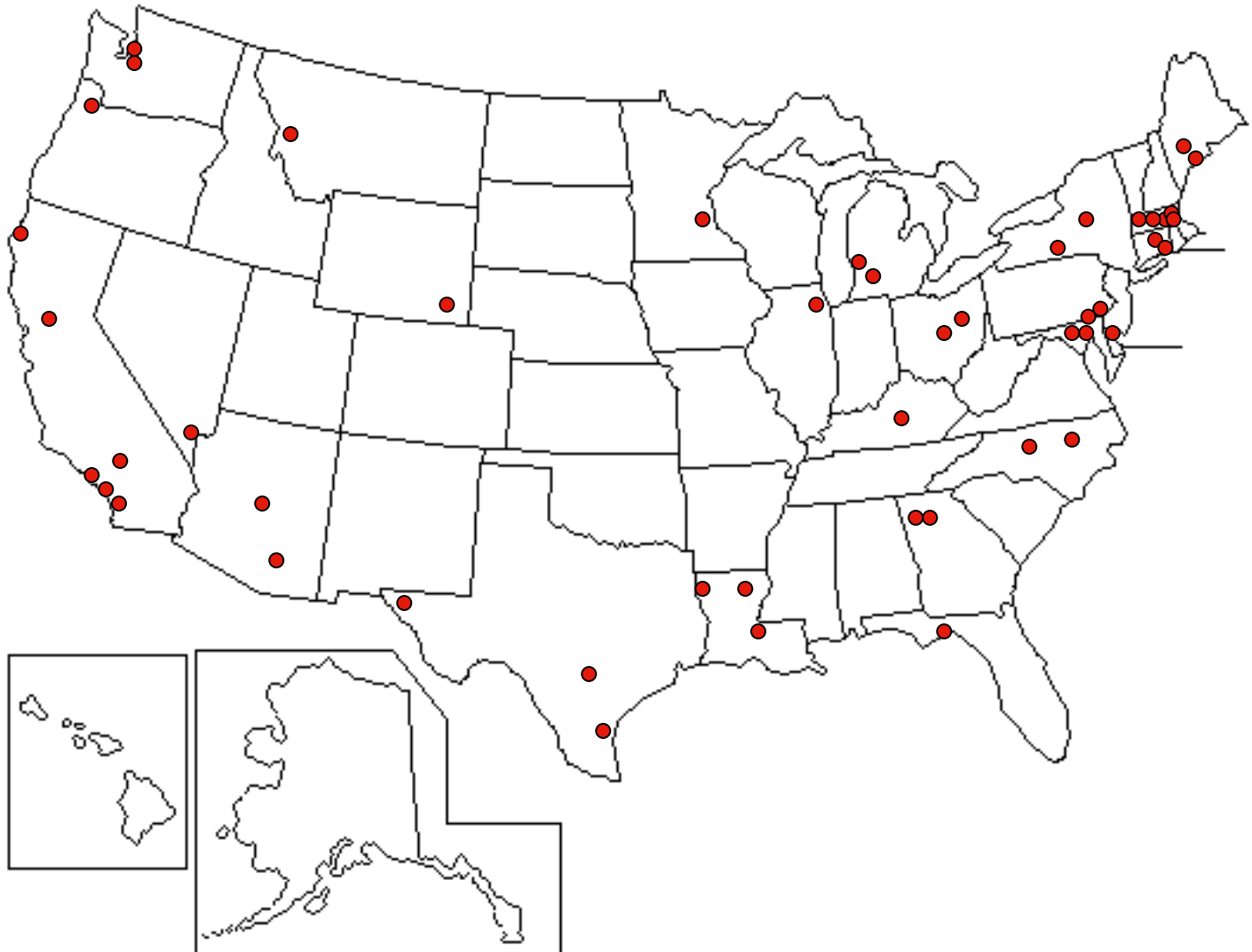


# **Student retention and success in undergraduate biology and chemistry programs**

D. Brodigan, P. Bruns, M. Cunningham, P. Dickinson,  
W. Raymond, M. Summers, M. Weir

Funding provided by HHMI, NIH, Harvard University,  
University of Louisiana-Monroe, and University of Washington

