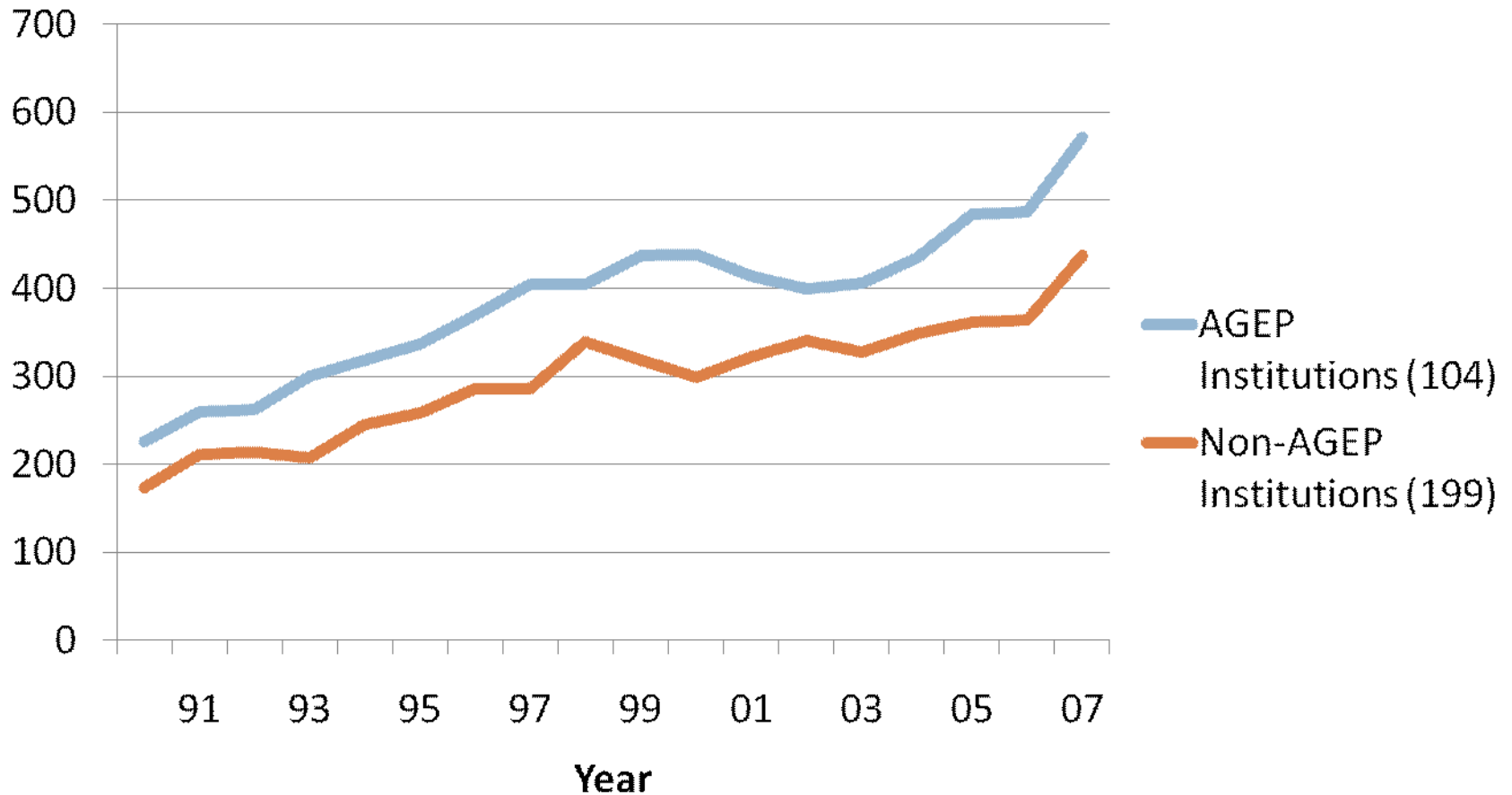


Total Completion of STEM PhDs



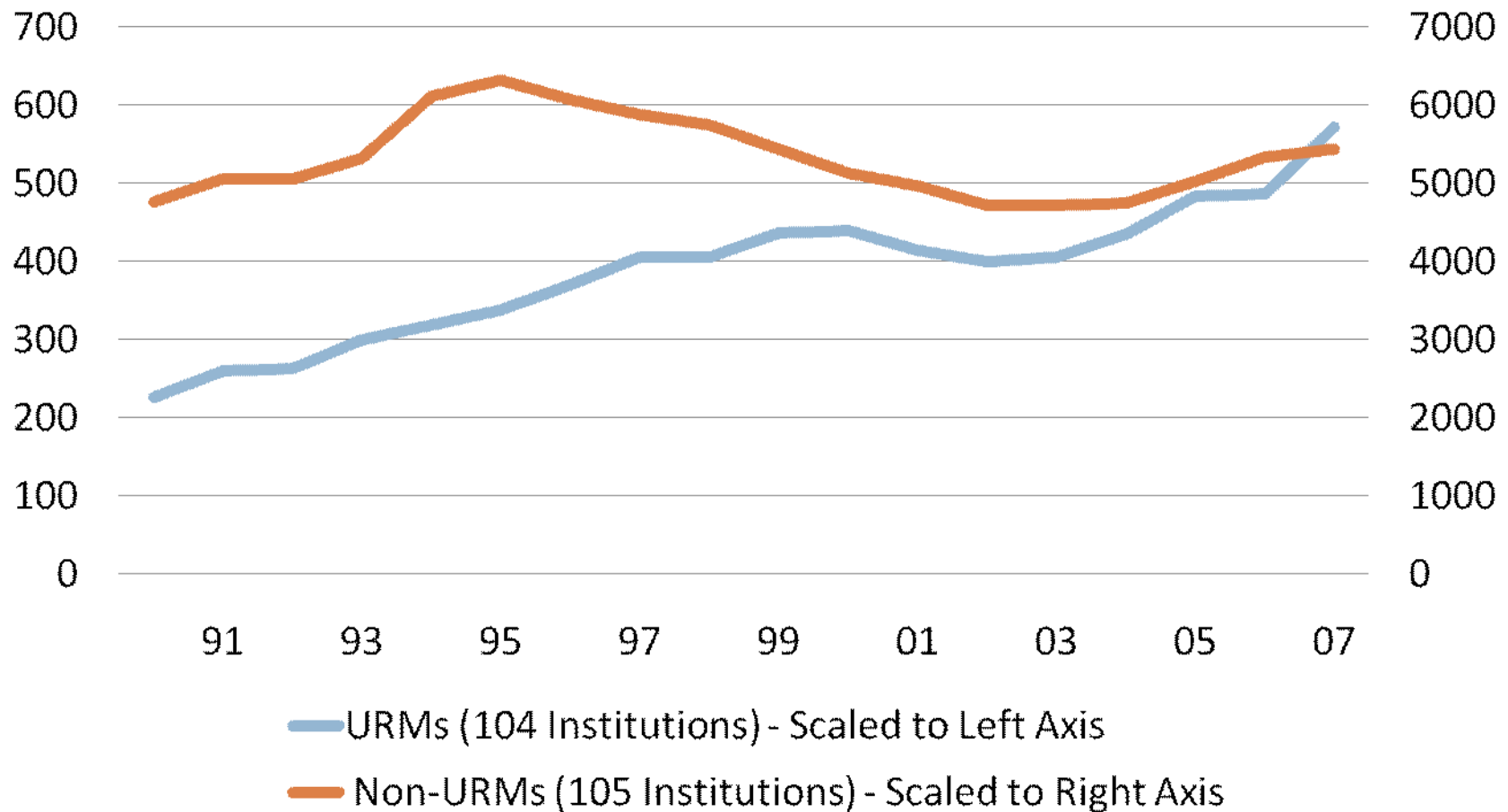
Completion of STEM PhDs by URM

10



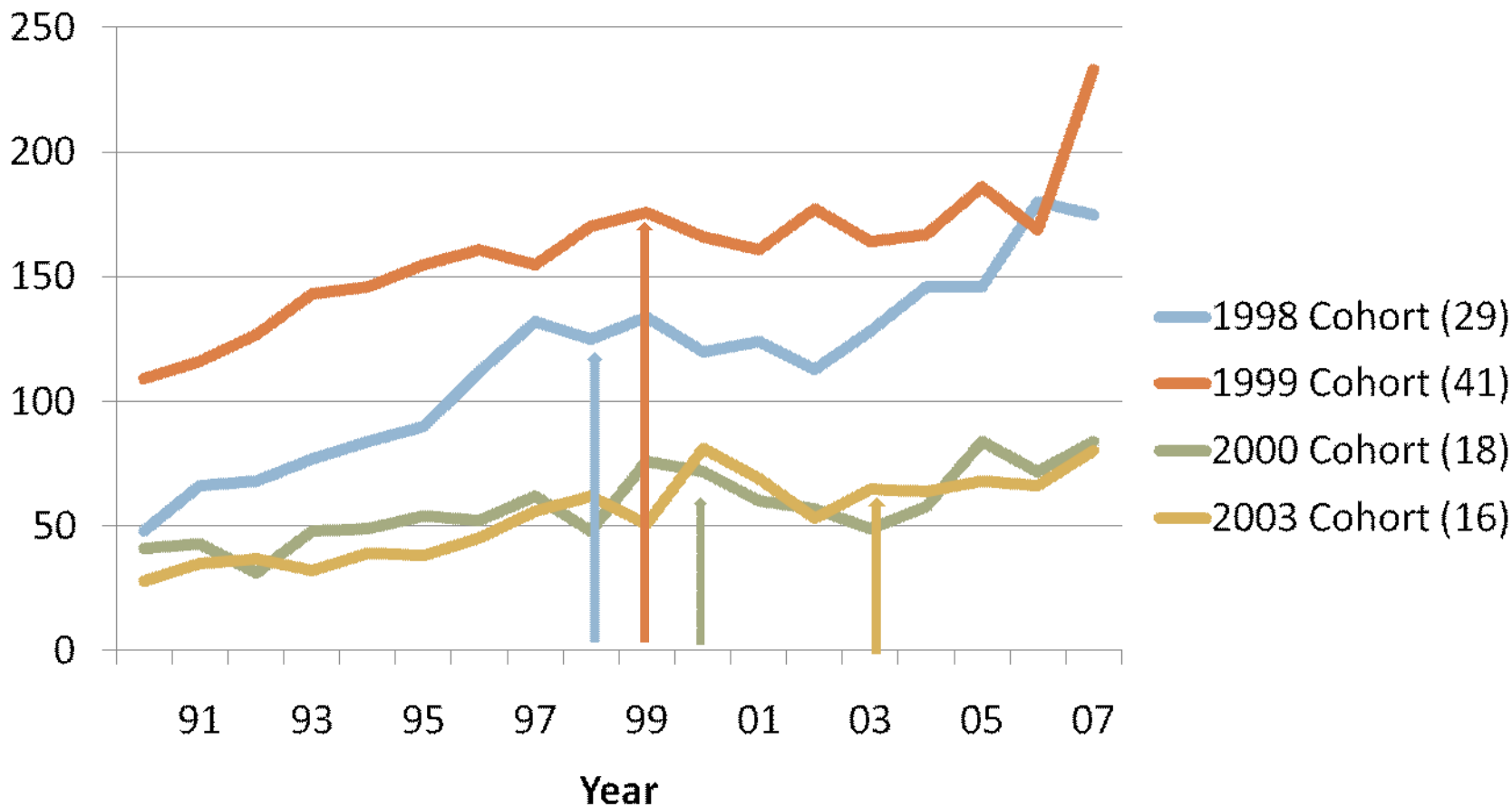
Completion of STEM PhDs at AGEP Institutions, URM and Non-URM

11



Completion of STEM PhDs by All URMs by AGEP Cohort

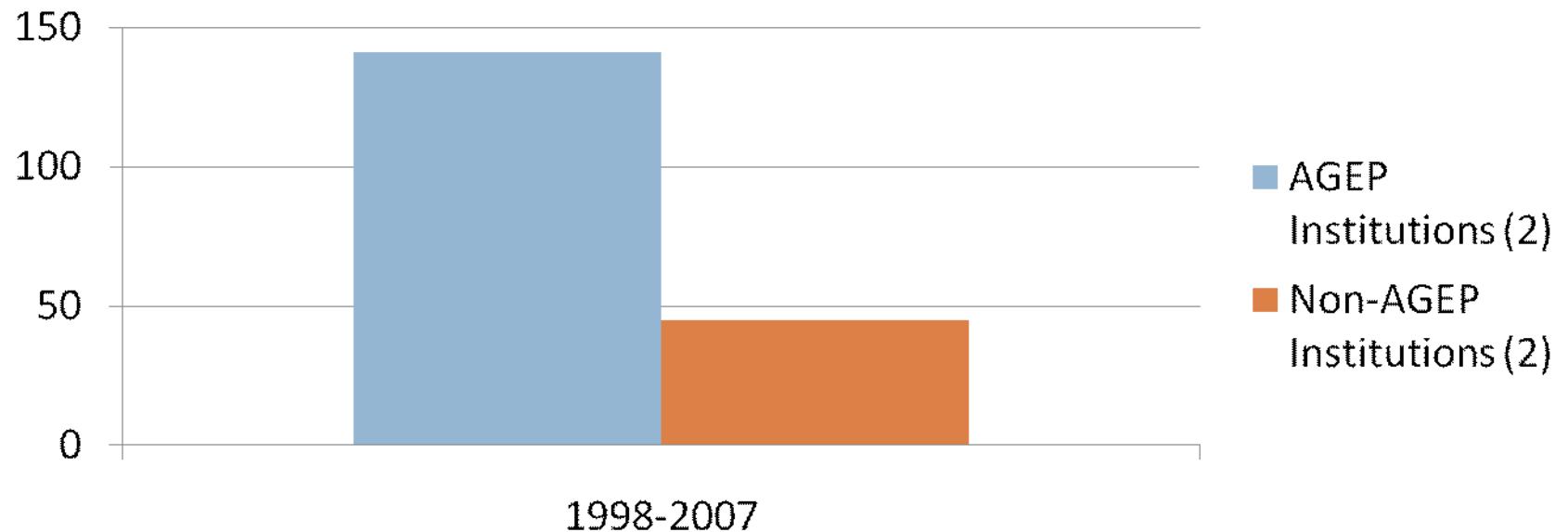
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Completion of STEM PhDs by URM in Puerto Rican Institutions

13

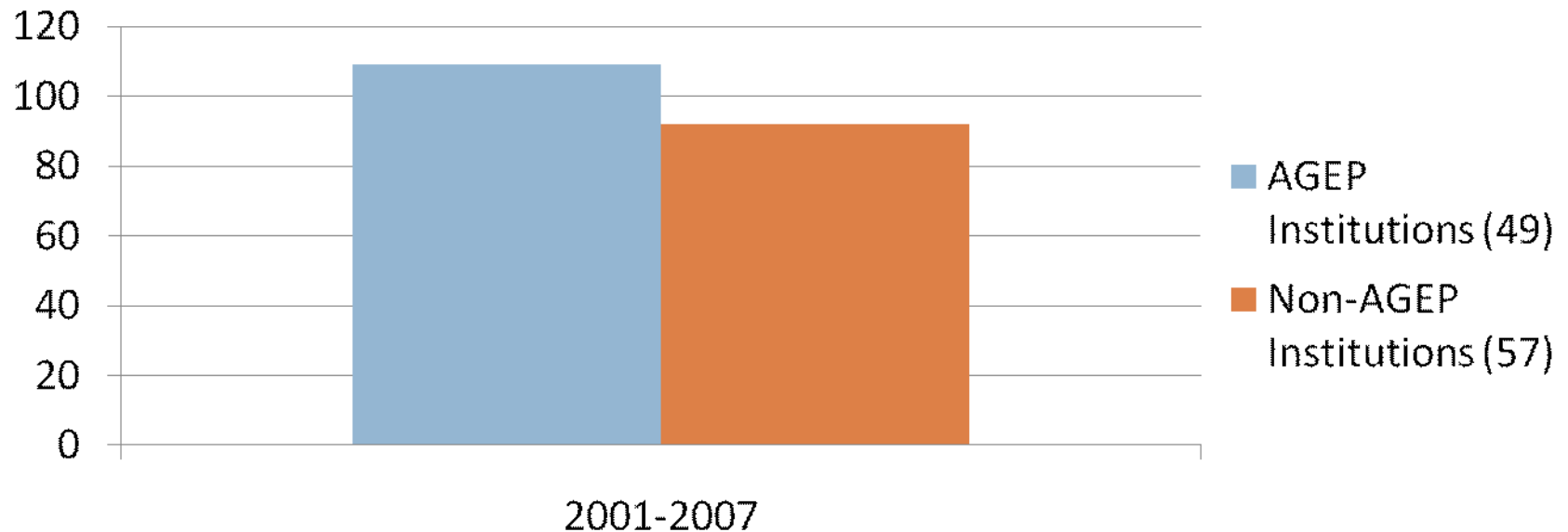
- Due to the very small number of PhDs awarded to this group, trend analysis is not possible
- Data Presented here is aggregated from 1998-2007



