

Graduation and Retention Rates: Using Multiple Research Methods to Tell the Rest of the Story

2007 AIRUM Annual Conference

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Rationale

- Overview of retention and graduation rates
- Use IPEDS and CSRDE data to identify benchmarks
- Use NSC data to track students
- Identify factors related to retention
- Predict academic deficiencies and attrition
- Future Research



Define Retention Rates

- First time, first-year students
- Assignment to a fall cohort
- One & two-year retention
- Exclusions
- Transfer out



Define Graduation Rates

- First time, first-year students
- Assignment to a fall cohort
- Four, five, & six-year graduation
- Exclusions
- Transfer out



Integrated Postsecondary Education Data System (IPEDS)

- National Center for Education Statistics (NCES)
- Higher education institutions
- Institutional level data to the public
- One-year retention rates and four, five, and six-year graduation rates

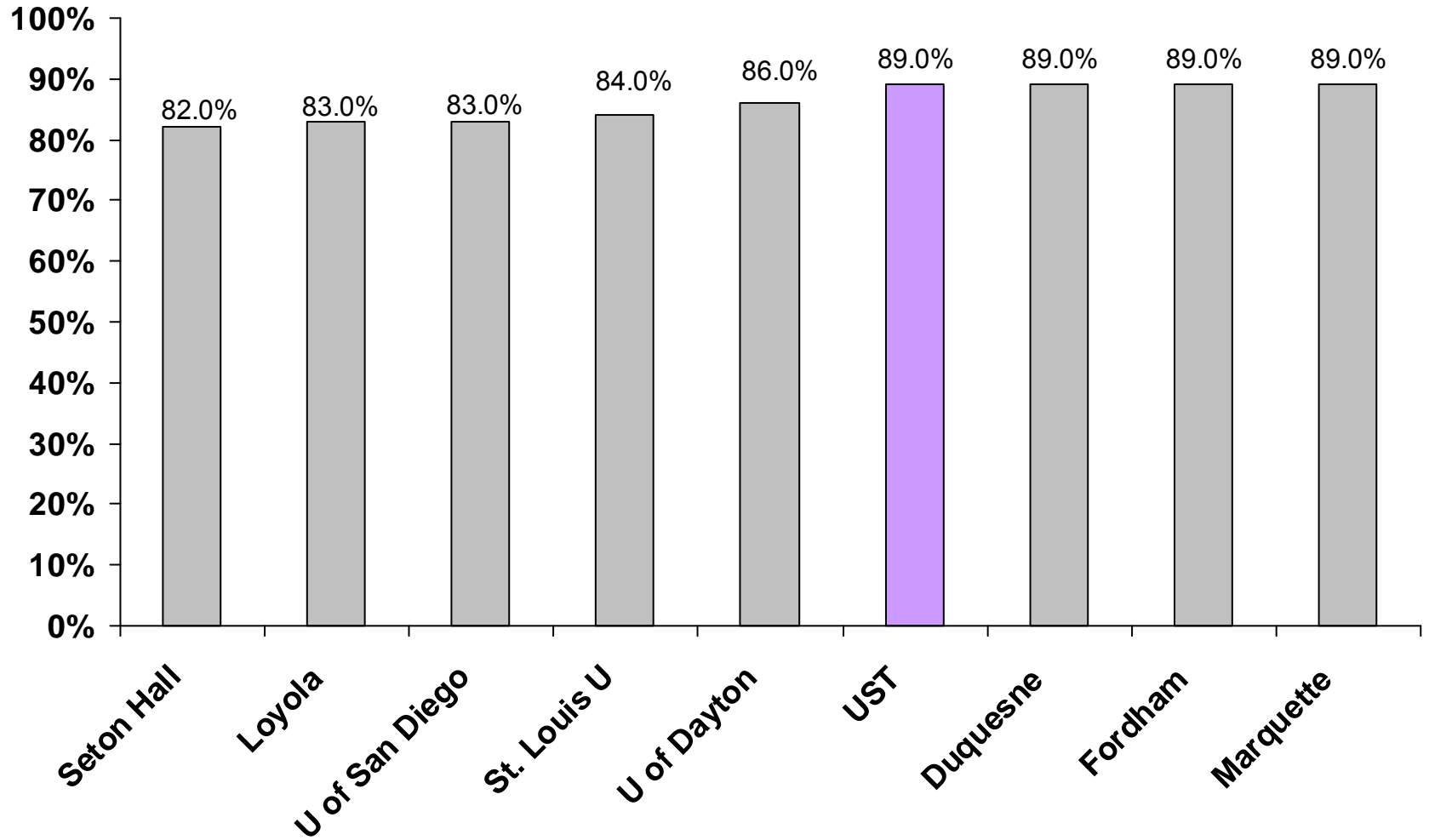


Integrated Postsecondary Education Data System (IPEDS)

- On the IPEDS website, log into PAS at the collection level
- Create comparison groups using “Add institution by name” tab
- Select variables and create the master variable list
- Extract data using the institutional data report
- Create charts using Tableau 3.0