24 colleges and 25 universities  
from 24 states contributed data to this study



Data are from ***your*** institutions:

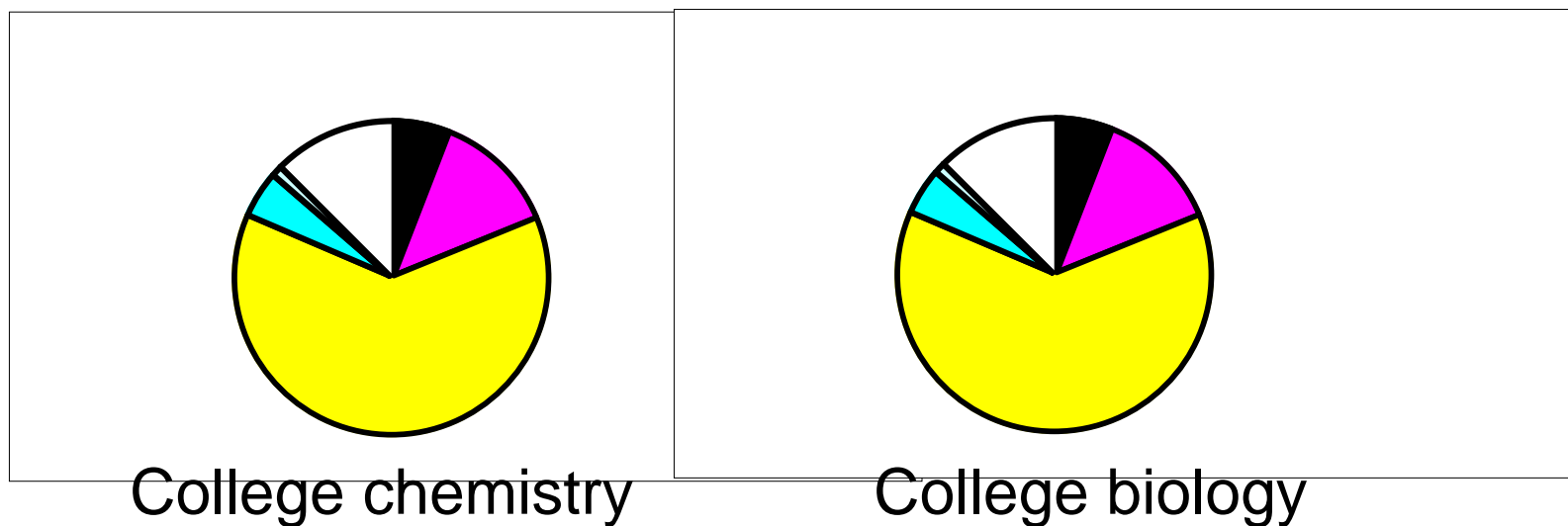
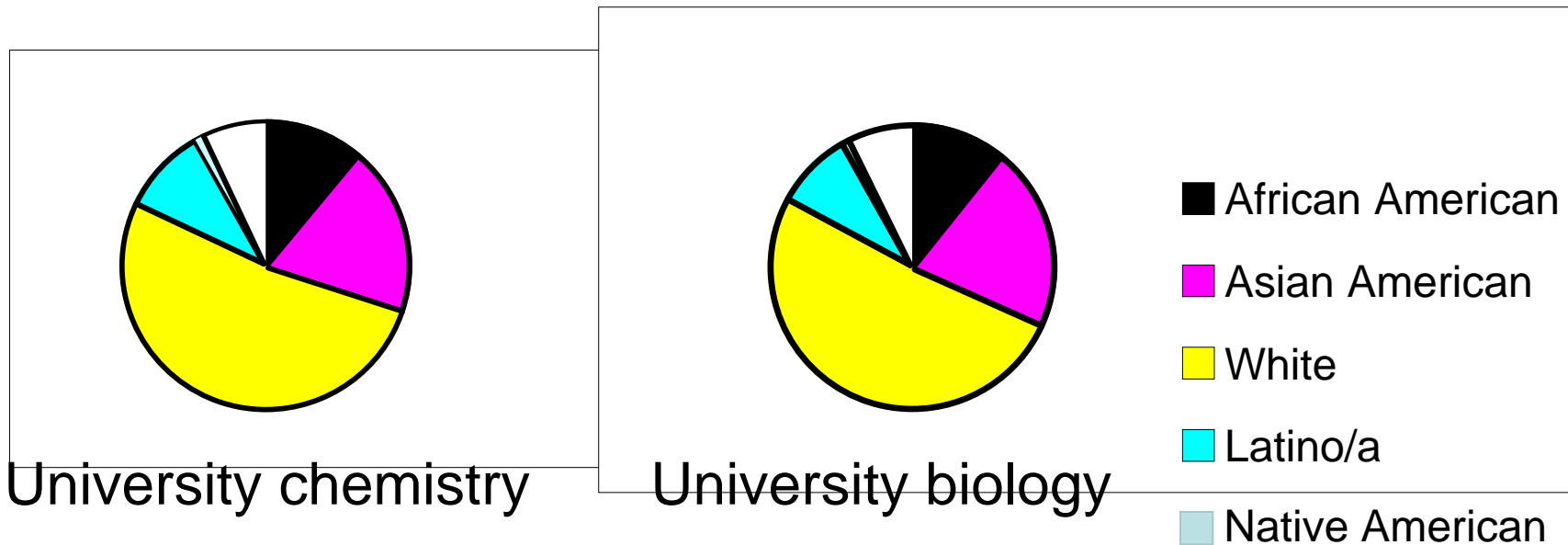
49 / 76 (64%) institutions  
that sent teams to one previous  
Diversity in Sciences Symposium