Completion of STEM PhDs by Native Hawaiian/Pacific Islanders

14

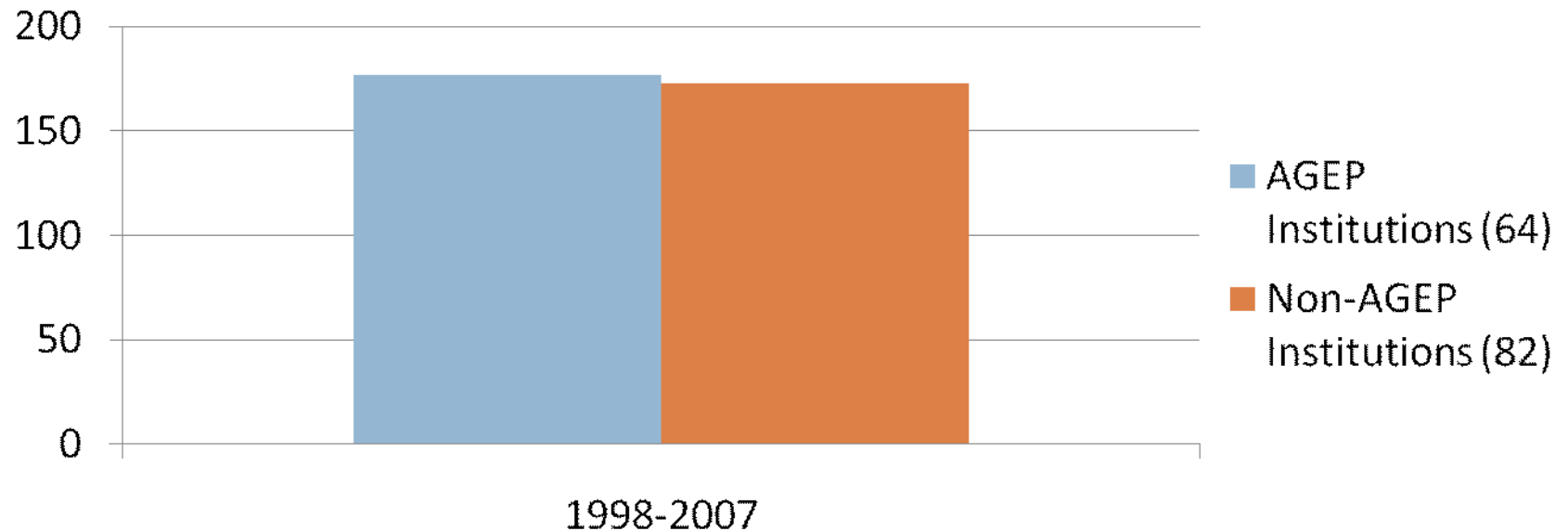
- ✍ Completion data for Native Hawaiian/Pacific Islanders was not reported separately until 2001
- ✍ Due to the very small number of PhDs reported, trend analysis is not possible
- ✍ Data Presented here is aggregated from 2001-2007



Completion of STEM PhDs by American Indian/Alaskan Natives

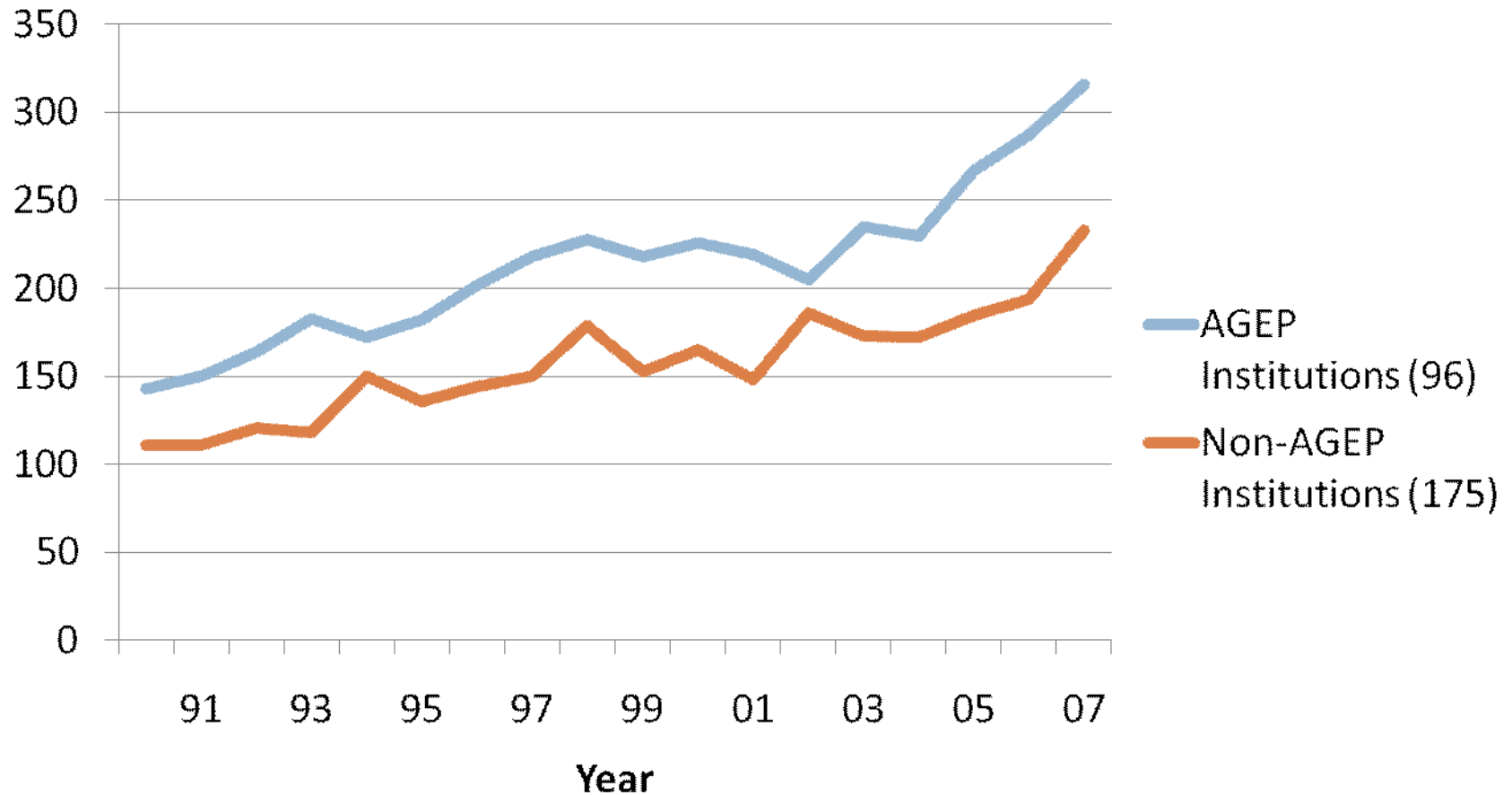
15

- Due to the very small number of PhDs reported, trend analysis is not possible
- Data Presented here is aggregated from 1998-2007



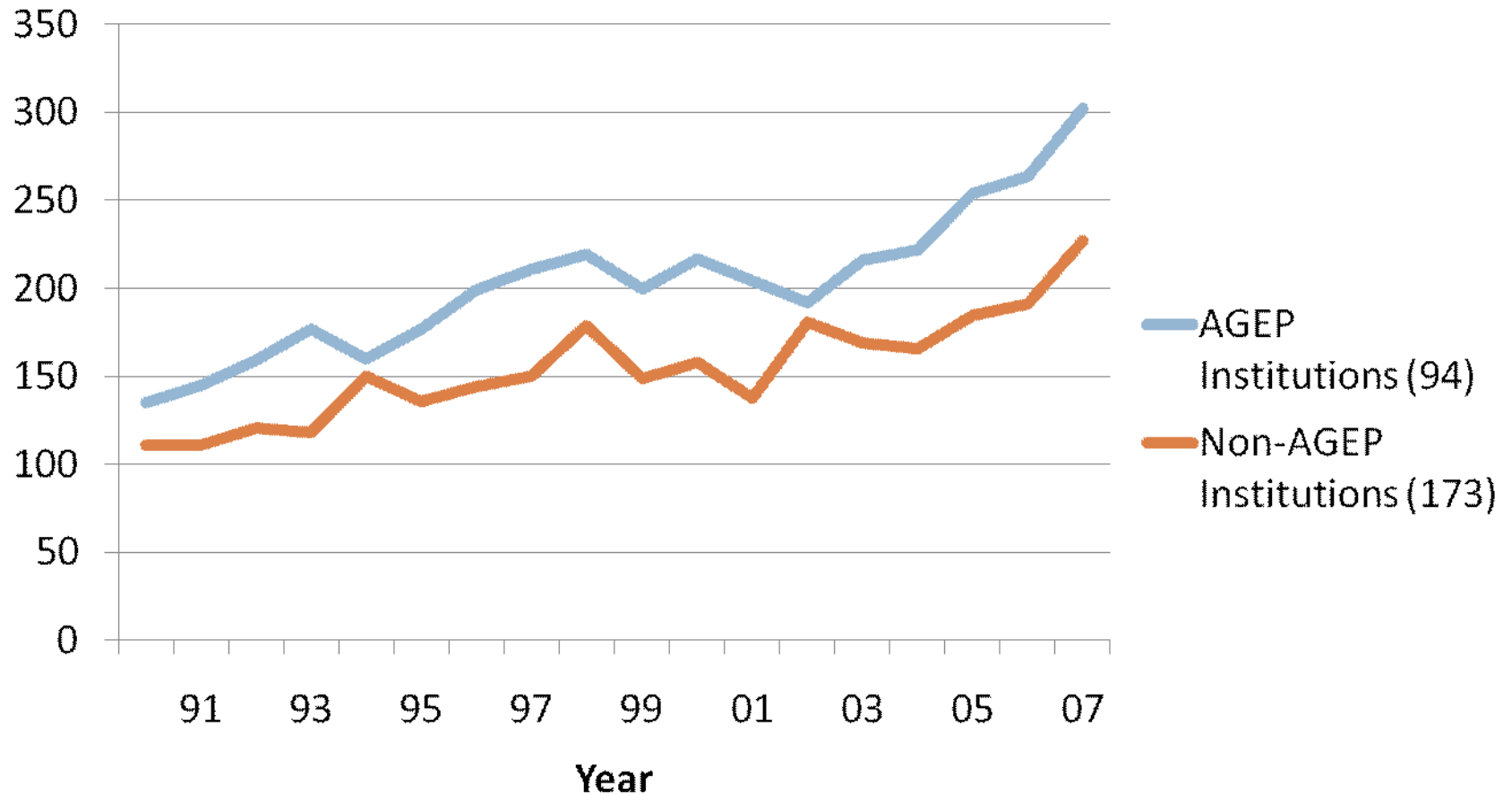
Completion of STEM PhDs by Hispanics

16



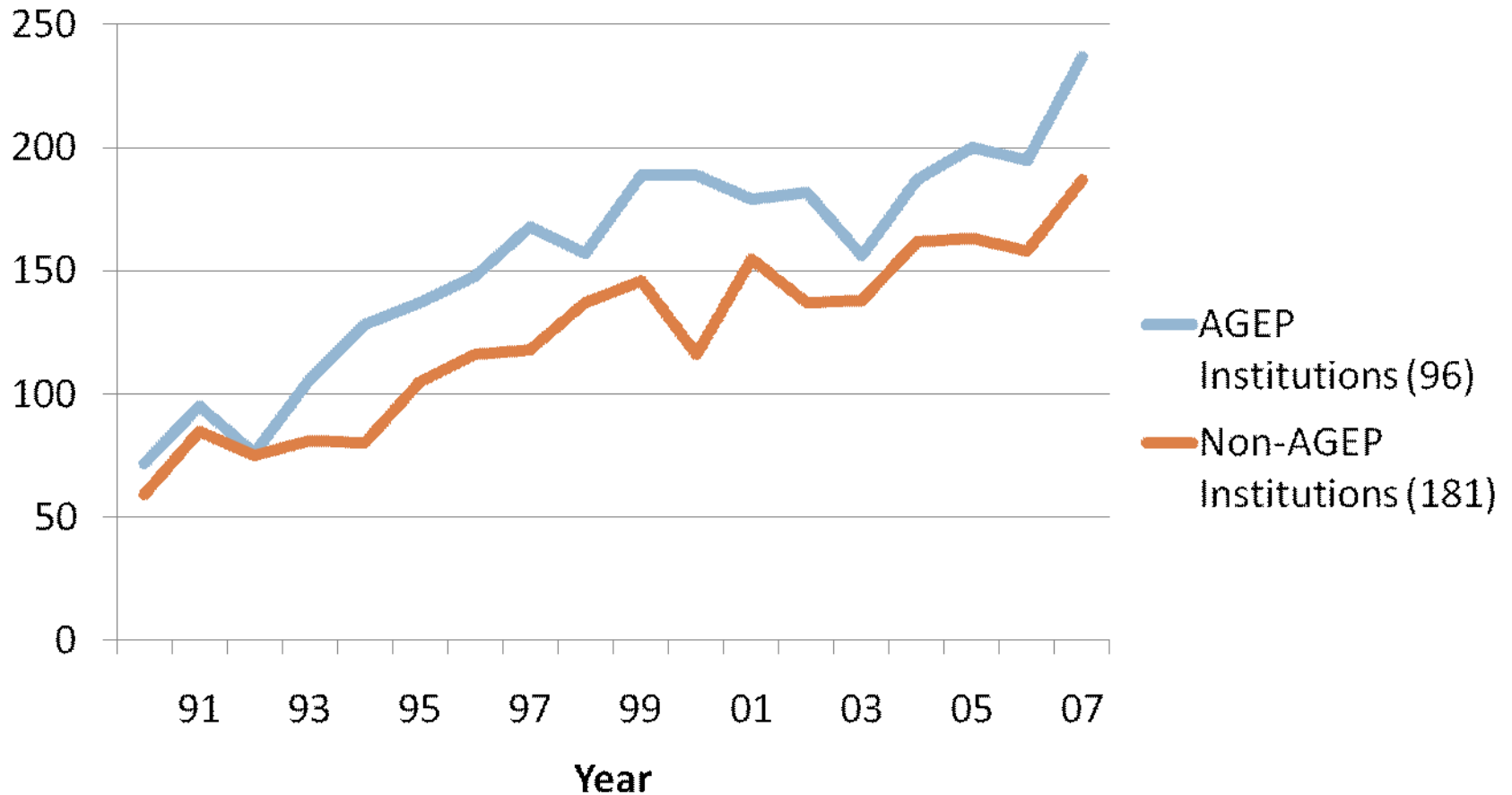
Completion of STEM PhDs by Hispanics (Without Puerto Rican Institutions)

17



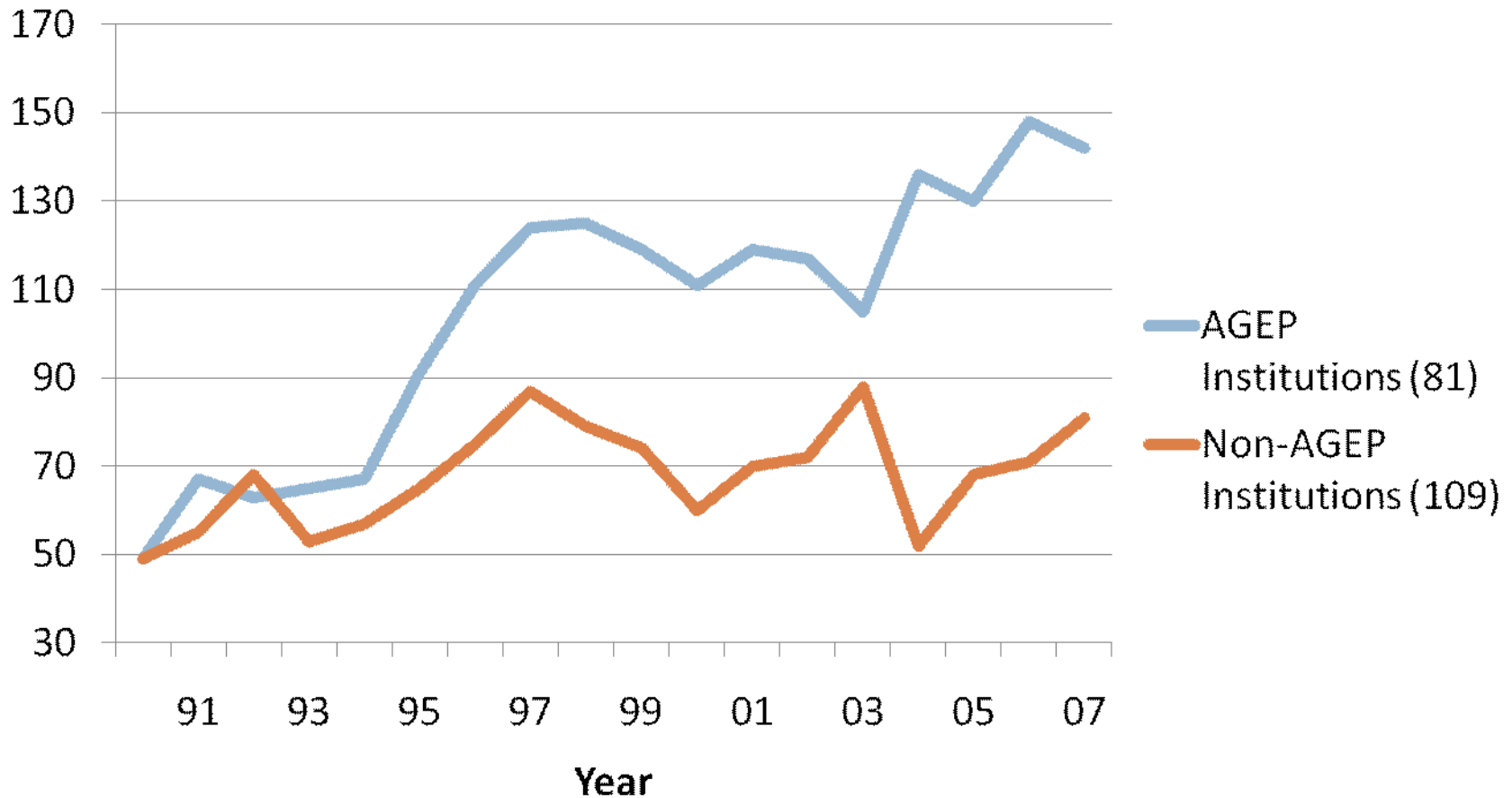
Completion of STEM PhDs by African Americans

18



Completion of Engineering PhDs by All URM_s

19



Enrollment Data

*Graduate Enrollment from 1992 to 2007
(Preliminary)*



Enrollment Definition

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- ✍ Data presented are Enrollment in Graduate Programs at institutions offering PhDs in at least one STEM discipline (at least one GSS-eligible unit confers doctoral degrees in a STEM department)
- ✍ Enrollment in Masters Programs is included



Preliminary Observations

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- ✍ With roughly half as many institutions, AGEP enrolled similar numbers of URMs in STEM graduate departments as Non-AGEP institutions
- ✍ AGEP URM enrollment data in Physical Sciences and Math & Statistics is increasing faster than Non-AGEP numbers
- ✍ Non-AGEP URM enrollment data in Biological Sciences is increasing faster than AGEP numbers



Preliminary Observations (cont.)