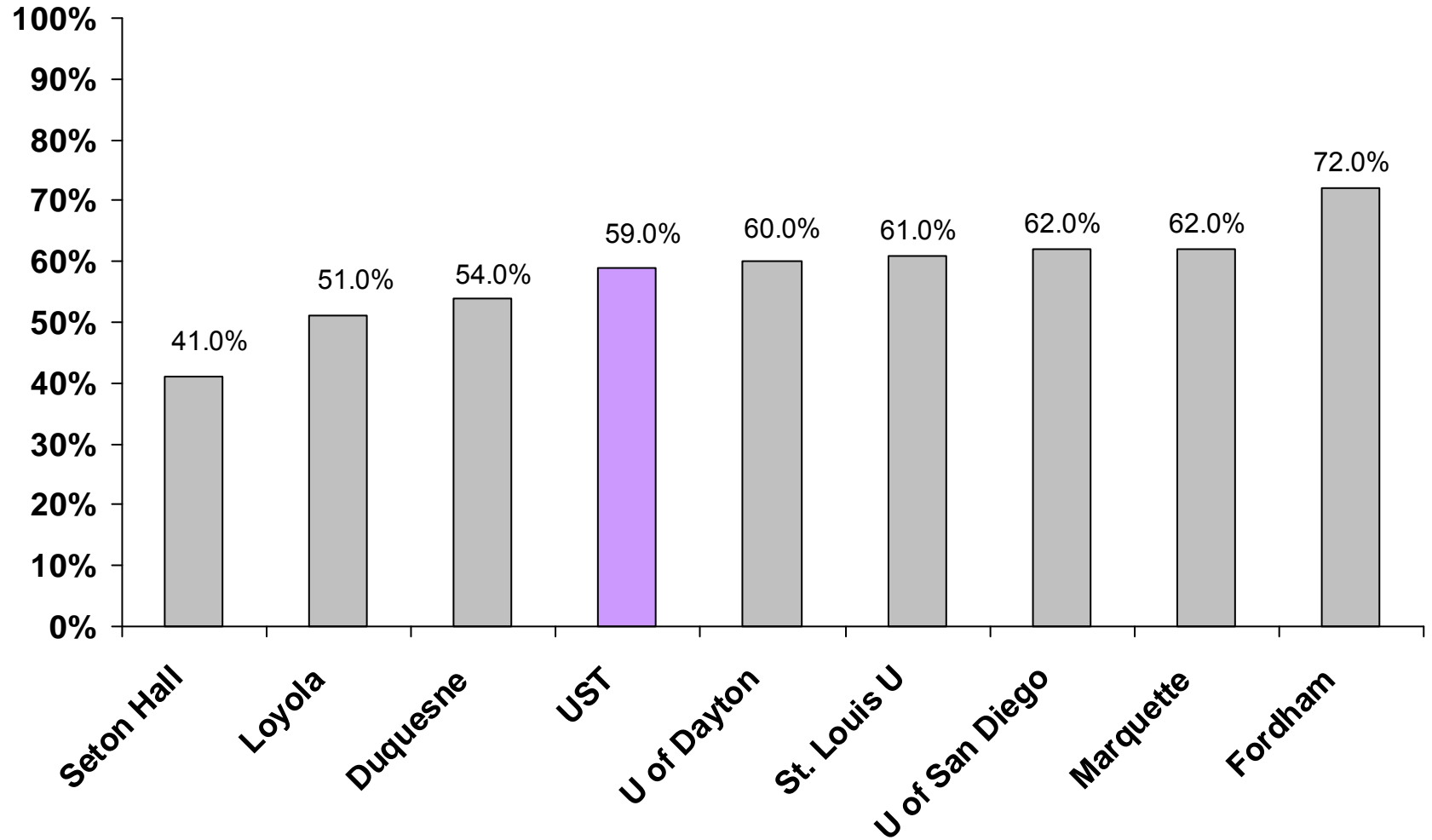


One-year Retention



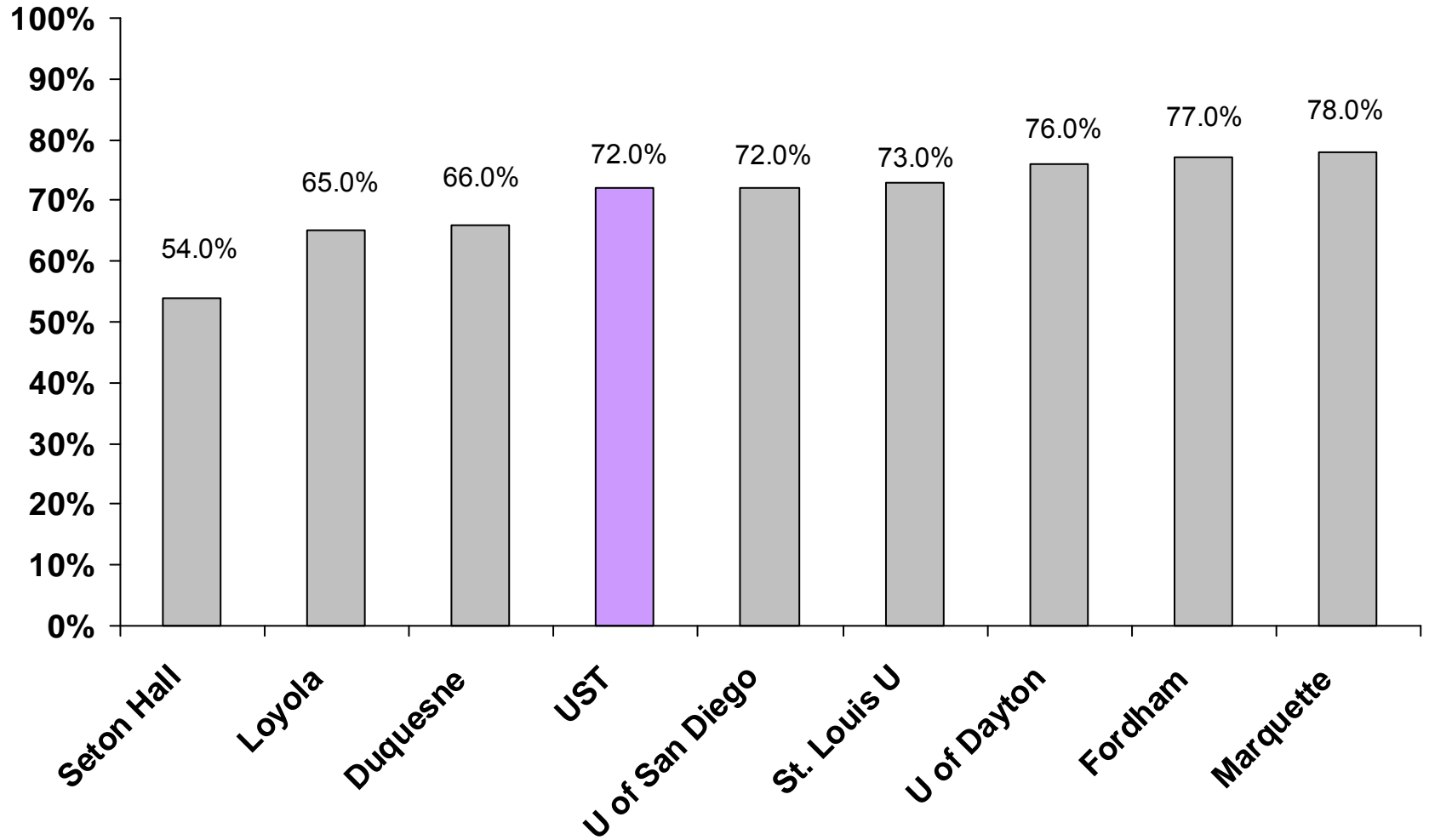
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Four-year Graduation