24 small colleges (all private)  
25 universities ( 20 public, 5 private)

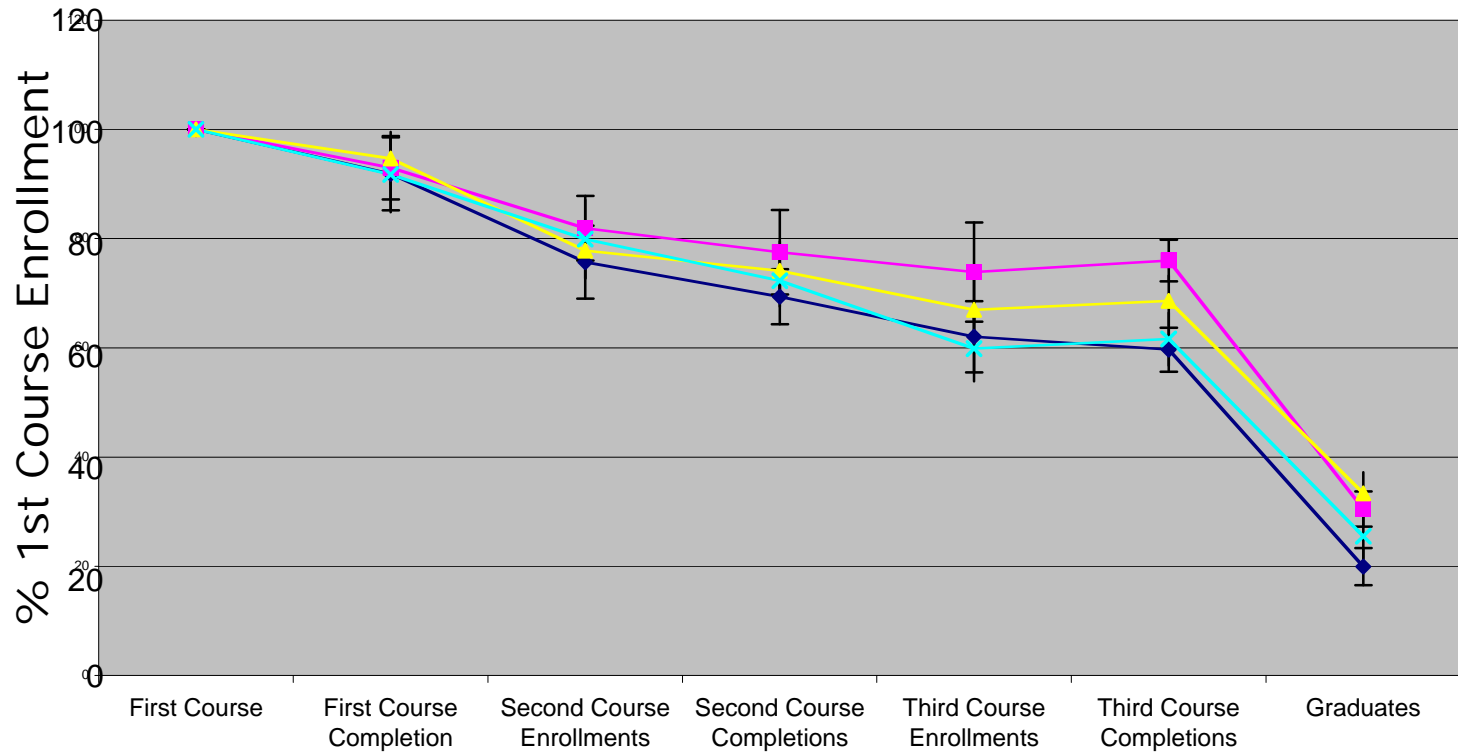
Academic years 2002/03 - 2005/06

Data represent averages of institutional averages;  
thus the analysis weighs each institution equally.