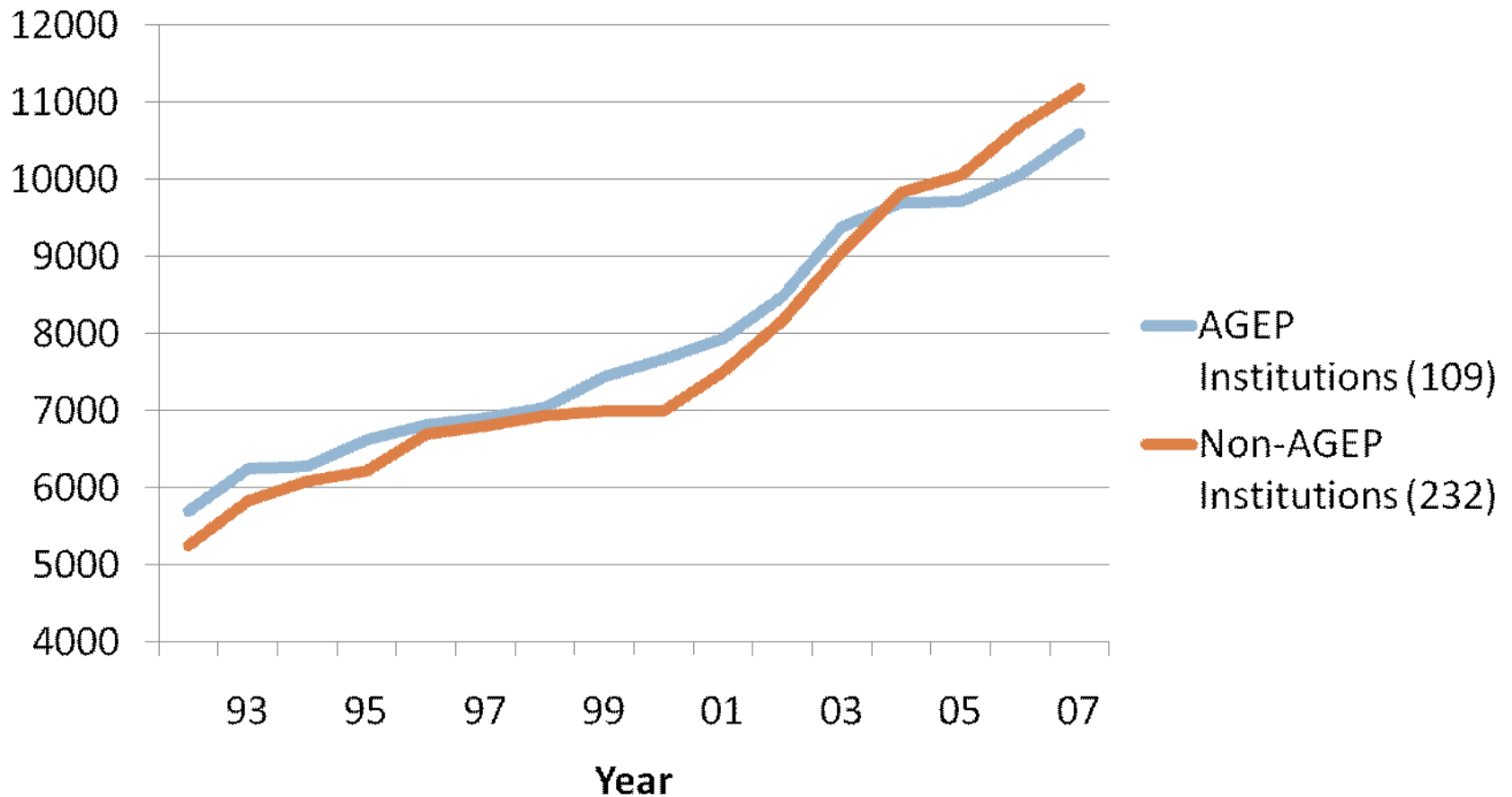
23

- ✍ African American enrollment in Non-AGEP biological and computer science graduate departments increases faster than AGEP institutions
- ✍ Enrollment of URMs in STEM is increasing across all institutions while Non-URM data fluctuates but remains relatively flat



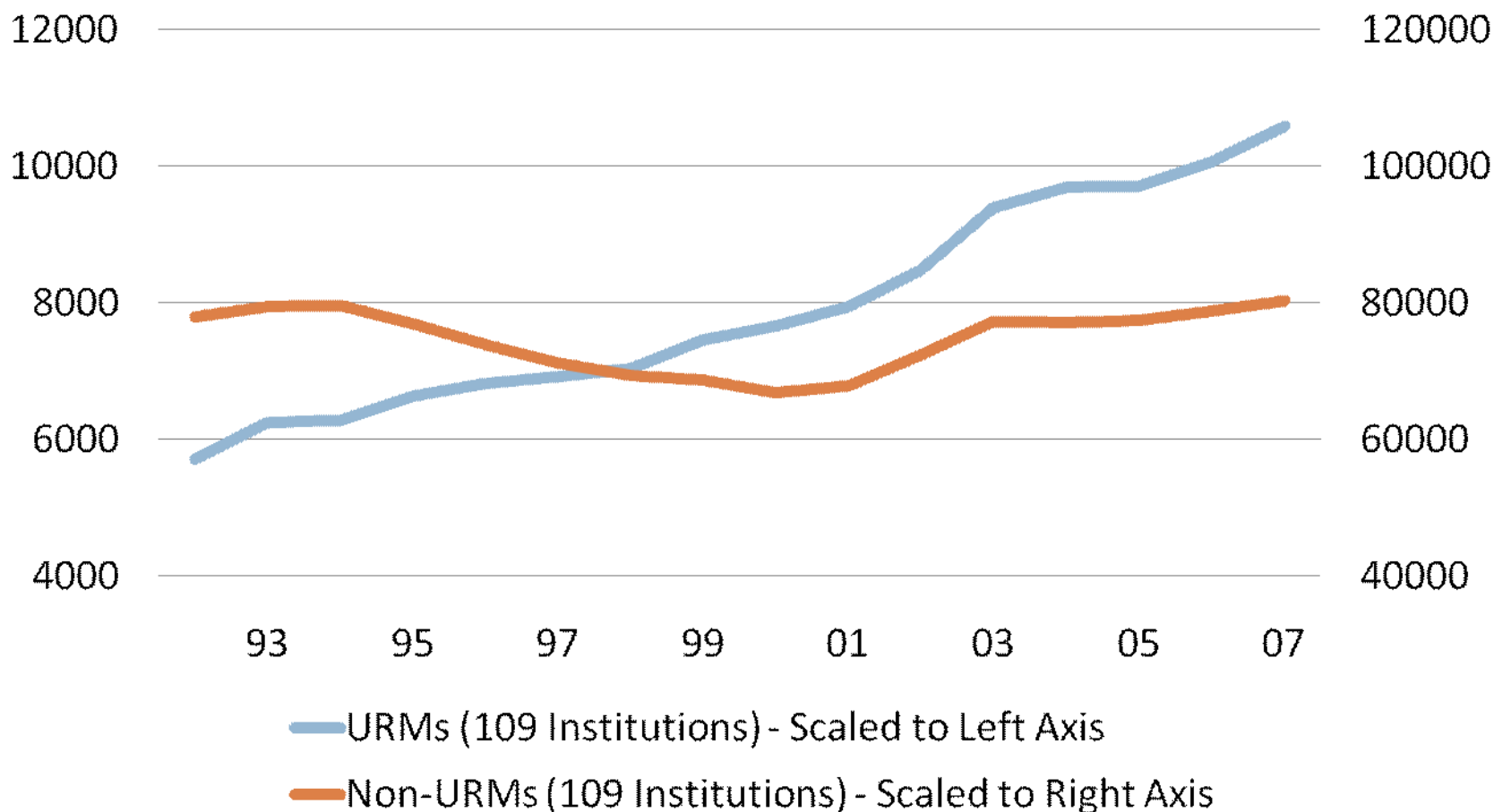
Graduate Enrollment of URM¹s in STEM Departments

24



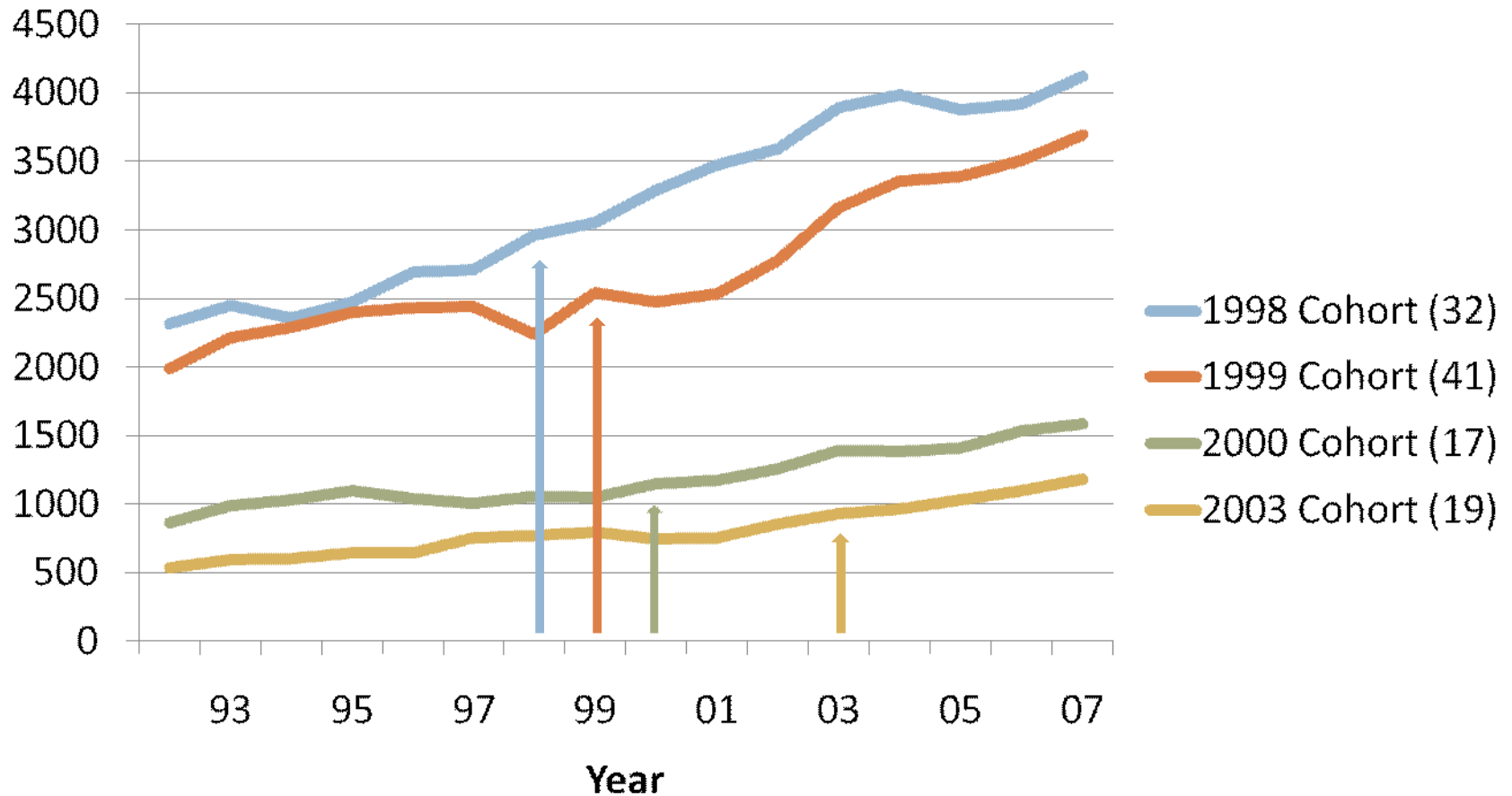
Graduate Enrollment in STEM Departments at AGEP Institutions, URM and Non-URM

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Graduate Enrollment of URM Students in STEM Departments by AGEP Cohort

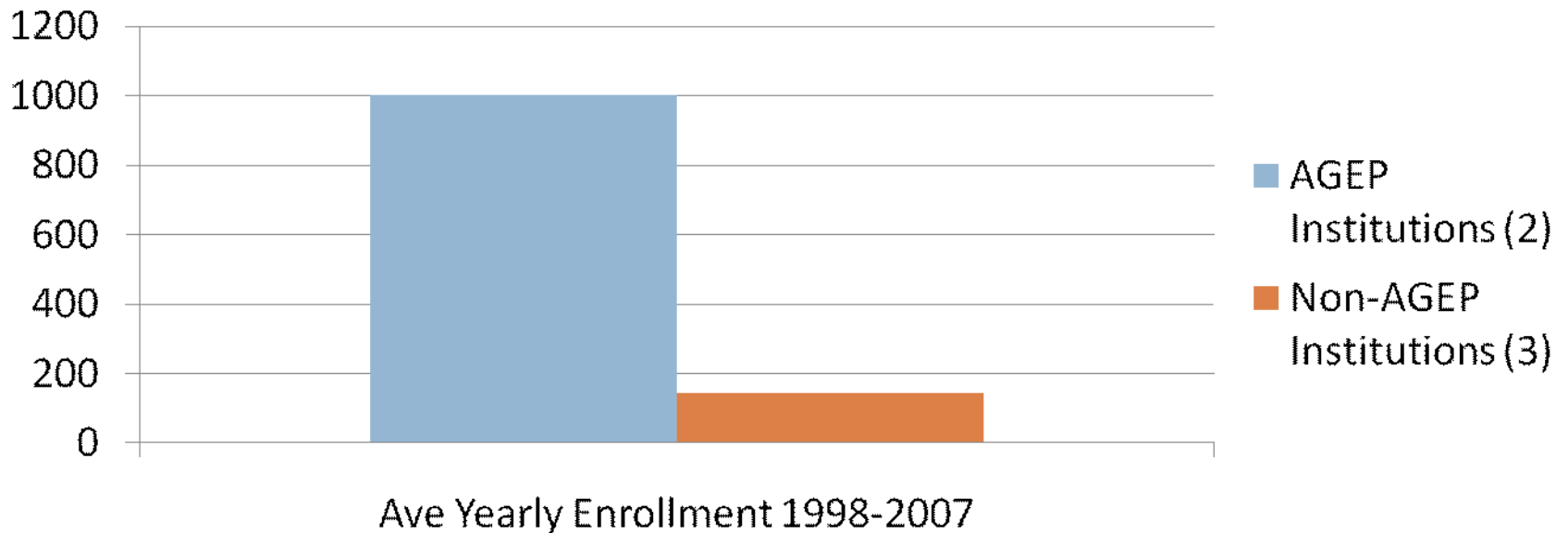
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Graduate Enrollment of URM's in STEM Departments at Puerto Rican Institutions

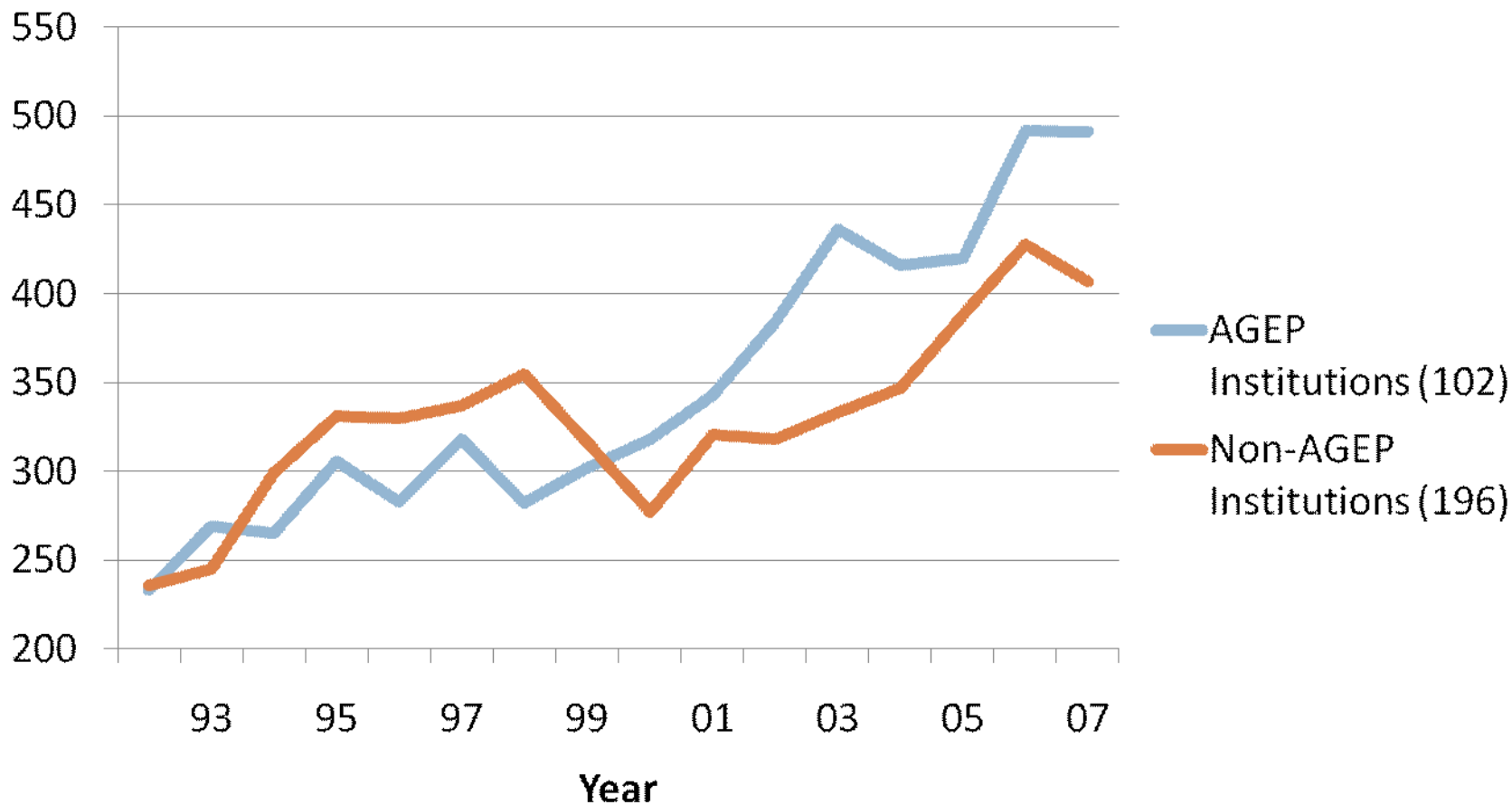
27

- ✍ Due to the small number of institutions, trend analysis is not presented
- ✍ Data Presented here is average yearly enrollment from 1998-2007