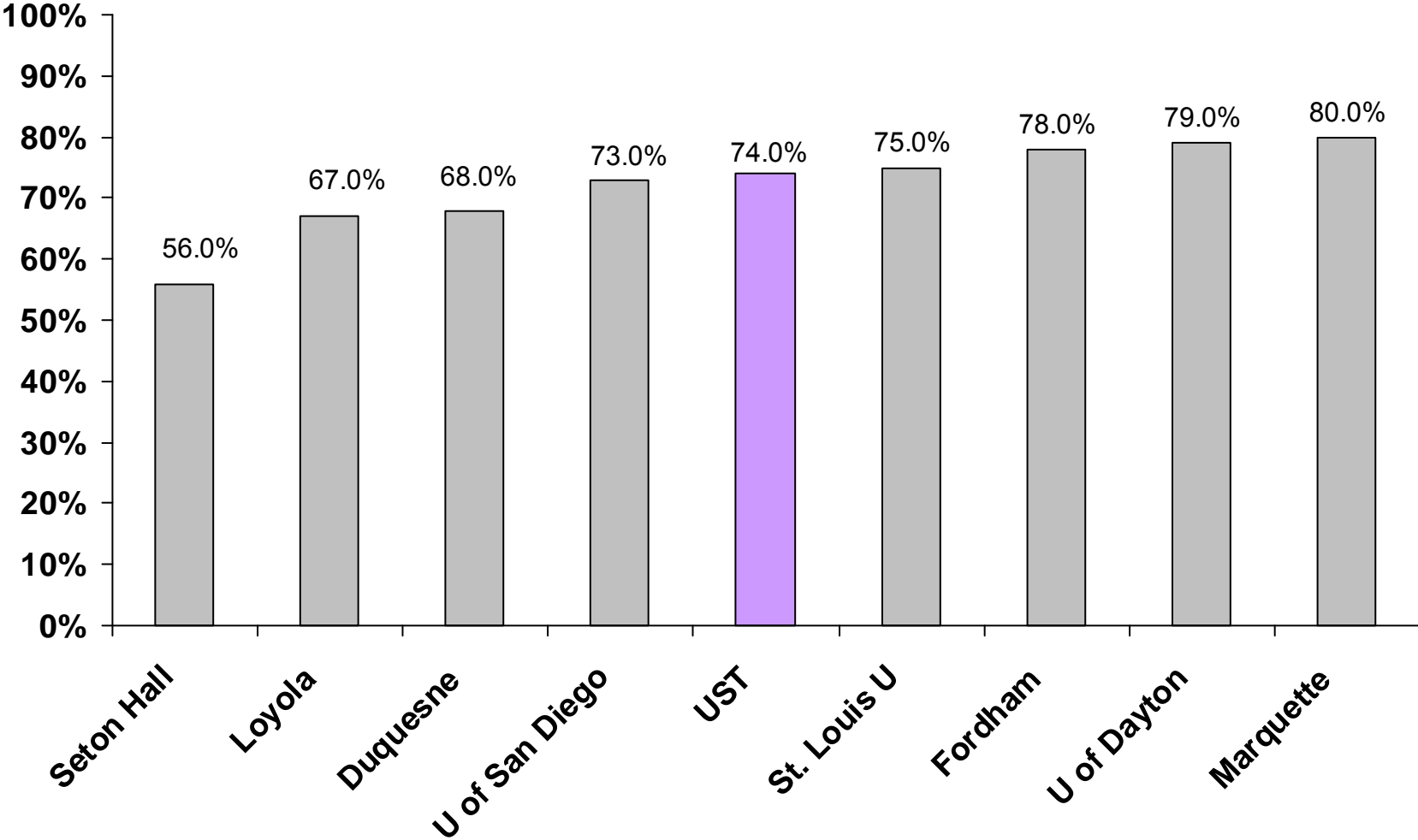
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Five-year Graduation