# Average % students enrolled in 1st gateway courses

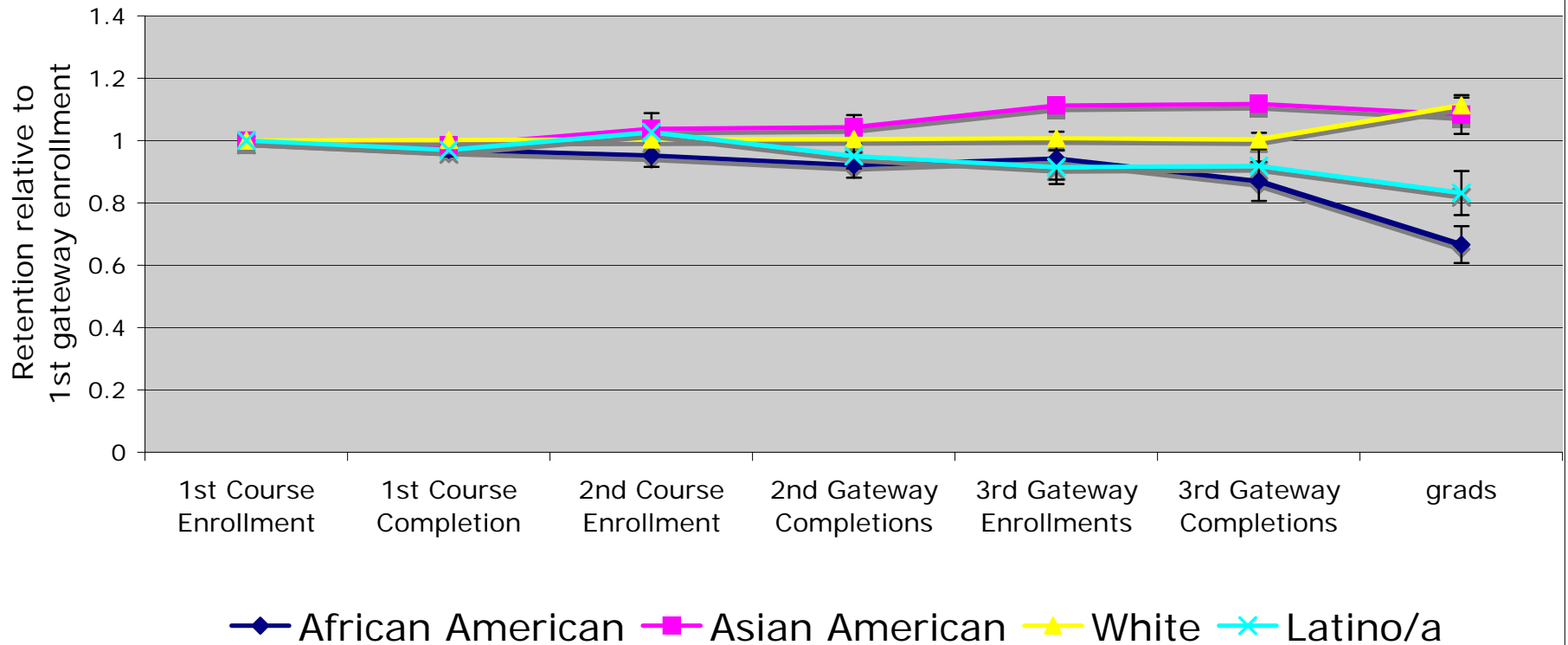


# University Biology: % 1st course enrollment



◆ African American    ■ Asian American    ▲ White    ✕ Latino/a

# University Biology: Retention relative to 1st gateway course enrollment

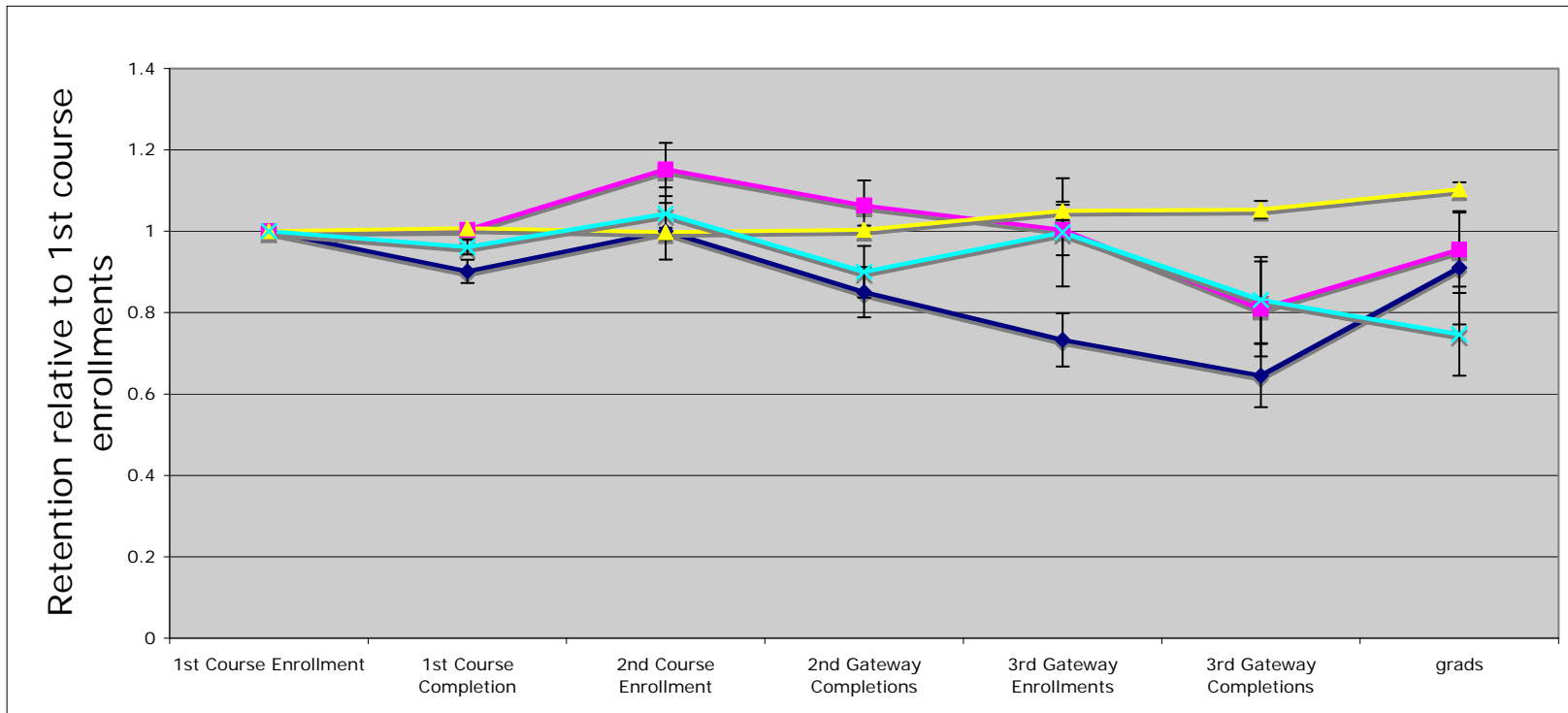


calculations: % subgroup at X stage / % subgroup in 1st course

## Conclusions for University Biology

- African American students are significantly underrepresented as biology majors (65% of 1st course enrollment percentage relative to 110% for Whites and Asian Americans)
- Latina/o students are significantly underrepresented as biology majors (80% of 1st course enrollment percentage)
- Underrepresentation may begin as early as second course completion