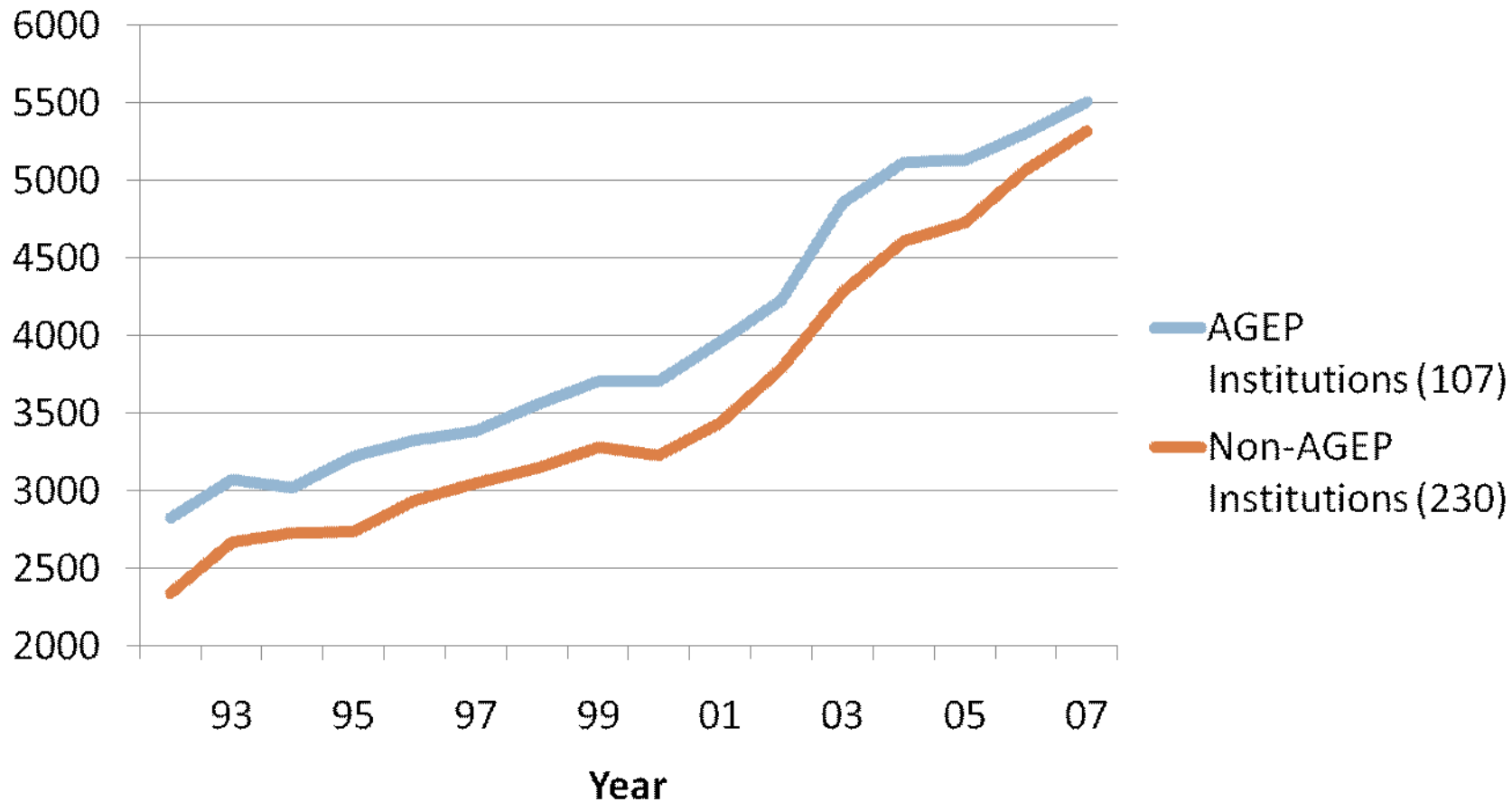
Graduate Enrollment of American Indian/Alaskan Natives in STEM Departments

28



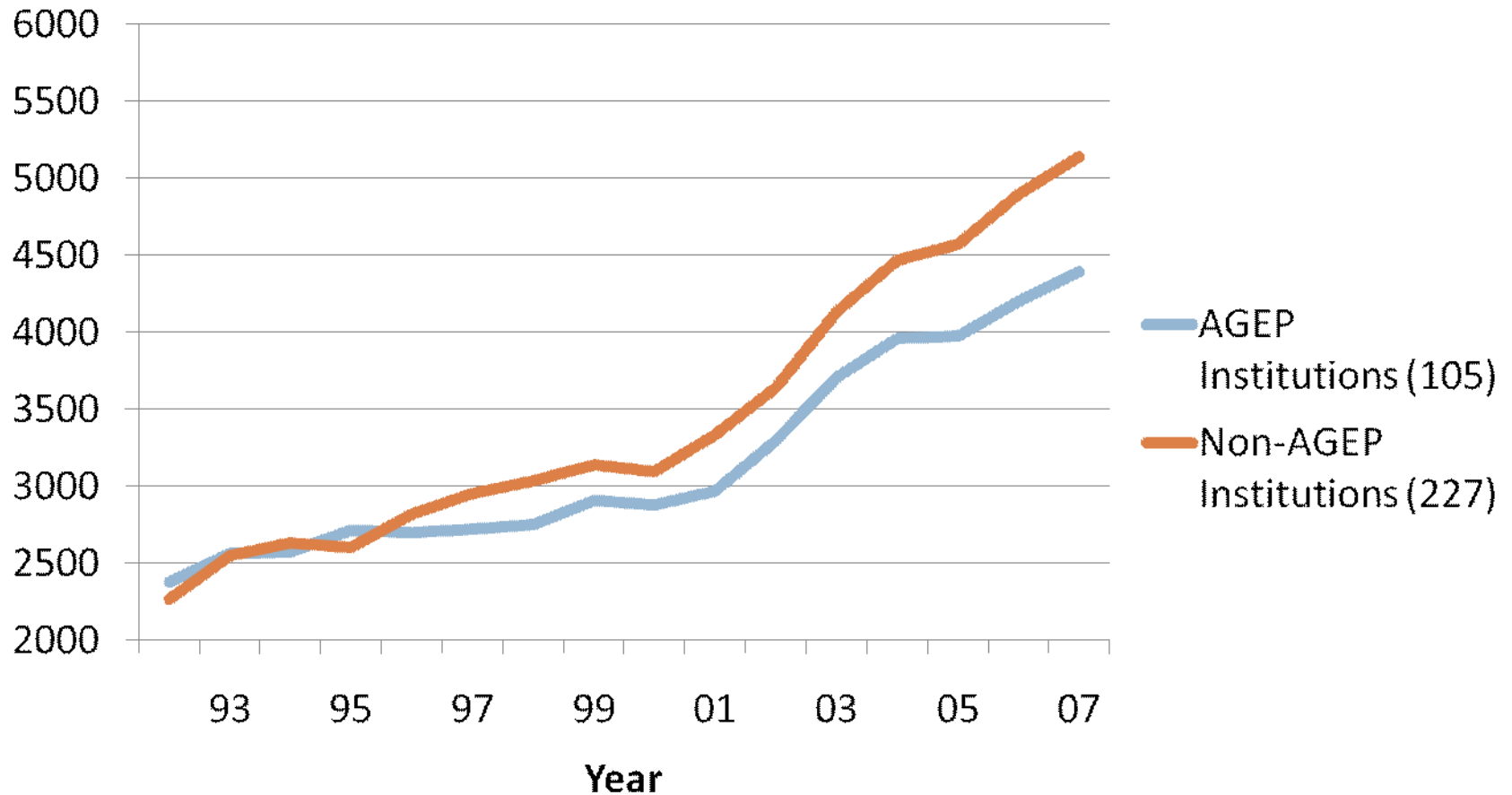
Graduate Enrollment of Hispanics in STEM Departments

29



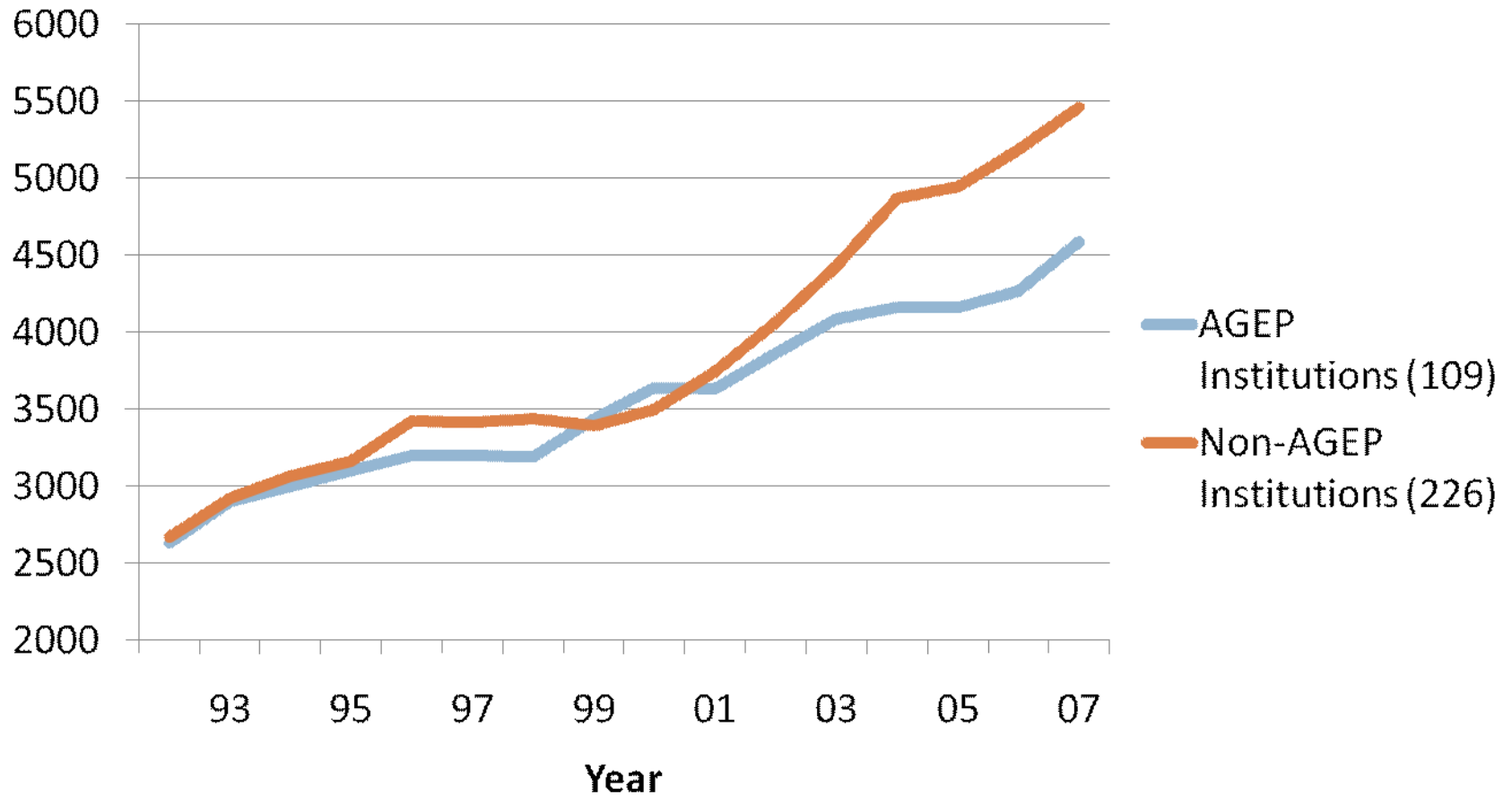
Graduate Enrollment of Hispanics in STEM Departments (Without Puerto Rican Institutions)

30



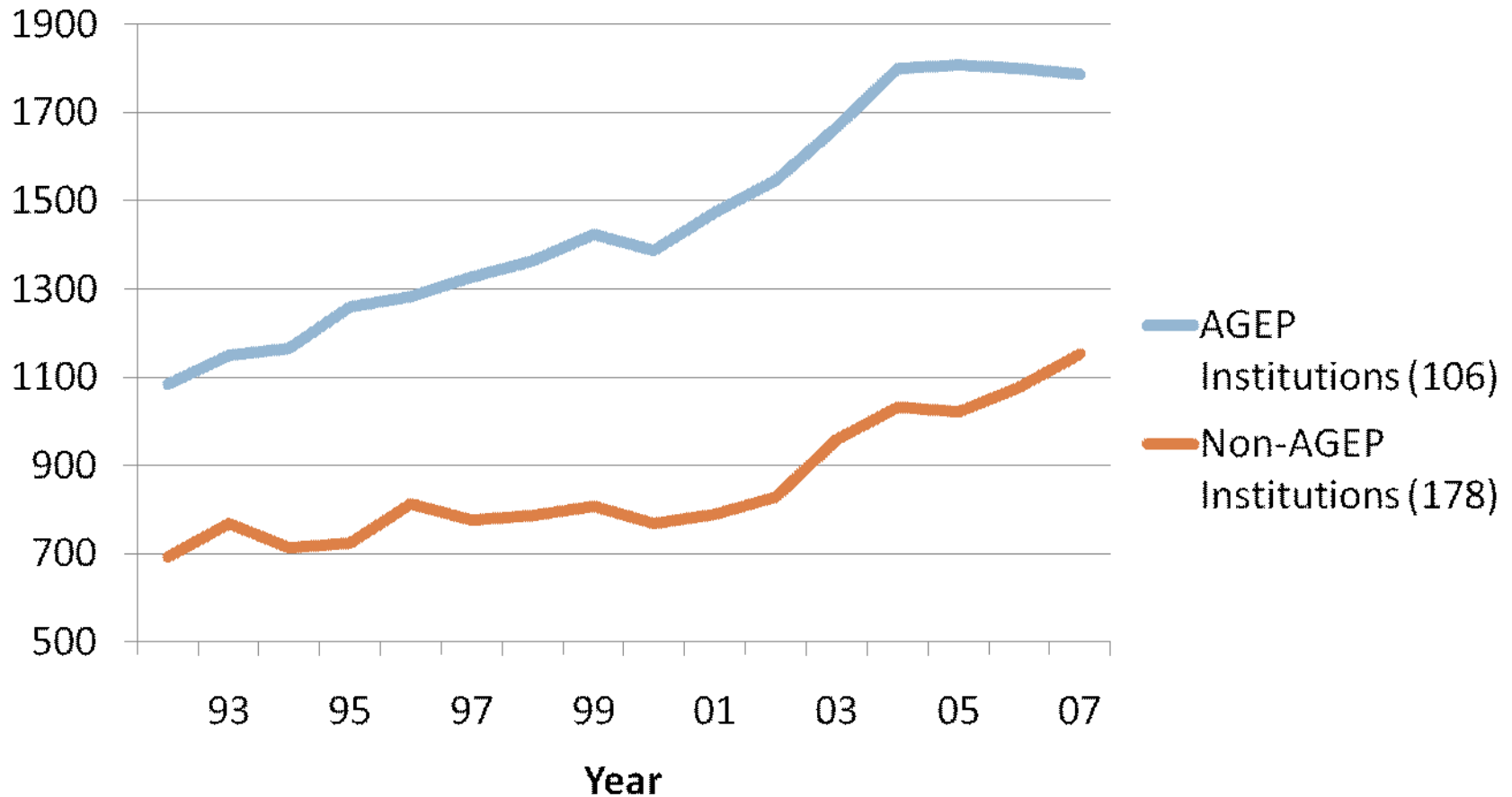
Graduate Enrollment of African Americans in STEM Departments

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Graduate Enrollment of URMs in Physical Science Departments