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Six-year Graduation

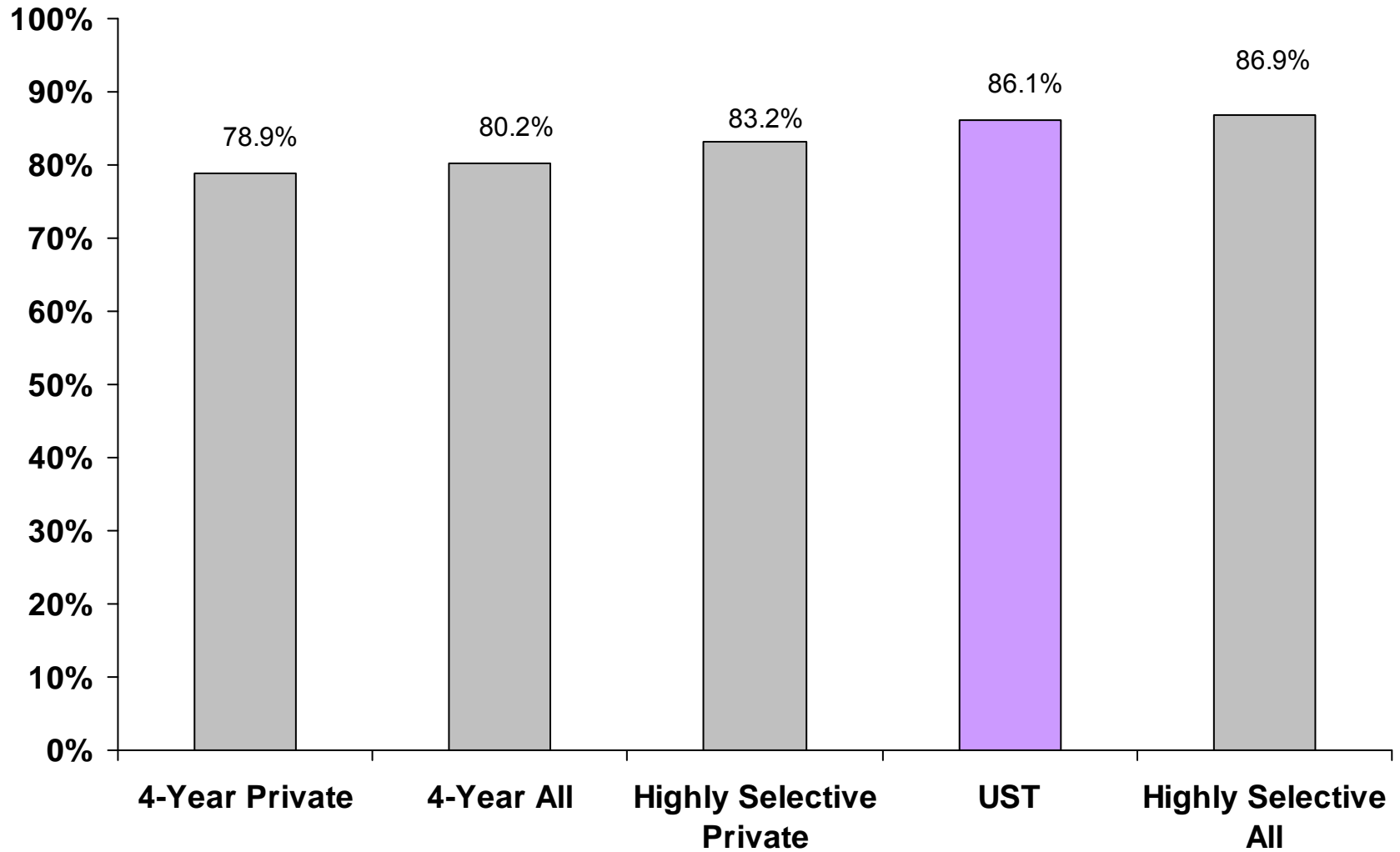


Consortium for Student Retention Data Exchange (CSRDE)

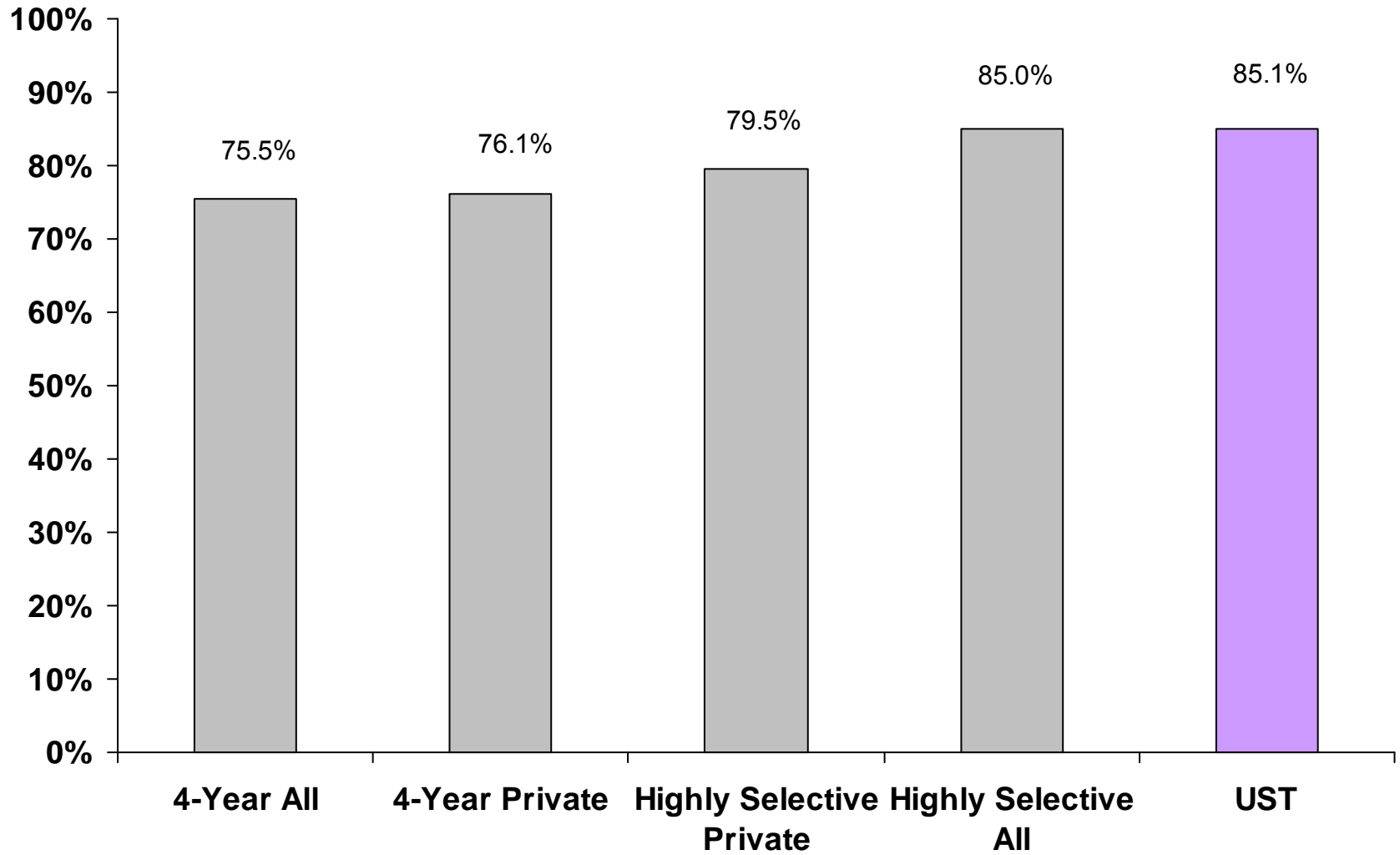
- Managed by the University of Oklahoma
- Voluntary participation of higher education institutions with 438 participants in 2007
- Provides aggregate comparison data at multiple levels to include overall, selectivity, size, and Carnegie classification
- Provides one and two-year retention rates and four, five, and six-year graduation rates