# College Biology: Retention relative to 1st gateway course enrollment

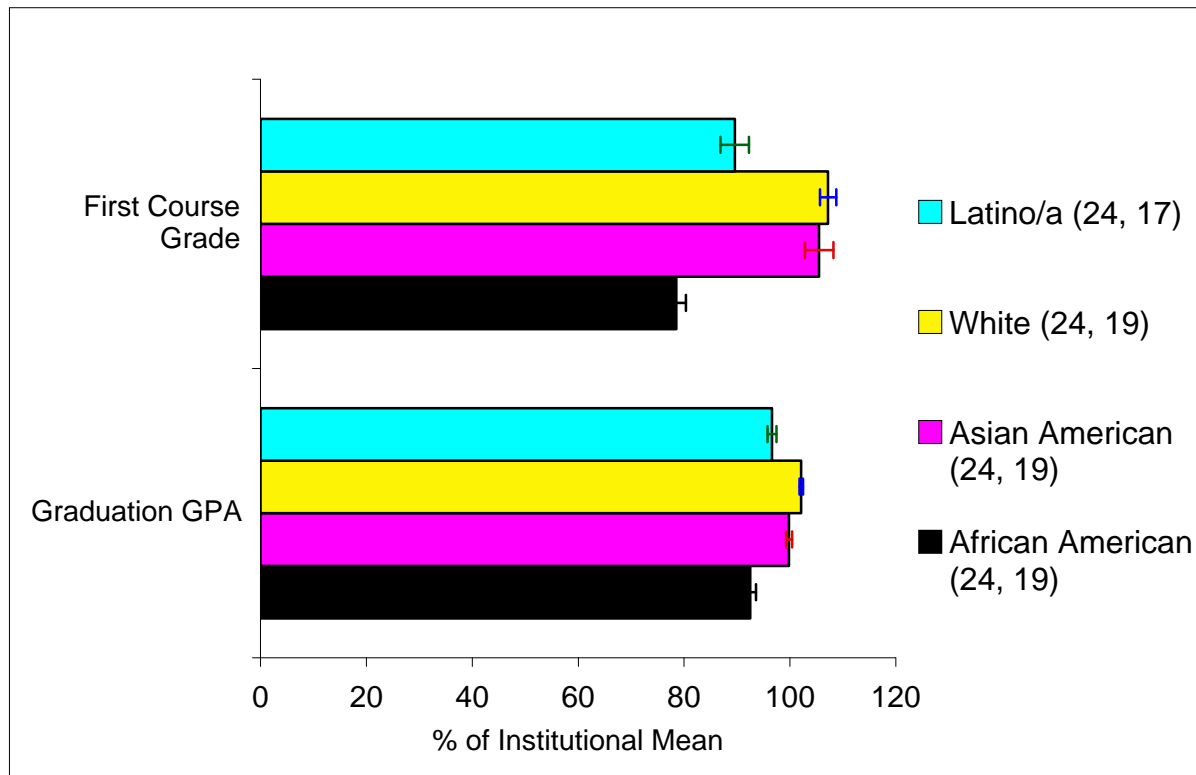


calculations: % subgroup at X stage / % subgroup in 1st course

## Conclusions: College Biology

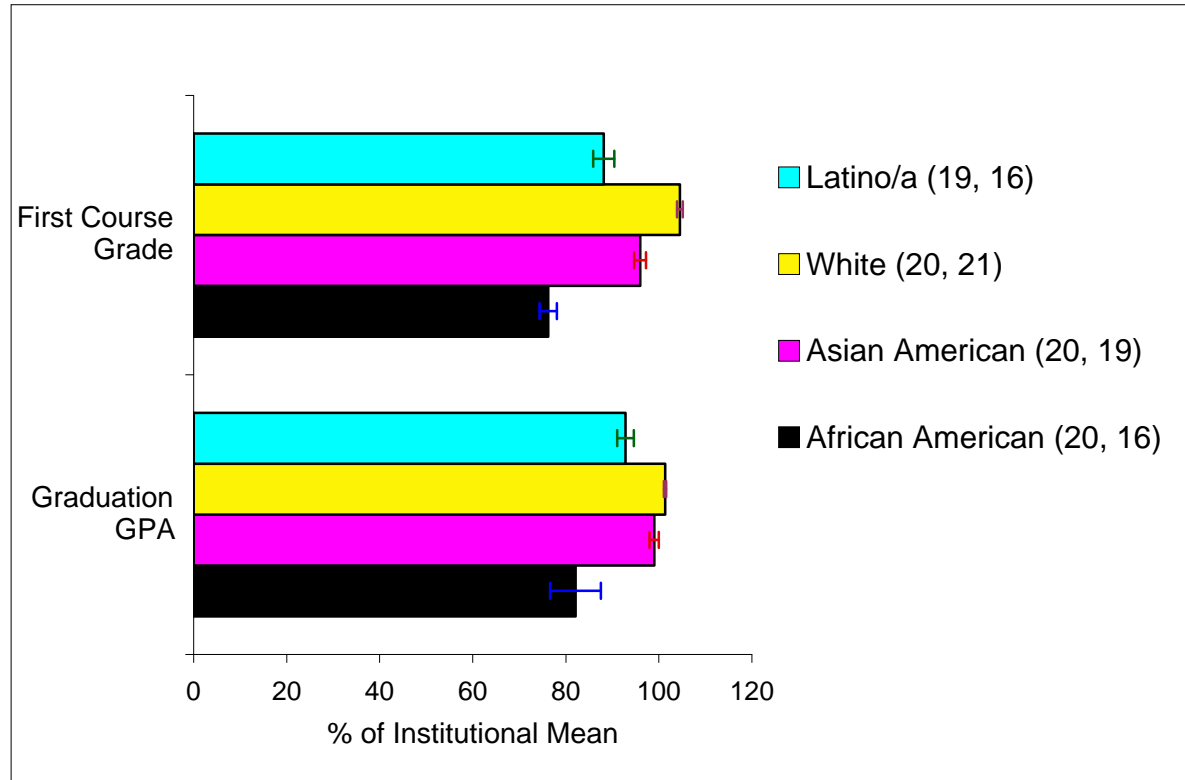
- African American and Latina/o students are significantly underrepresented as early as second course completion
- African American students are most dramatically underrepresented in the third biology course; this underrepresentation appears to decrease among biology majors
- Latina/o students are significantly underrepresented as biology majors

# University Biology grades



If institutional mean = 3.3,  
80% = 2.6;    90% = 3.0

# College Biology grades



If institutional mean = 3.3,  
80% = 2.6;      90% = 3.0

# What's missing

- “Excellence” or leadership data, such as research, peer mentoring, TAing, tutoring
- Data for impact of socioeconomic background: students who are first in their families to attend college? Can we agree on a definition for low-income families (e.g., Pell grant eligible)?
- Pre-enrollment interest in science: current data are inadequate (e.g., college applications). Use HERI first-year survey data?

Please use your  
individual institution's analyses  
to assess impacts of new programs