32

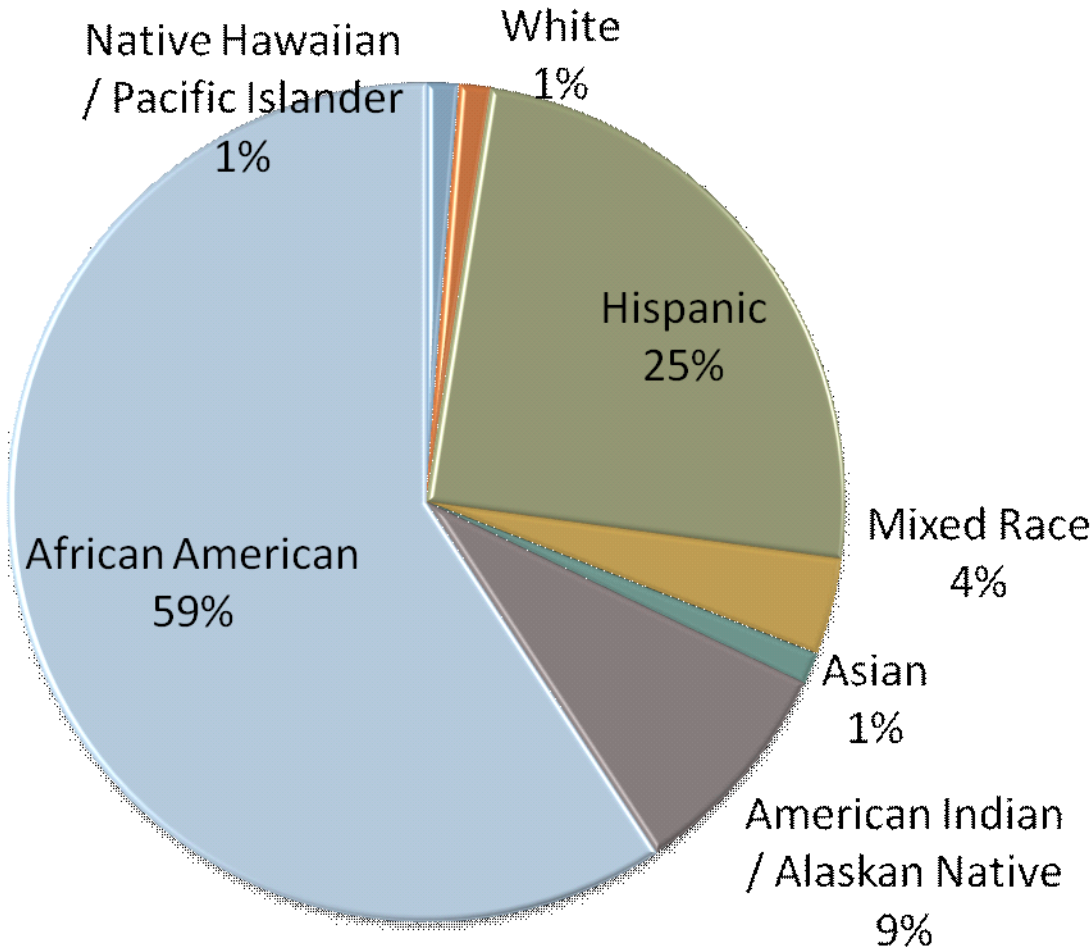


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Qualitative Data



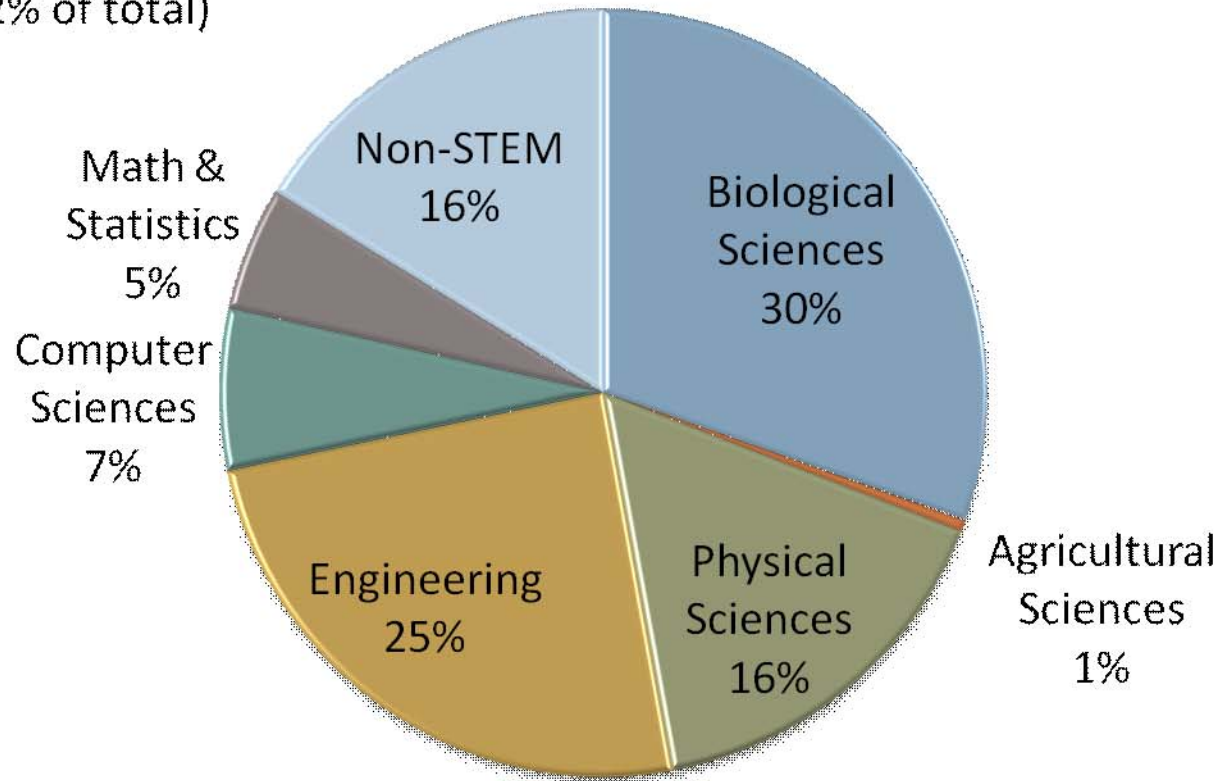
Interviewed Student Profile Summary: Race/Ethnicity



Interviewed Student Profile Summary: Discipline

35

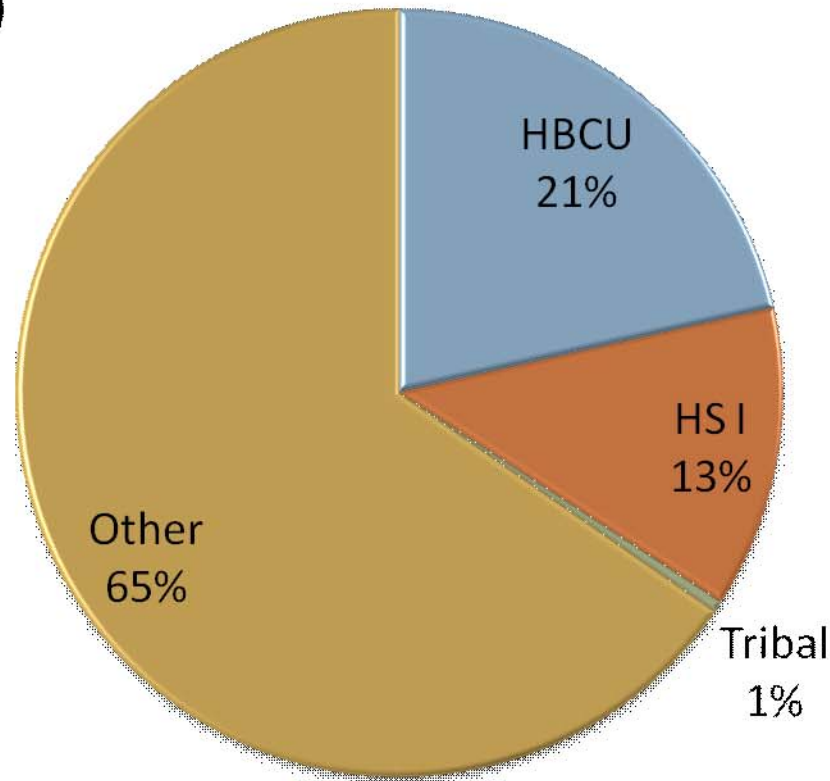
N = 191 (92% of total)



Interviewed Student Profile Summary: Undergraduate Institutions

36

N = 205 (99% of total)



Perceived Benefits of AGEP

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- ❑ Staff perceptions
 - ❑ Enhances recruitment activities
 - ❑ Continues pipeline built by programs such as McNair, Sloan, LS-AMP, etc.
 - ❑ Encourages improved programming supports for all students, not just URMs
- ❑ Student perceptions
 - ❑ Financial support for conferences, jump-start research, assistantships
 - ❑ Academic supports (e.g. pre-entry research opportunities, ongoing workshops, interactions with faculty)
 - ❑ Social supports (e.g. meeting other students, community of interest)



Perceptions of Alliance Structure

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- ❑ Benefits
 - ❑ Systematic approach to recruiting and retaining URMs
 - ❑ Sharing ideas and best practices across campuses
 - ❑ Leveraging resources across campuses
- ❑ Drawbacks
 - ❑ Perceived inequitable distribution of funds
 - ❑ Unmet need for full-time AGEP leadership on some campuses
 - ❑ Campus programming is often in silos



Reported Obstacles to AGEP Implementation

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- ❑ NSF funding challenges
 - ❑ Stalled momentum
 - ❑ Campus programming interrupted or cancelled
 - ❑ AGEP administrative positions left vacant
 - ❑ Program perceived as unstable on some campuses
- ❑ Limited student mobility for cross-campus activities
- ❑ General economic downturn on campuses limits some support



Pipeline to the Professoriate

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- ❑ AGEP Faculty:
 - ❑ Often make PhD completion the goal of AGEP, not necessarily students' entering the professoriate
 - ❑ Encourage careers in many areas, not just professoriate



Pipeline to the Professoriate:

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- ❑ Students overall have an interest in academic careers
 - ❑ Opportunity to teach and mentor in STEM disciplines
 - ❑ Opportunity to teach and mentor URMs in STEM disciplines
 - ❑ Freedom to conduct their own research



Pipeline to the Professoriate:

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- ❑ Students do not necessarily want immediate tenure track jobs in a research institution
 - ❑ Research institutions sometimes unattractive
 - ❑ Steep competition for jobs
 - ❑ Work-life imbalance
 - ❑ Constant need for research funding
 - ❑ Teaching institutions serve “my community”
 - ❑ More money to be made in industry, teaching part-time



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Additional Data



Completion Data Description and Sources

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✍ PhD Completion Data from Survey of Earned Doctorates (SED)

- ☞ SED is a census: does not require any sampling
- ☞ Average response rate 1997-2007: 92%
- ☞ SED documentation available from <http://www.nsf.gov/statistics/srvydoctorates/>

✍ AGEP Institution Identification Process

- ☞ NSF Master List
- ☞ Official AGEP website (www.agep.us)
- ☞ Individual Alliances' Proposals and Direct Contact
- ☞ Alliances and their participating institutions which focus on a subject area other than STEM were not included



Enrollment Data Description and Sources

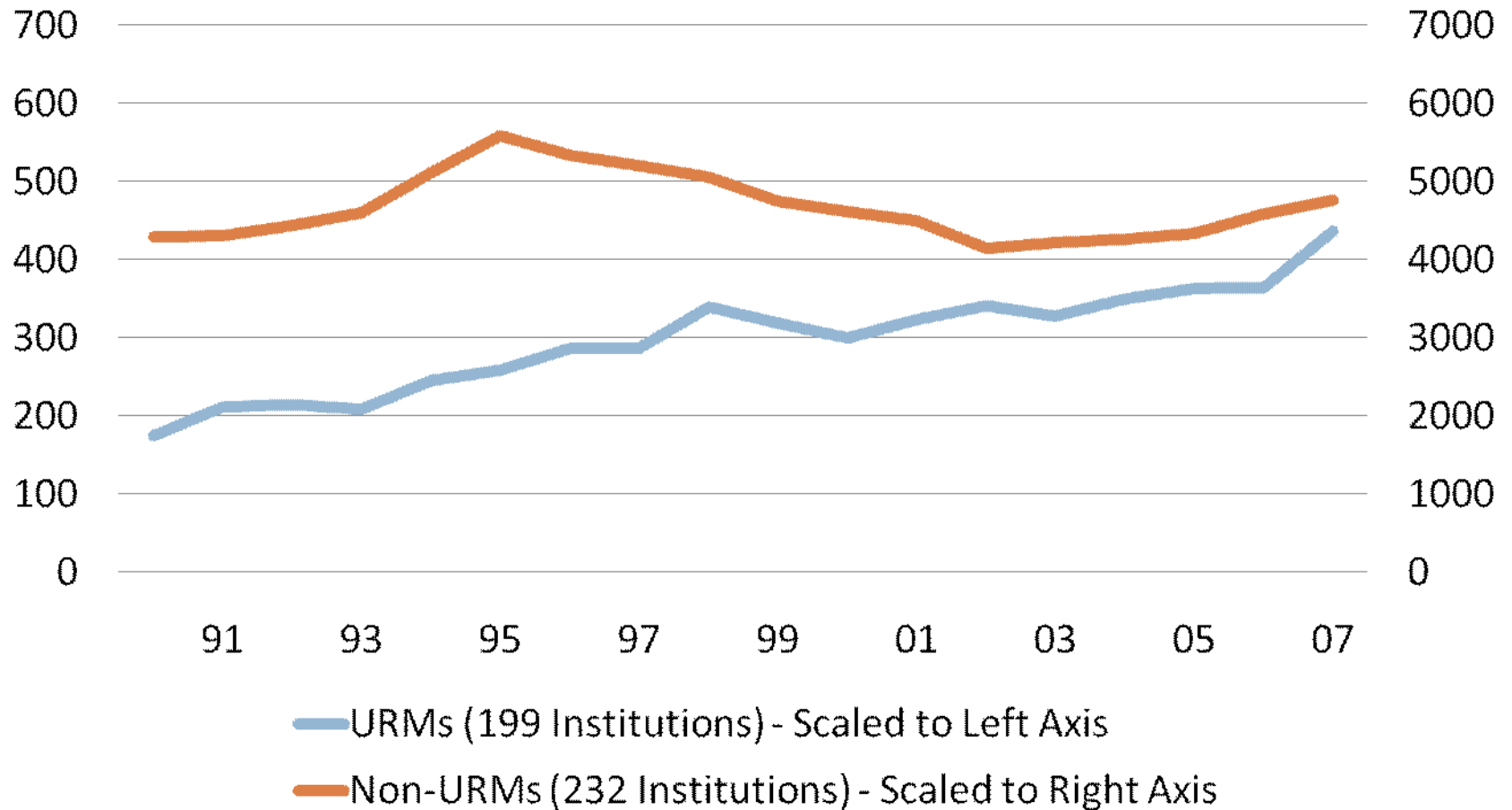
45

- ✍ Enrollment Data from Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS)
 - ☞ Data are collected separately for each reporting unit (academic department or program, research center, or health facility)
 - ☞ 2004-2007 Average Response Rate: 95% (complete) 2%(partial)
 - ☞ GSS documentation available from www.nsf.gov/statistics/srvygradpostdoc/
- ✍ AGEP institutions, URMs, and STEM disciplines defined as for Completion Data



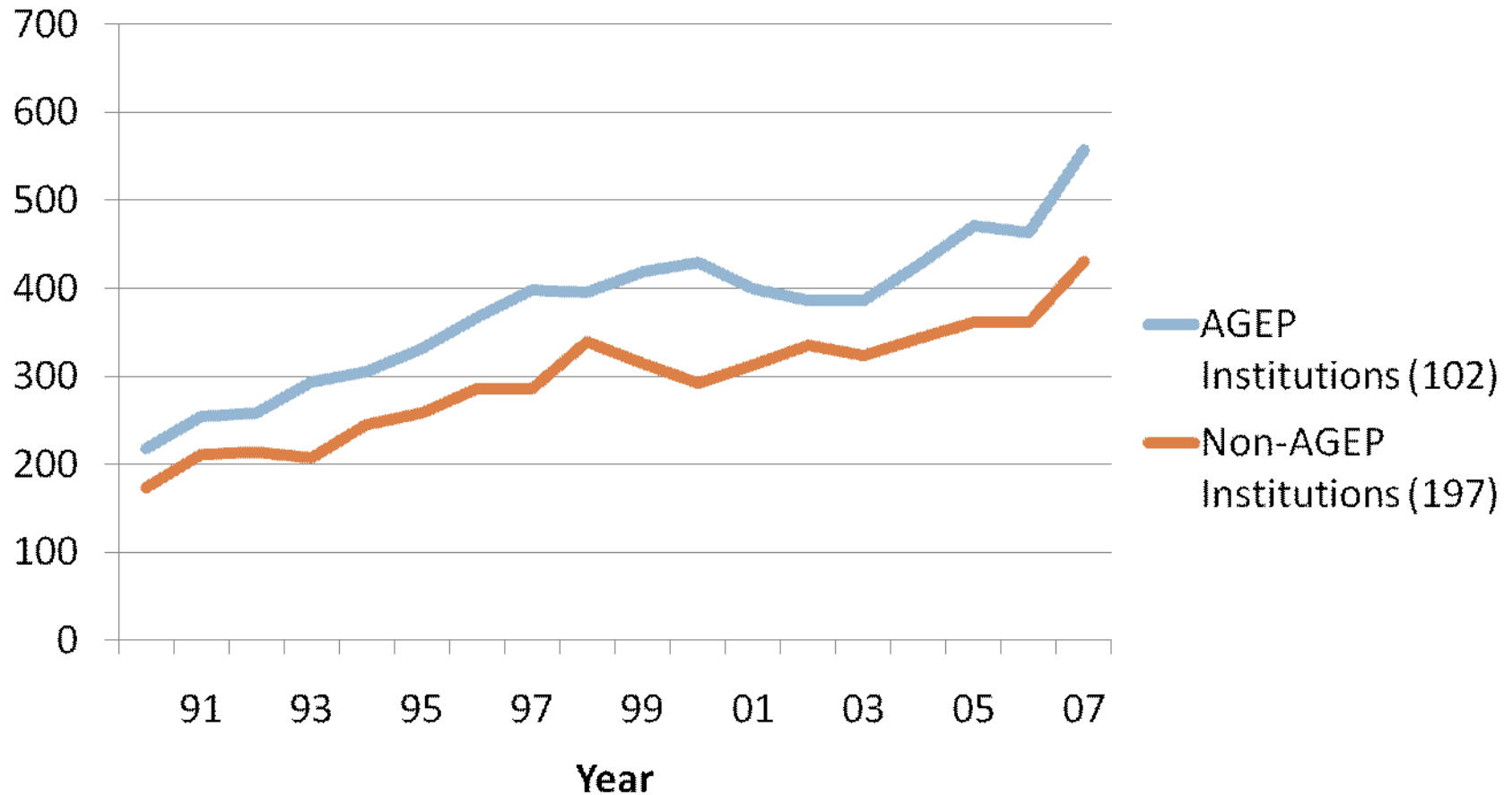
Completion of STEM PhDs at Non-AGEP Institutions, URM and Non-URM