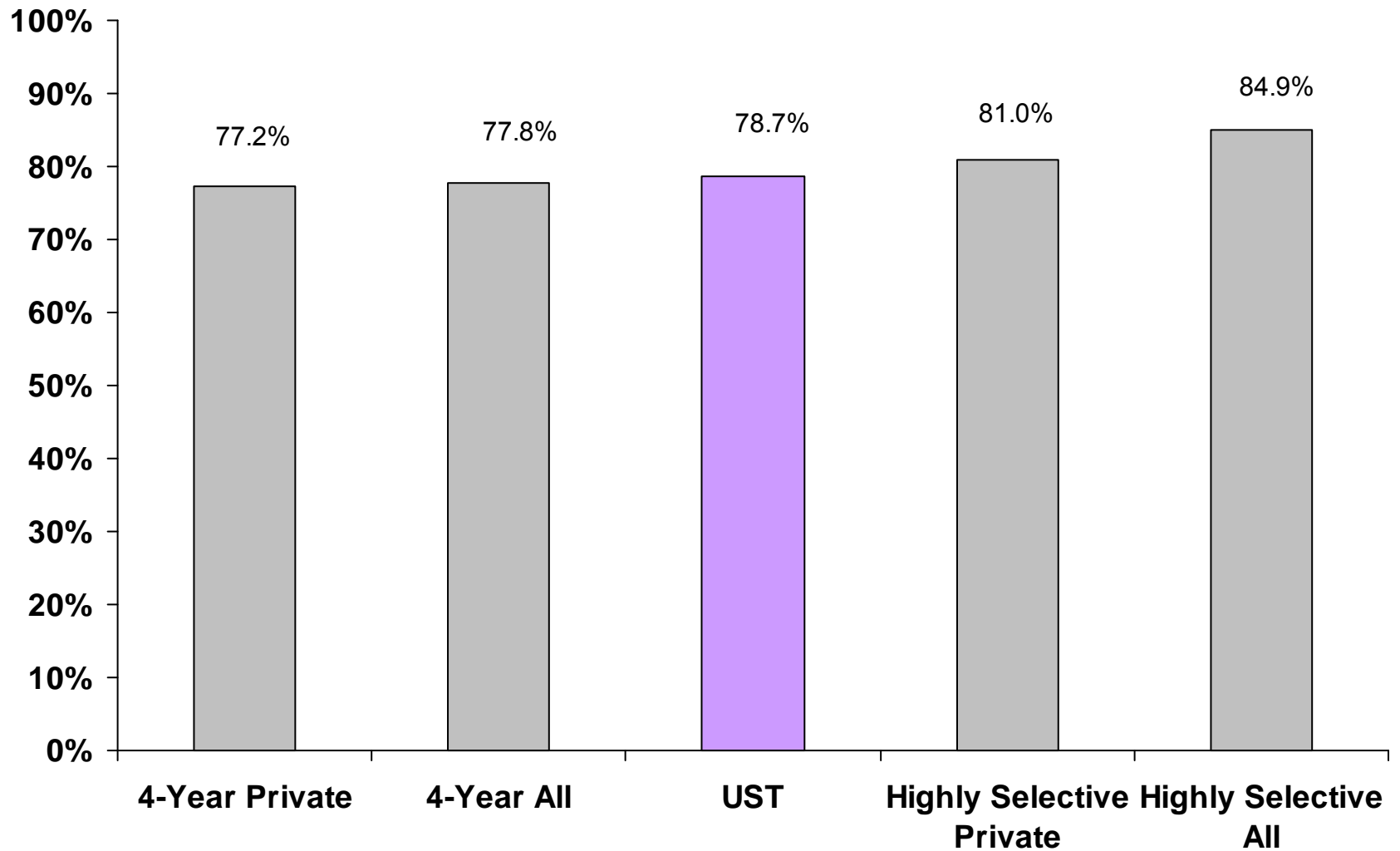
One-year Retention-Overall (1999-2005)