46



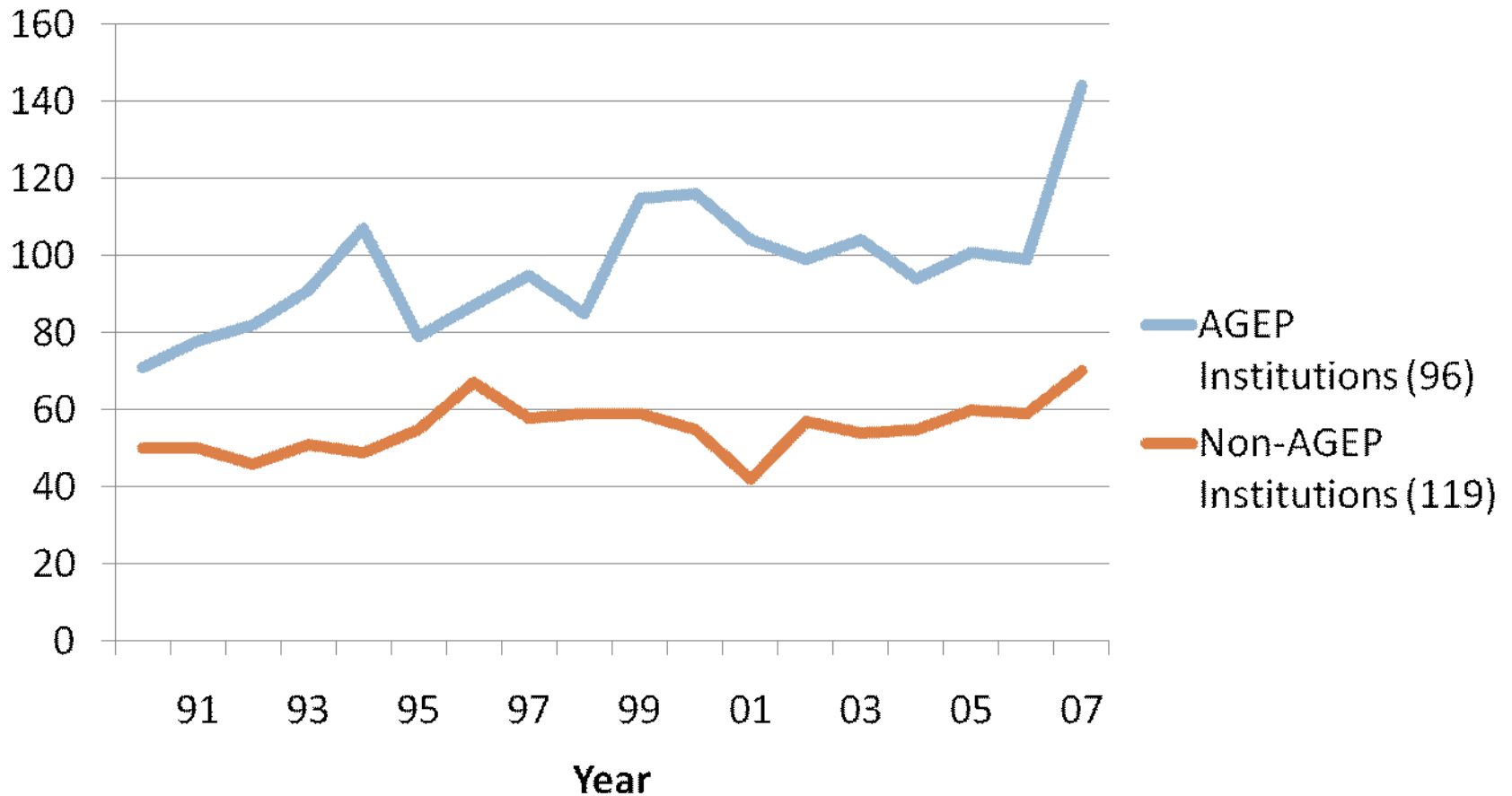
Completion of STEM PhDs by All URMs (Without Puerto Rican Institutions)

47



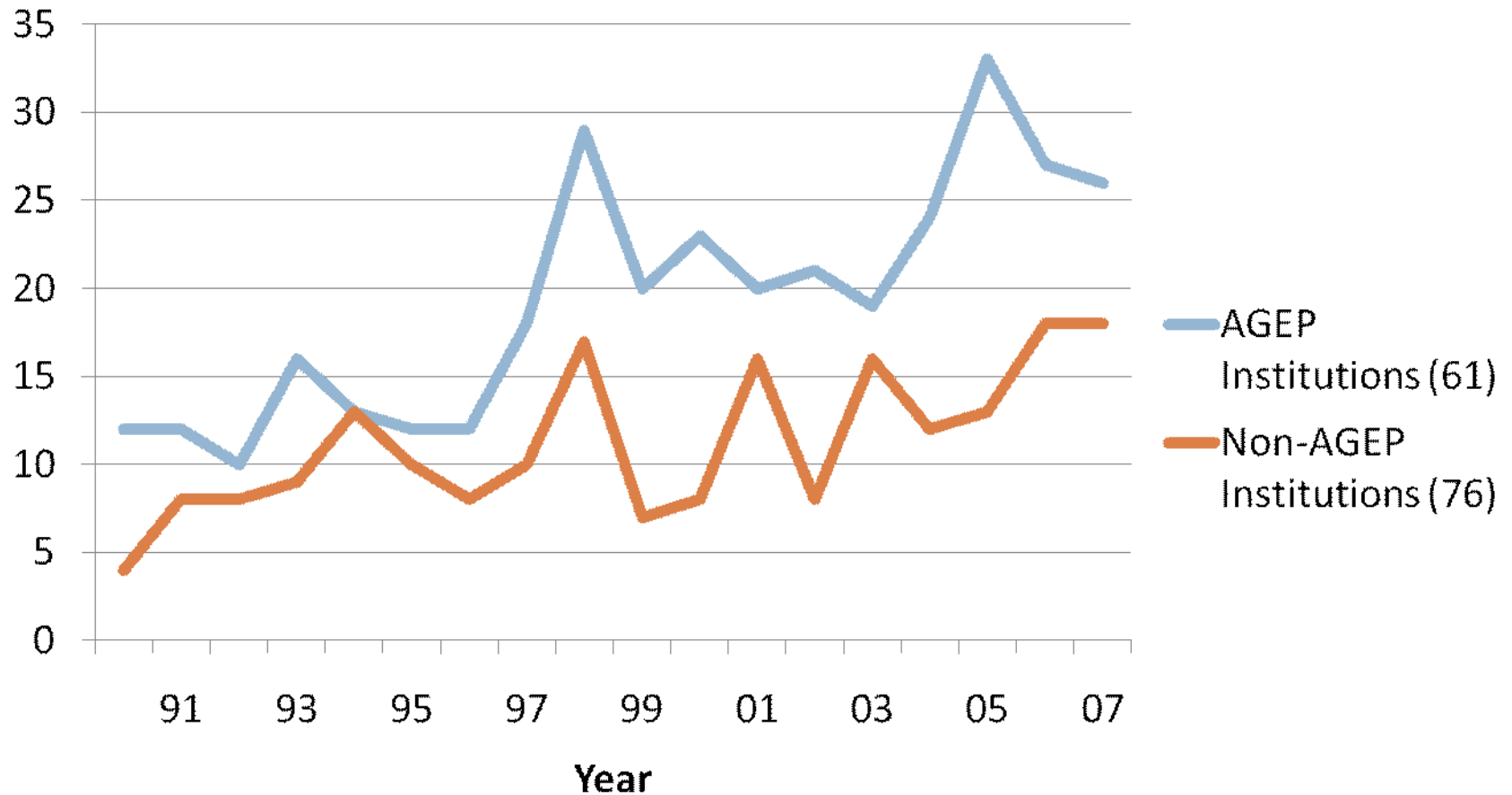
Completion of Physical Sciences PhDs by All URM_s

48



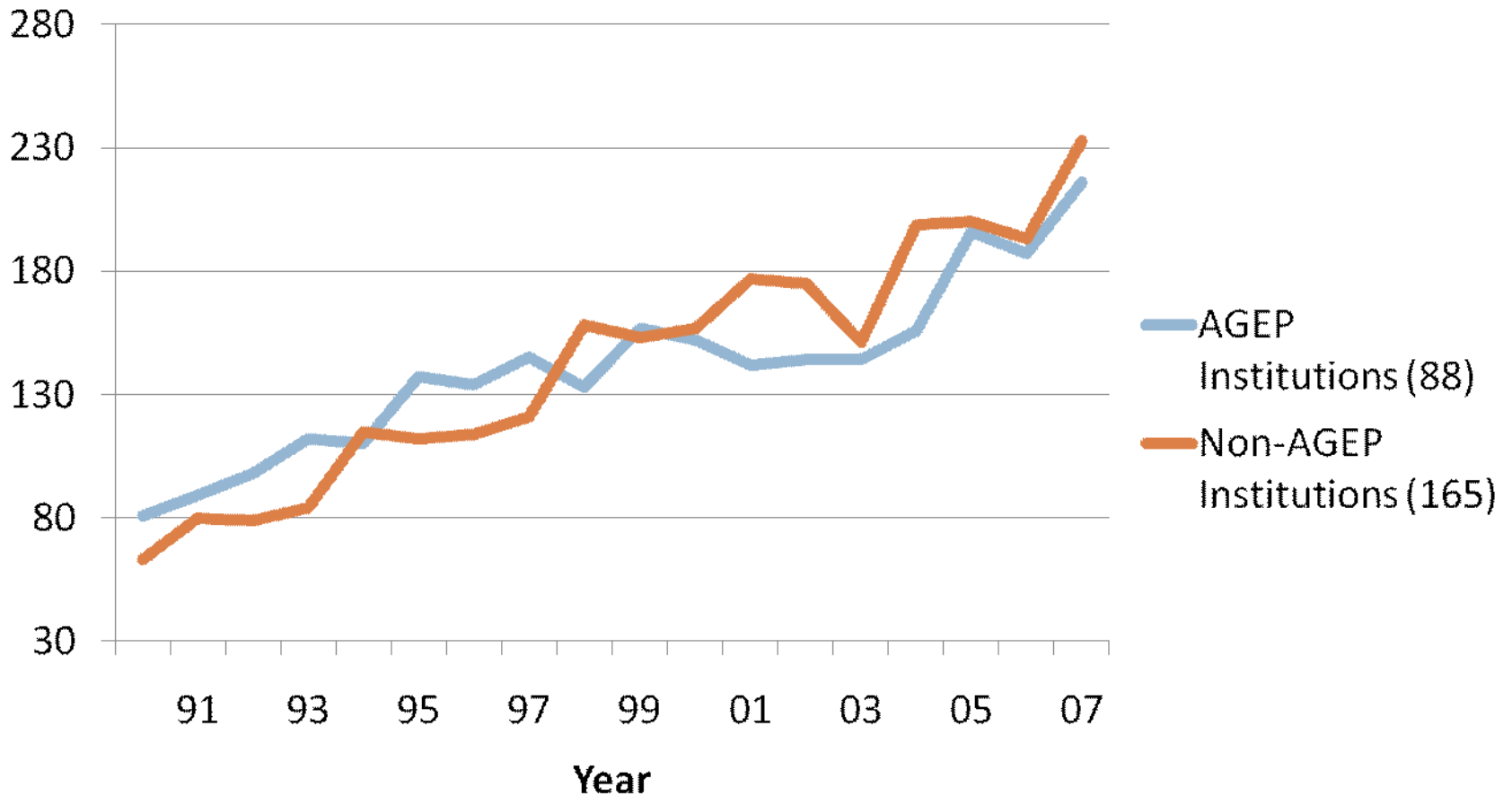
Completion of Math and Statistics PhDs by All URM_s

49



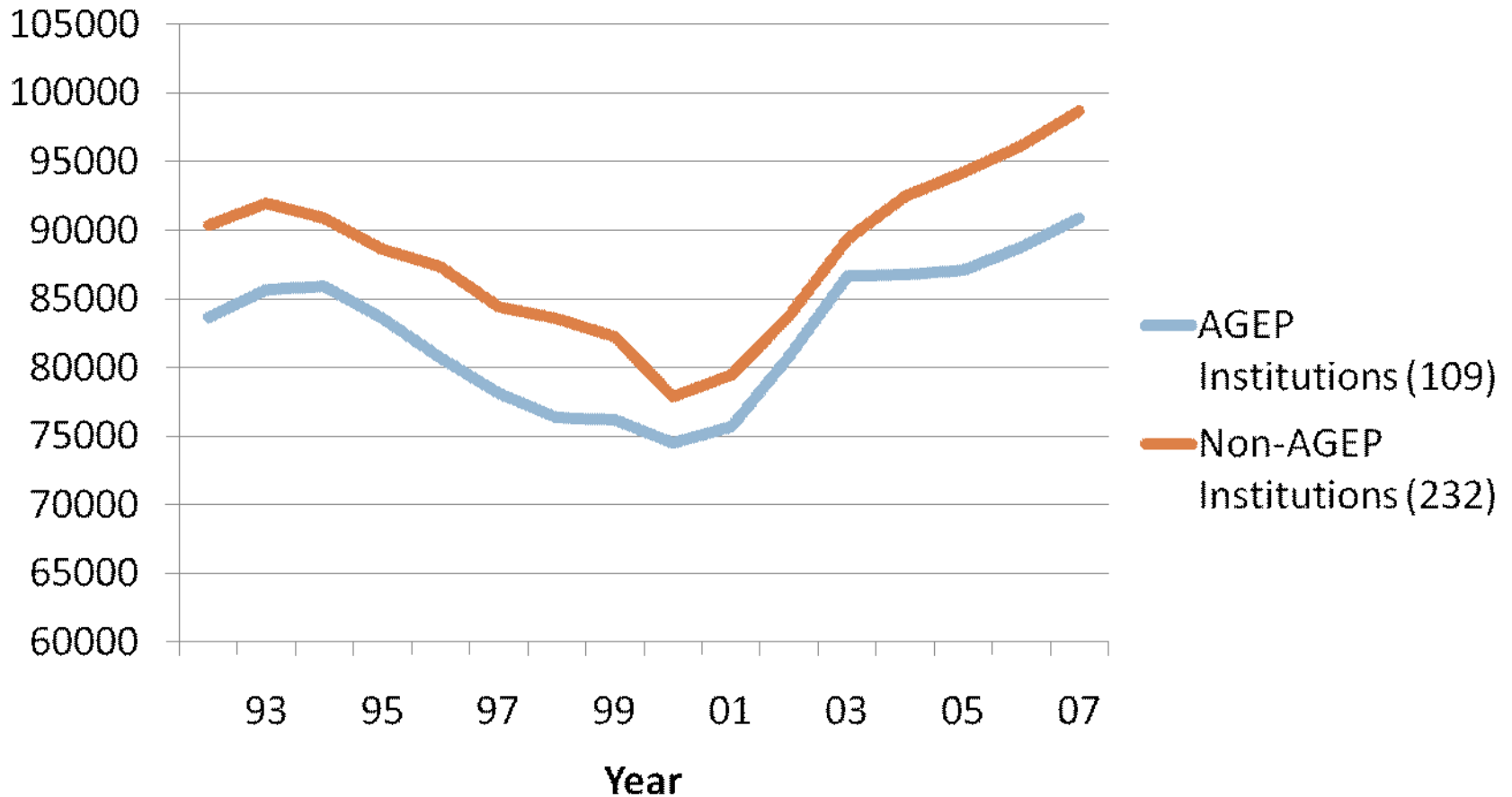
Completion of Biological Science PhDs by All URM_s

50



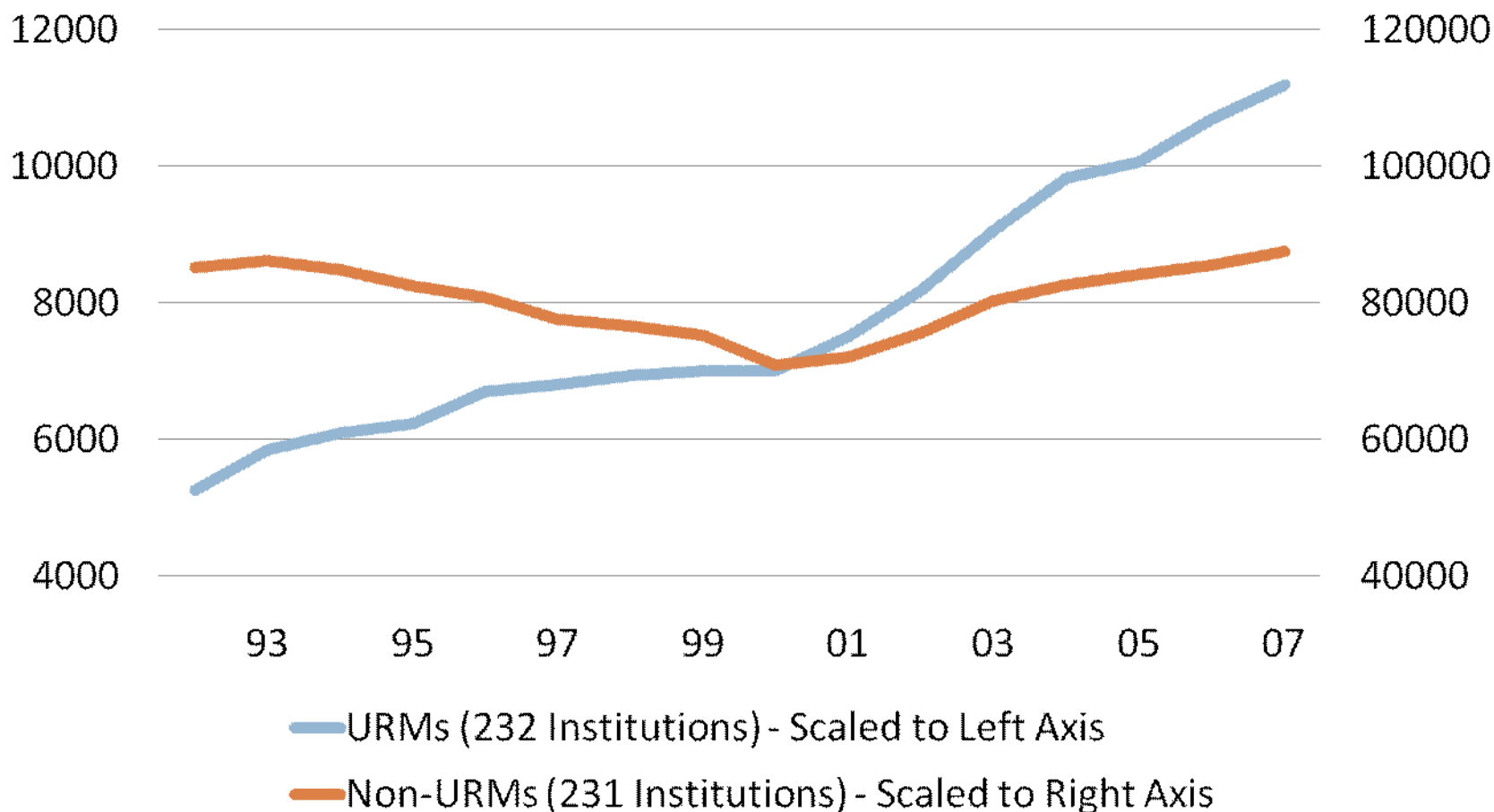
Total Graduate Enrollment in STEM Departments