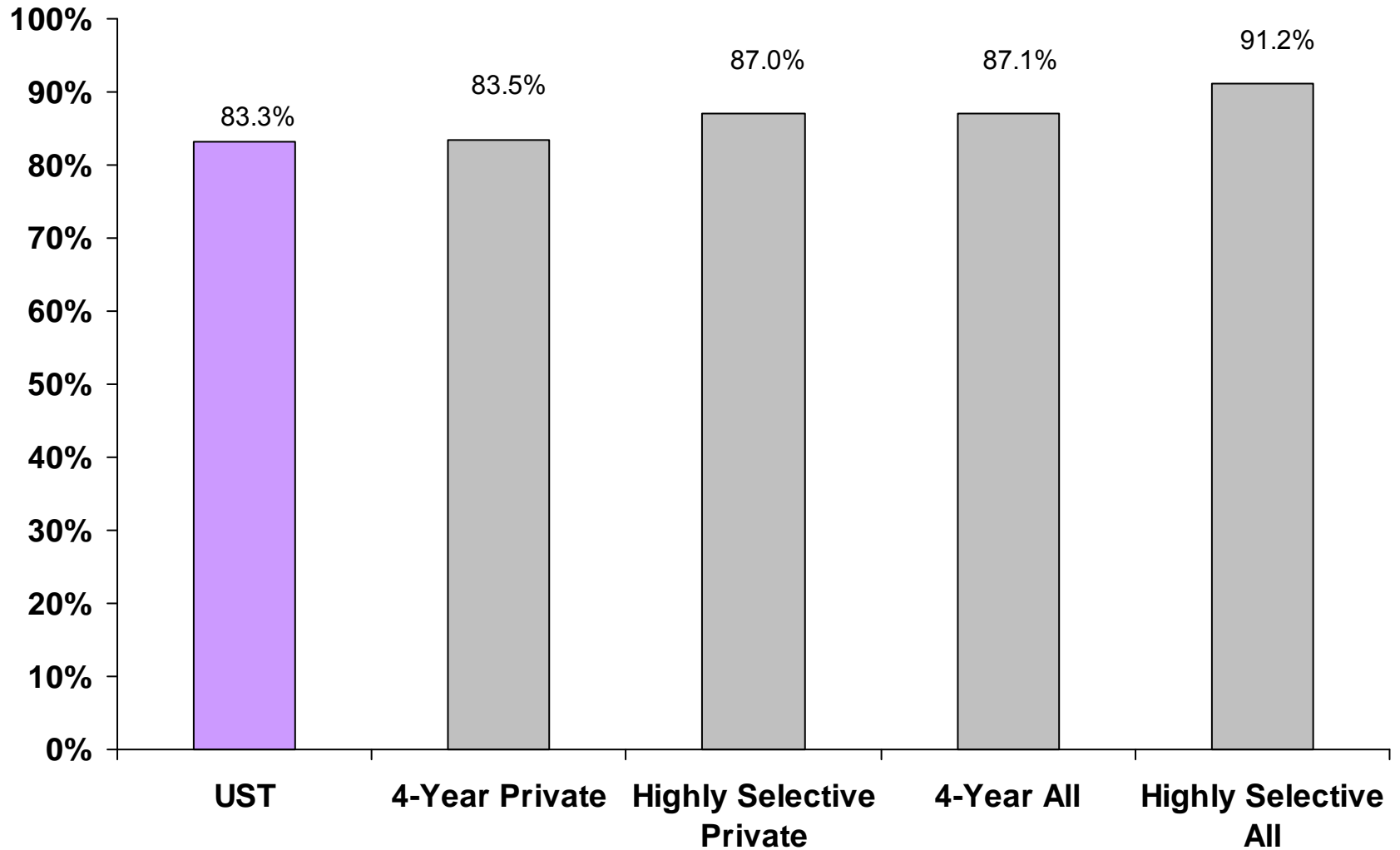
One-year Retention-Black (1999-2005)



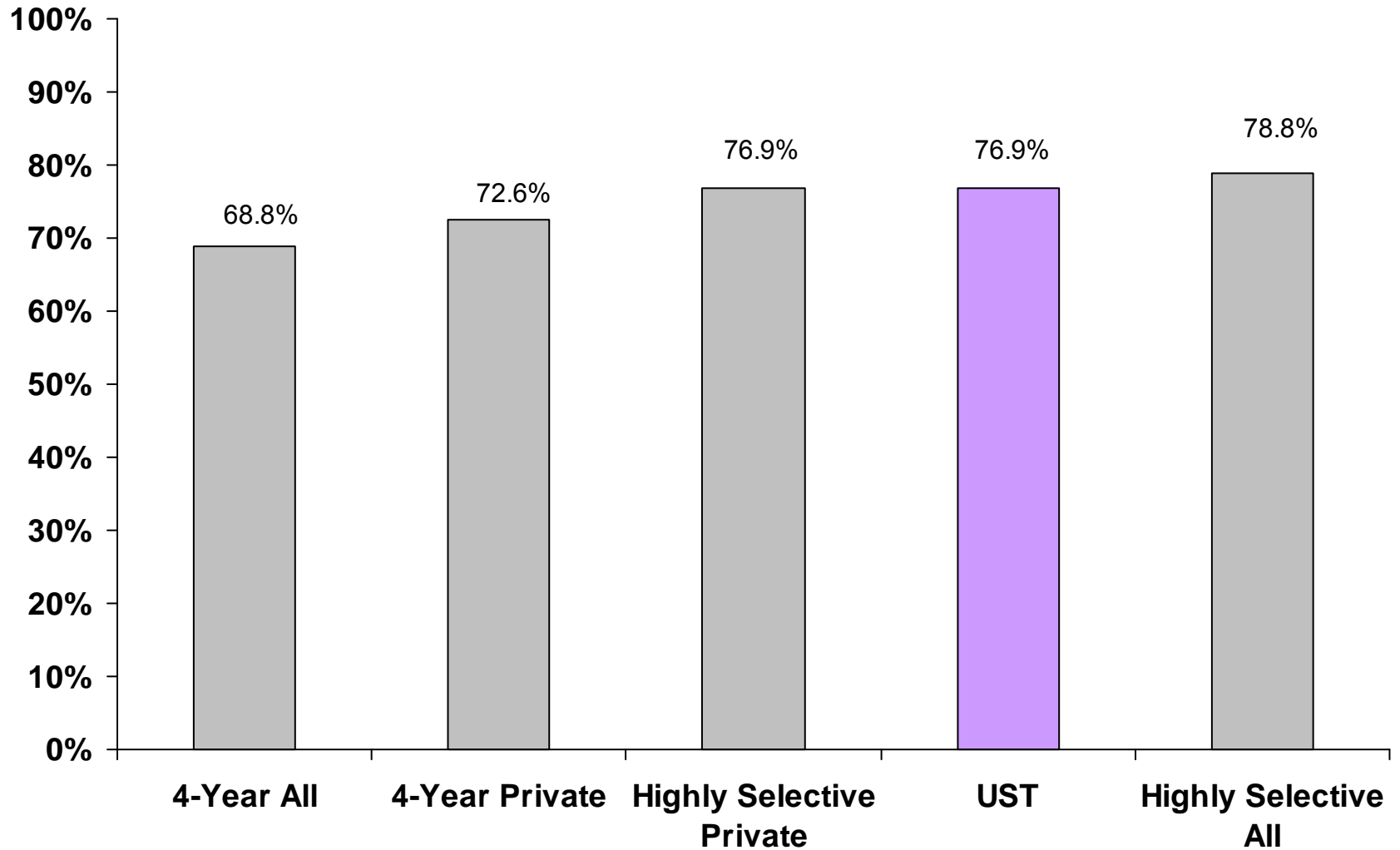
One-year Retention-Hispanic (1999-2005)



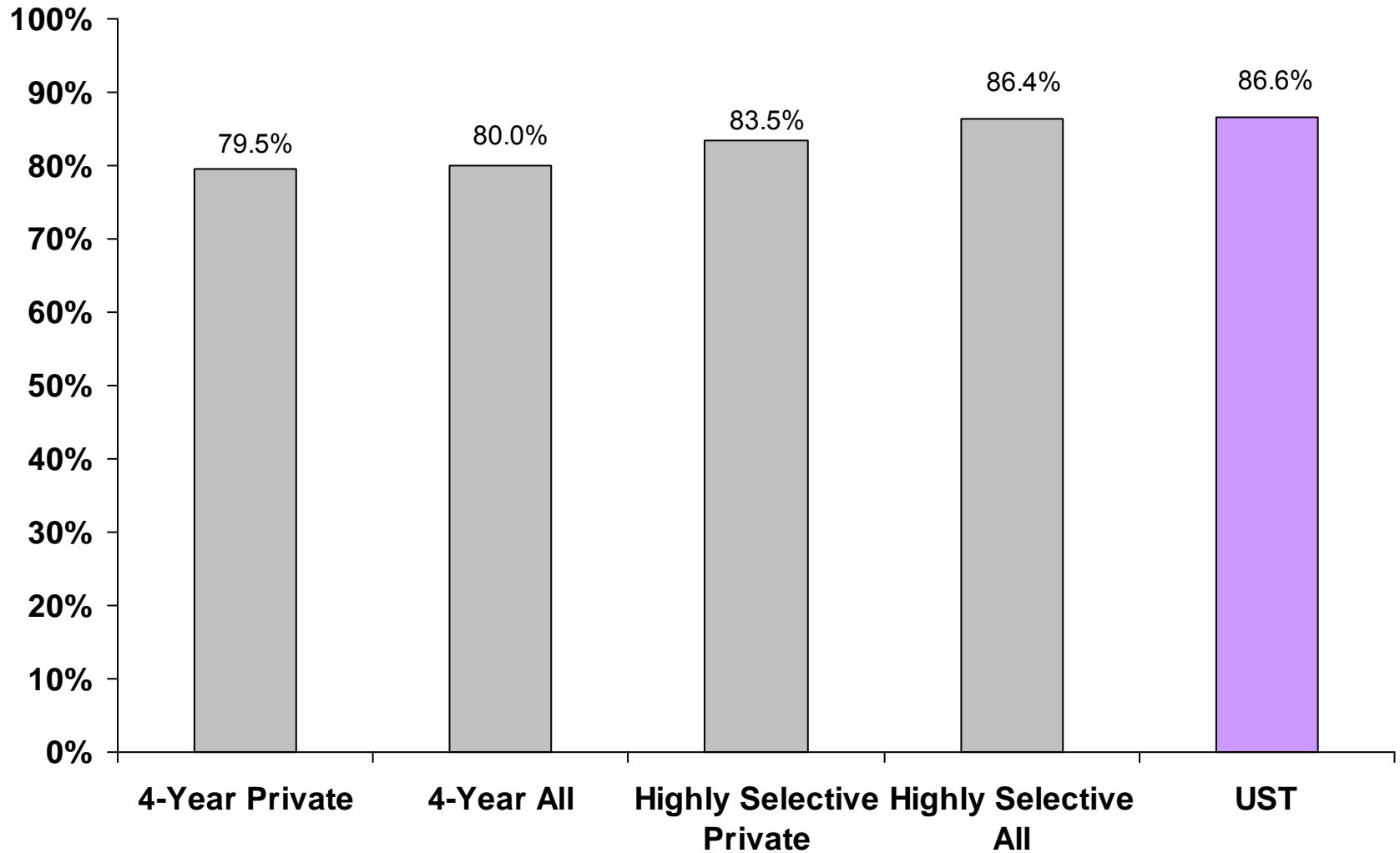
One-year Retention-Asian (1999-2005)