51



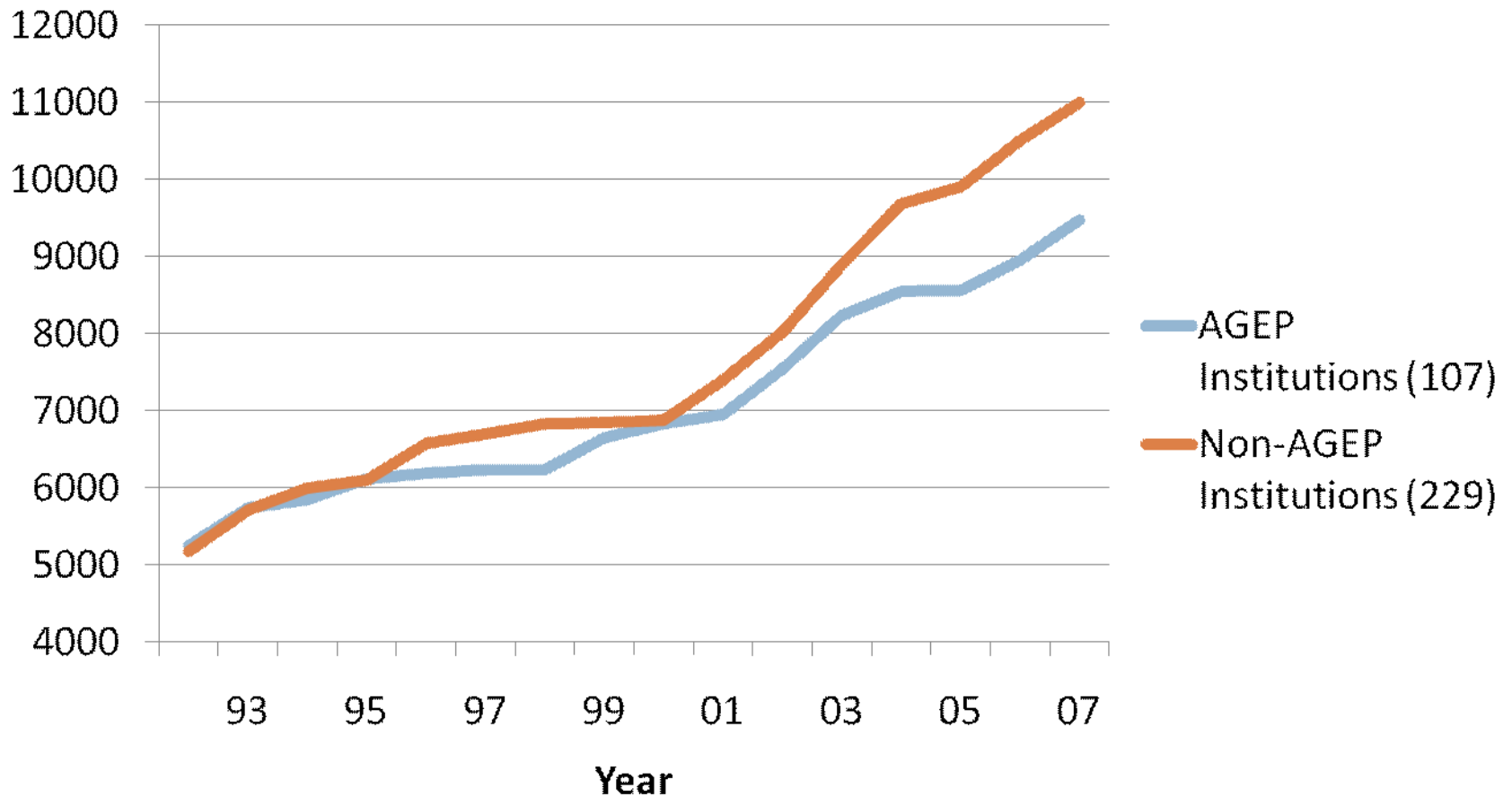
Graduate Enrollment in STEM Departments at Non-AGEP Institutions, URM and Non-URM

52



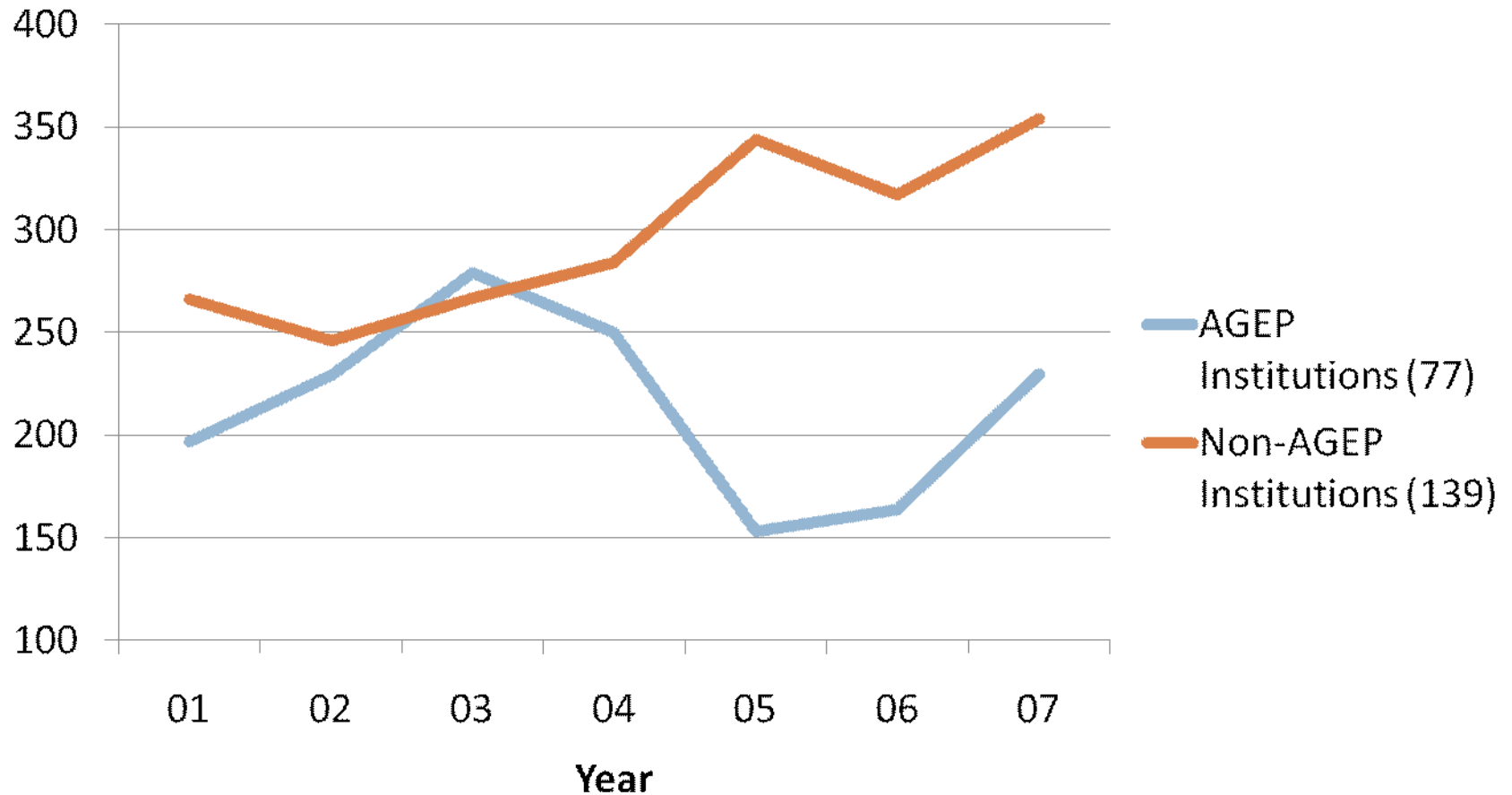
Graduate Enrollment of URM in STEM Departments (Without Puerto Rican Institutions)

53

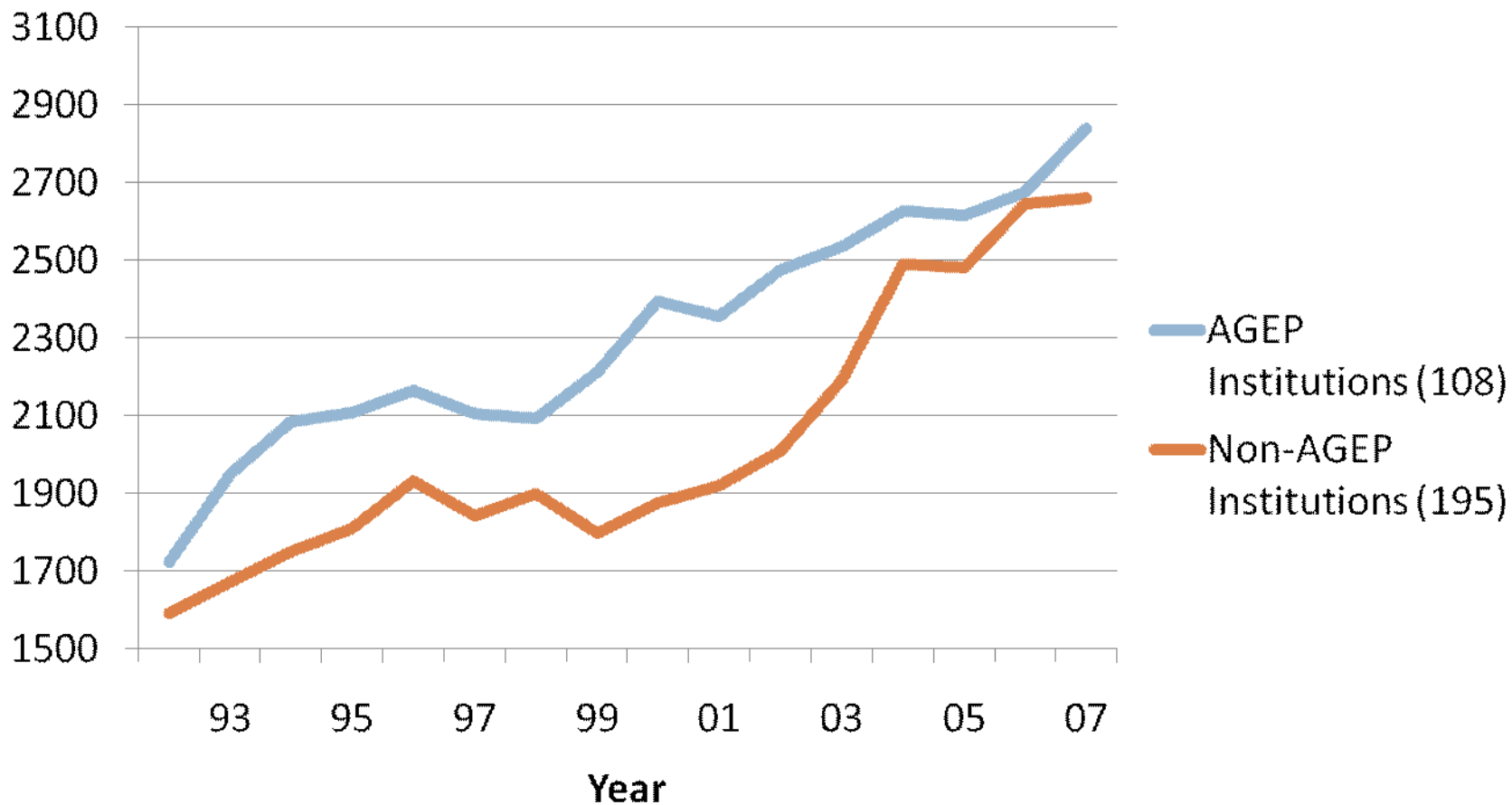


Graduate Enrollment of Native Hawaiian/Pacific Islanders in STEM Departments

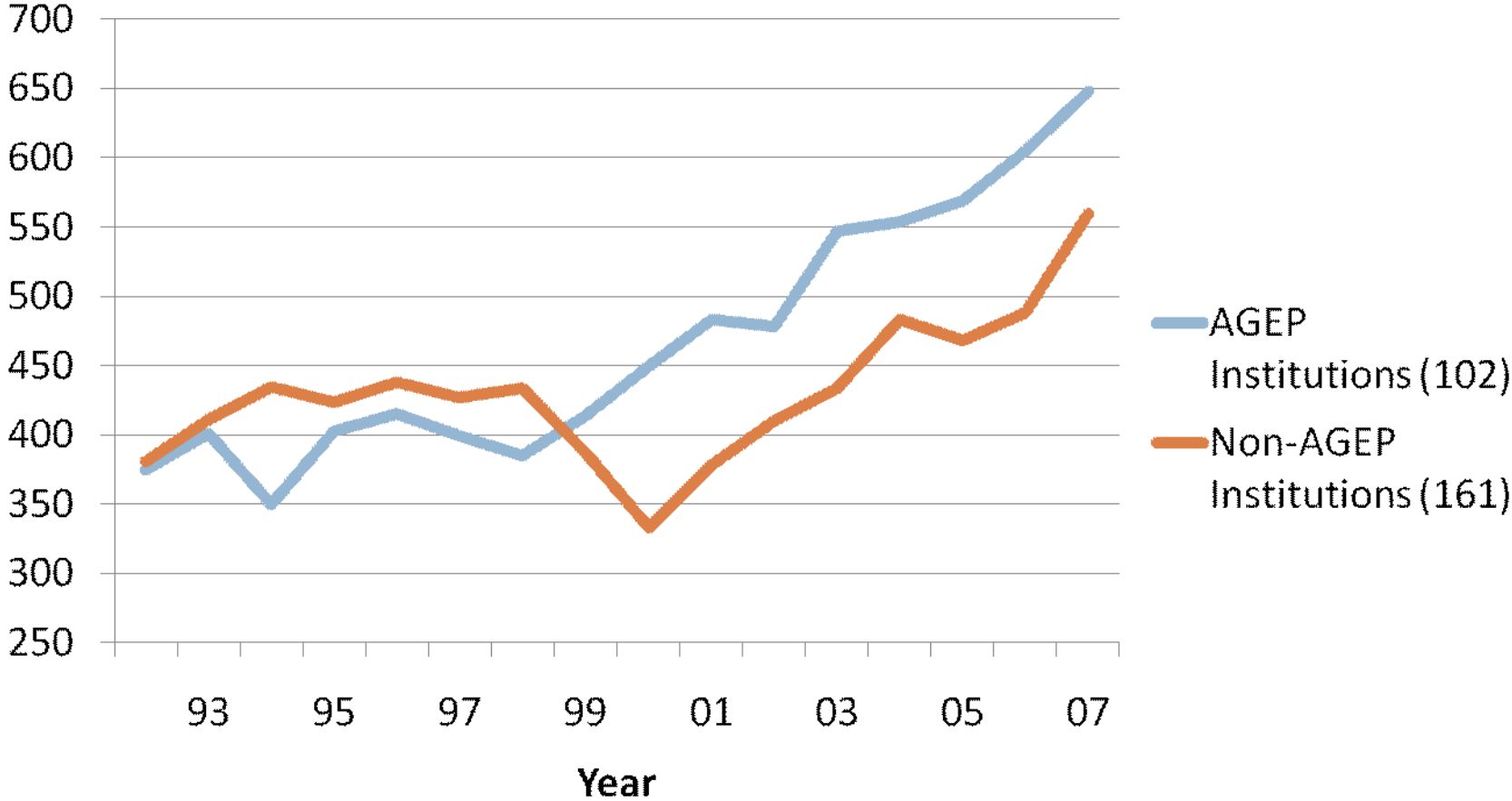
54



Graduate Enrollment of African Americans in STEM Departments (Excluding Biological & Computer Sciences)

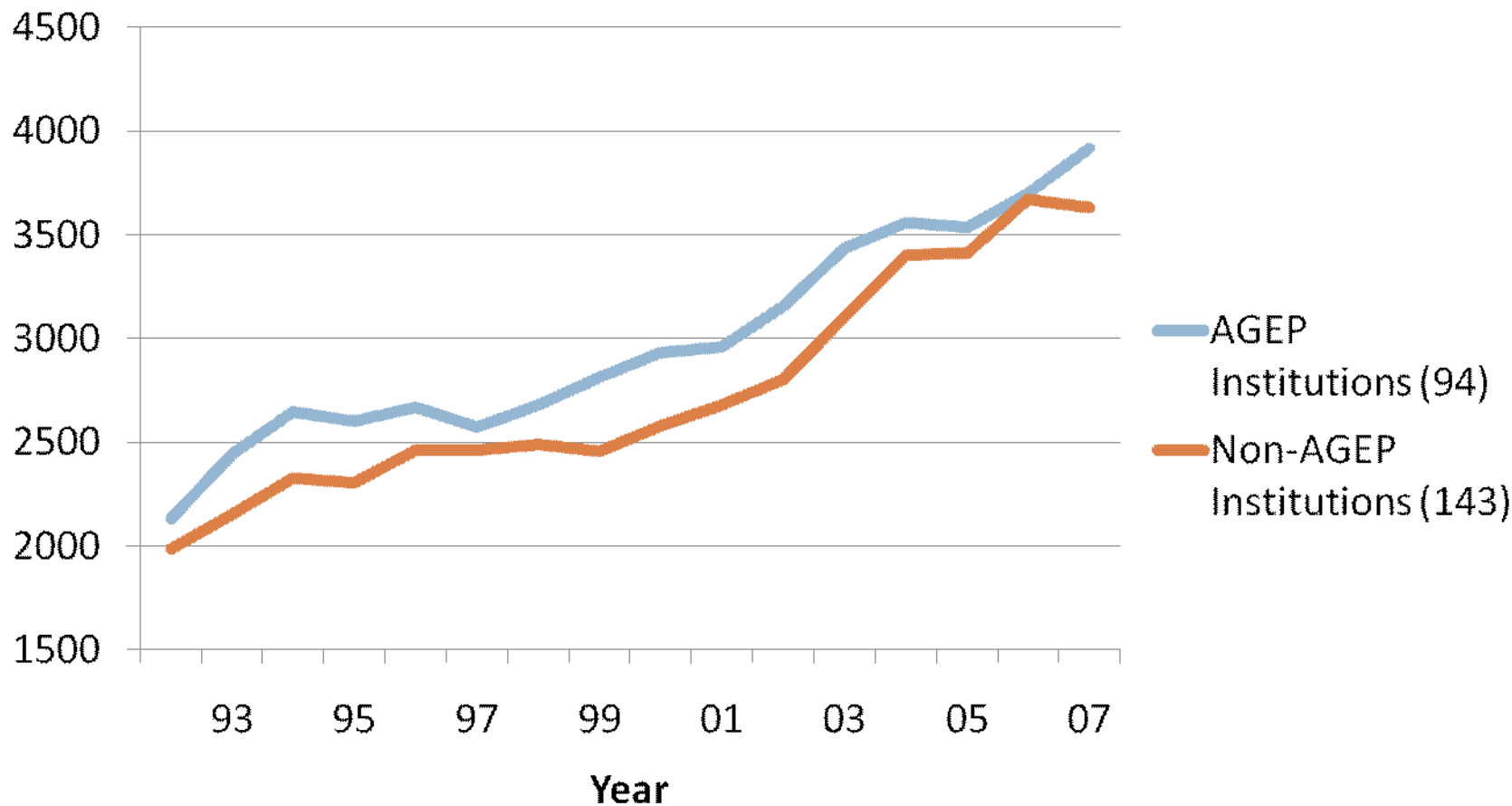


Graduate Enrollment of URM's in Math and Statistics Departments



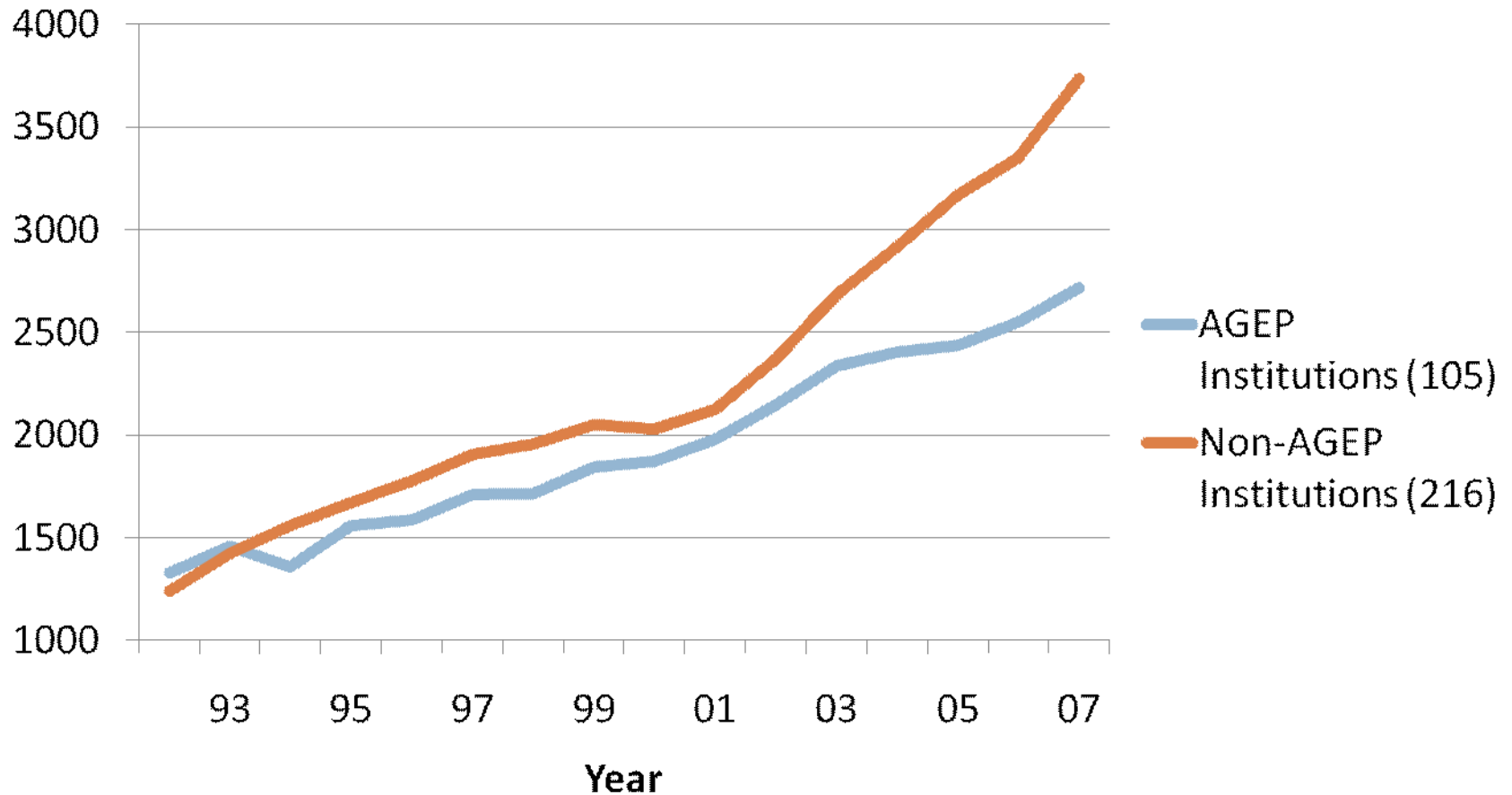
Graduate Enrollment of URMs in Engineering Departments

57



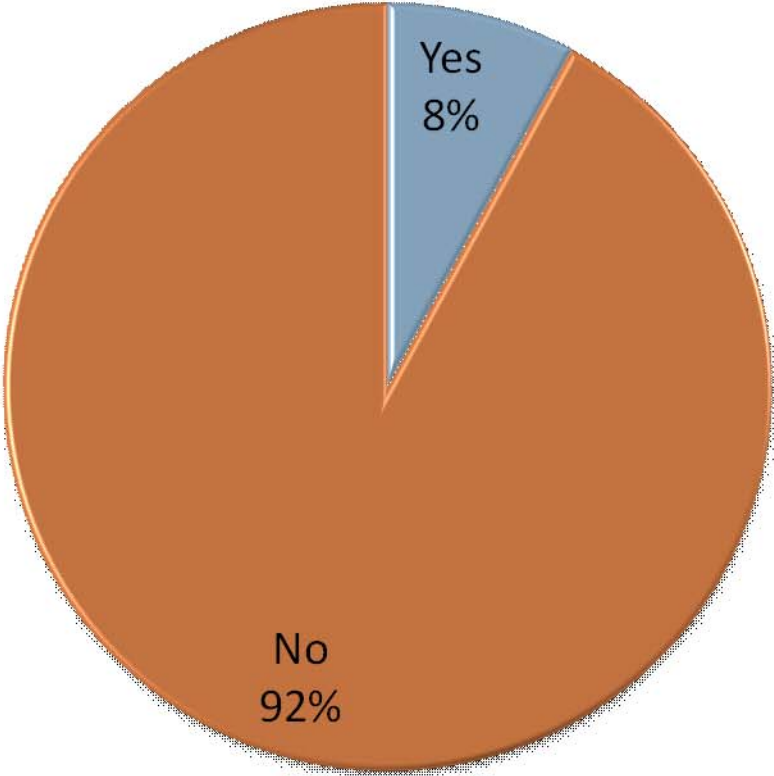
Graduate Enrollment of URM in Biological Science Departments

58



Interviewed Student Profile Summary: Immigrants

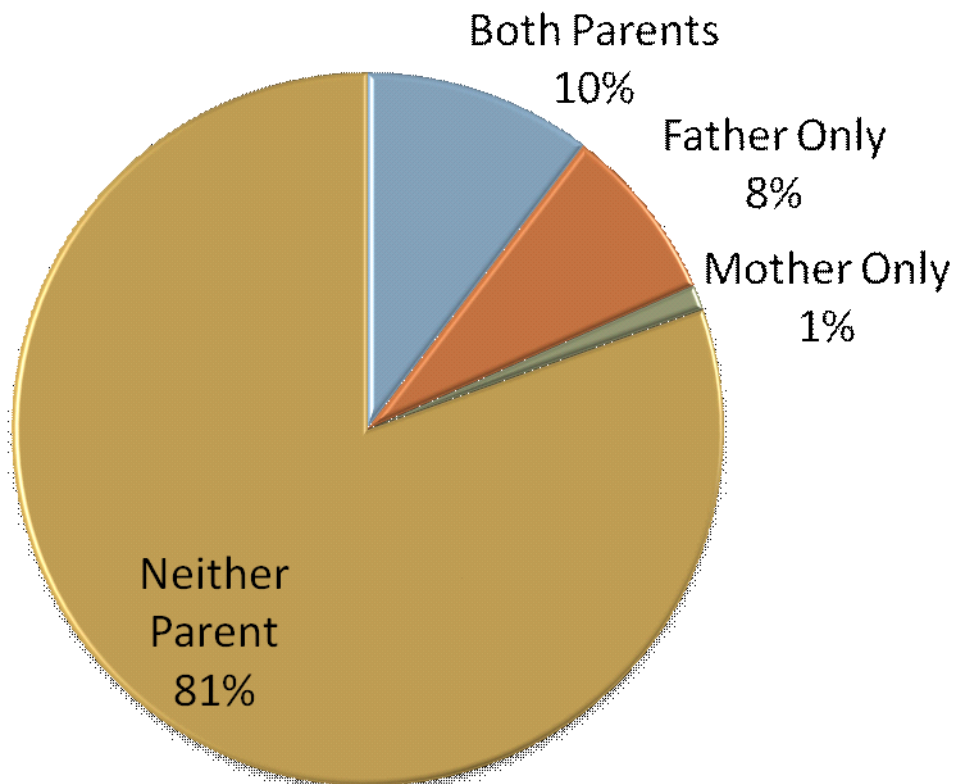
N = 88 (43% of total)



Interviewed Student Profile Summary: Parents' Characteristics

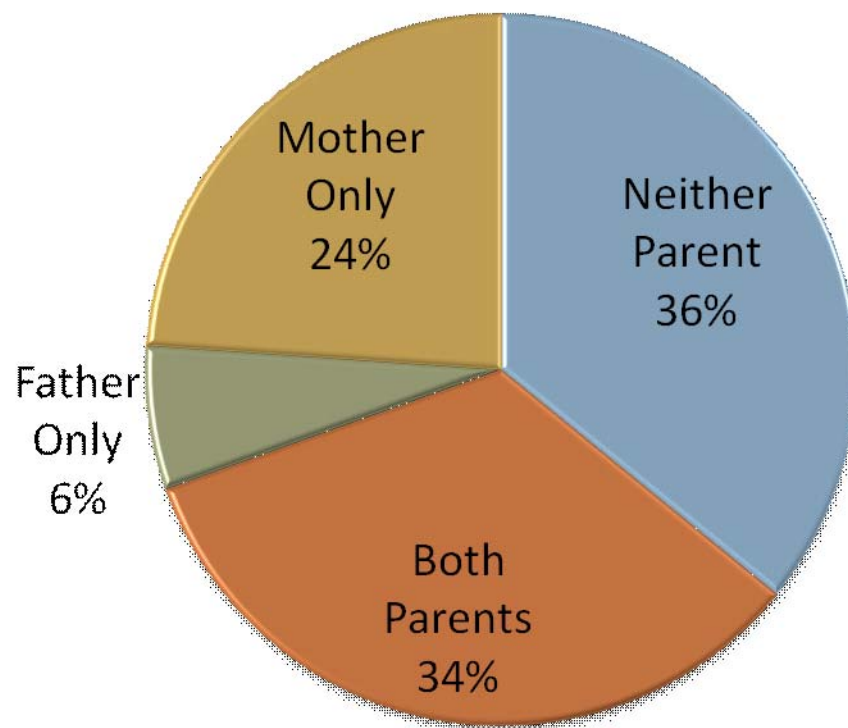
60

Immigrants



N = 87 (42% of total)

Attended College

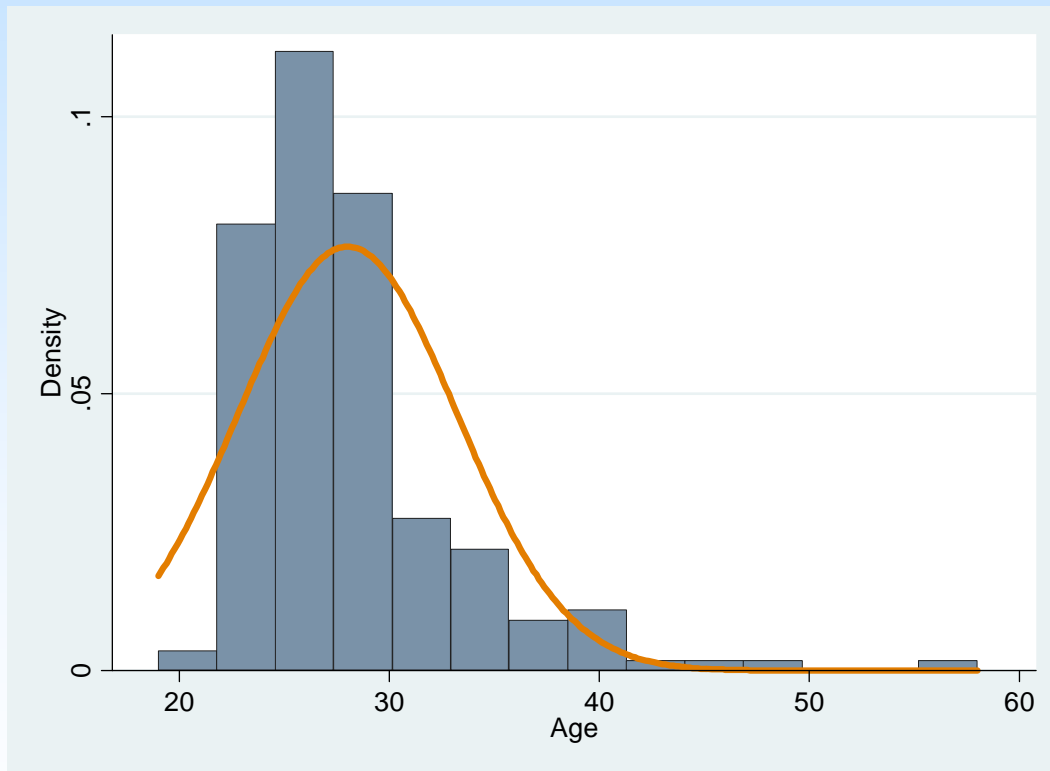


N = 92 (44% of total)



Interviewed Student Profile Summary: Age

61

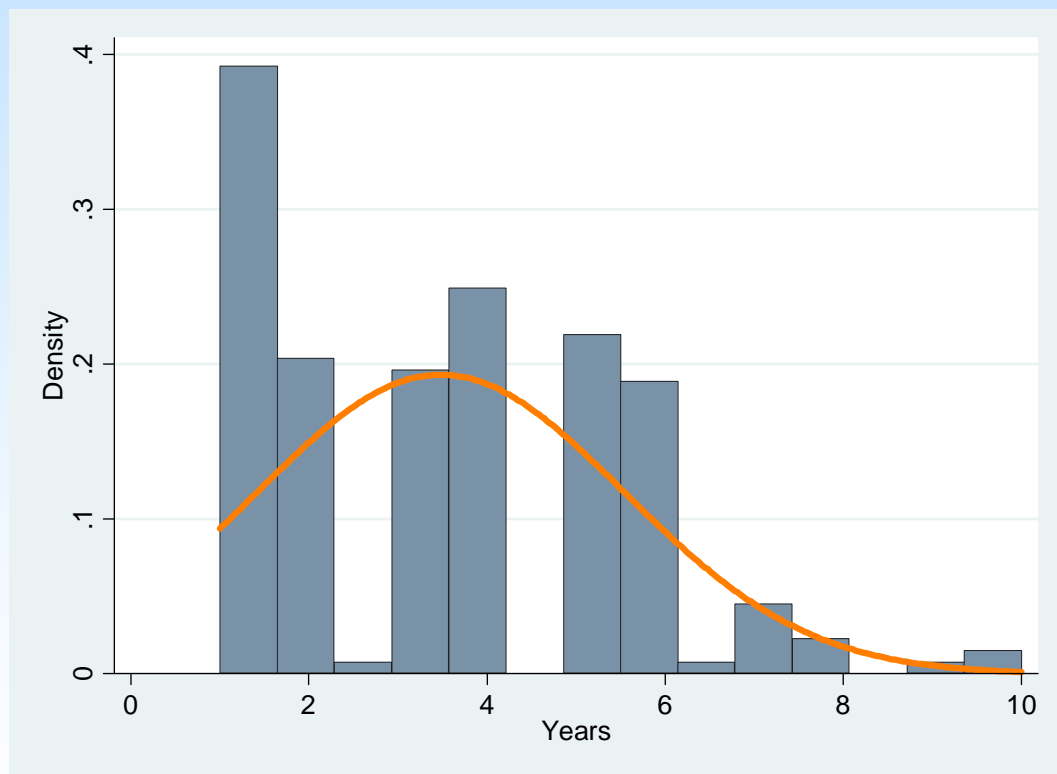


Average = 28
Range = 19 to 58
N = 196 (95% of total)



Interviewed Student Profile Summary: Years in Graduate Program

62



Average = 3.5
Range = 1 to 10
N = 206 (99% of total)