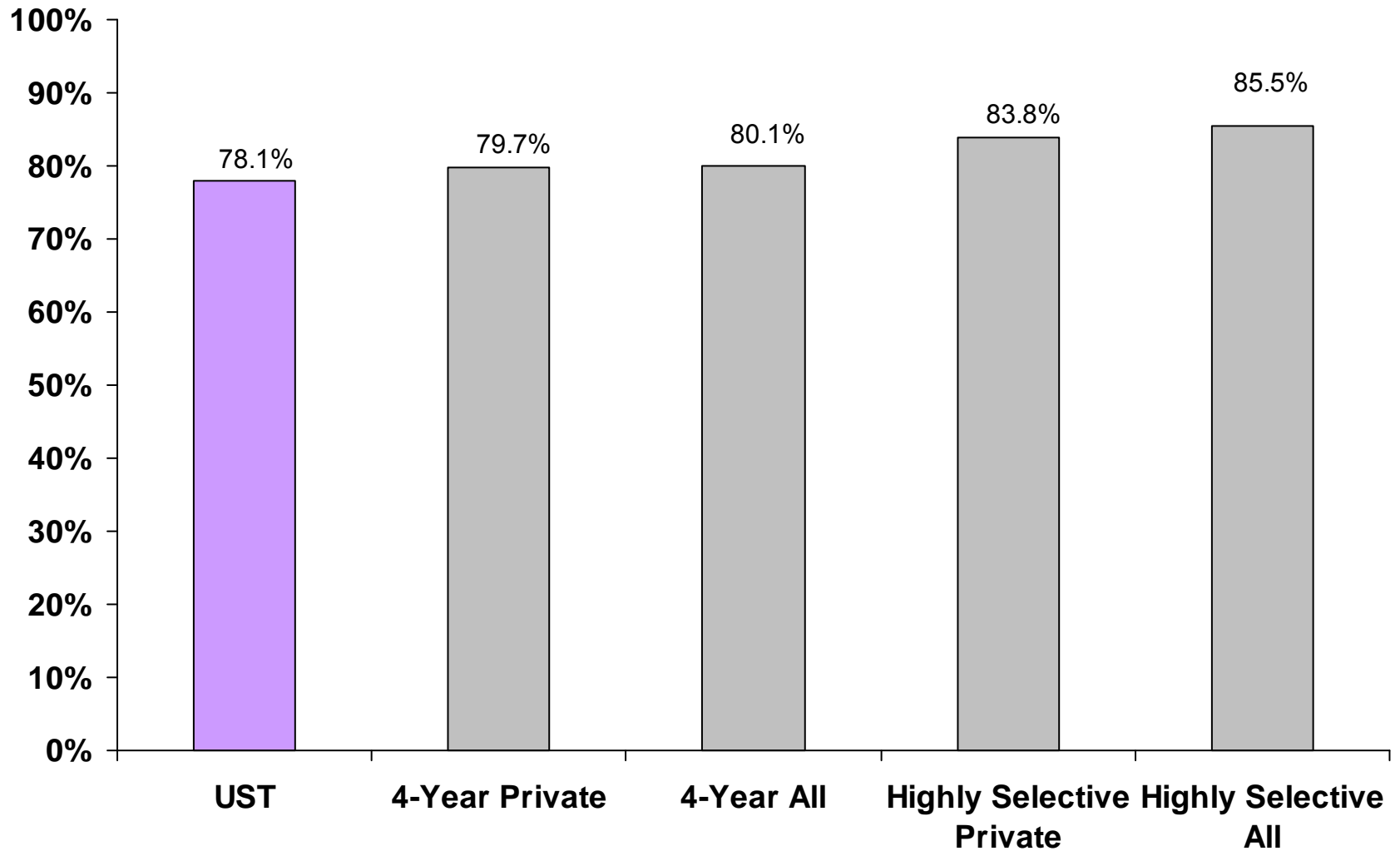
One-year Retention-American Indian (1999-2005)



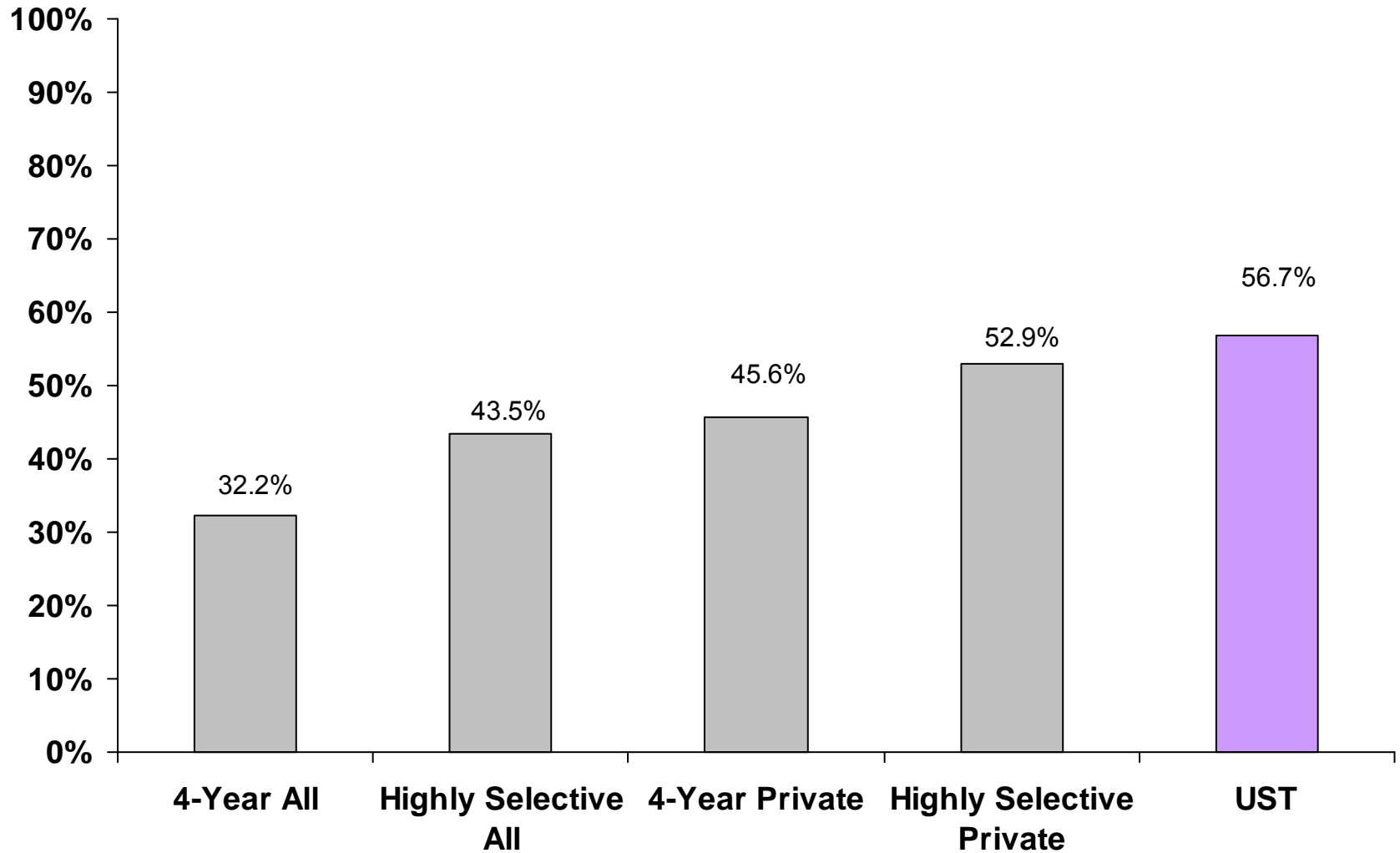
One-year Retention-White (1999-2005)



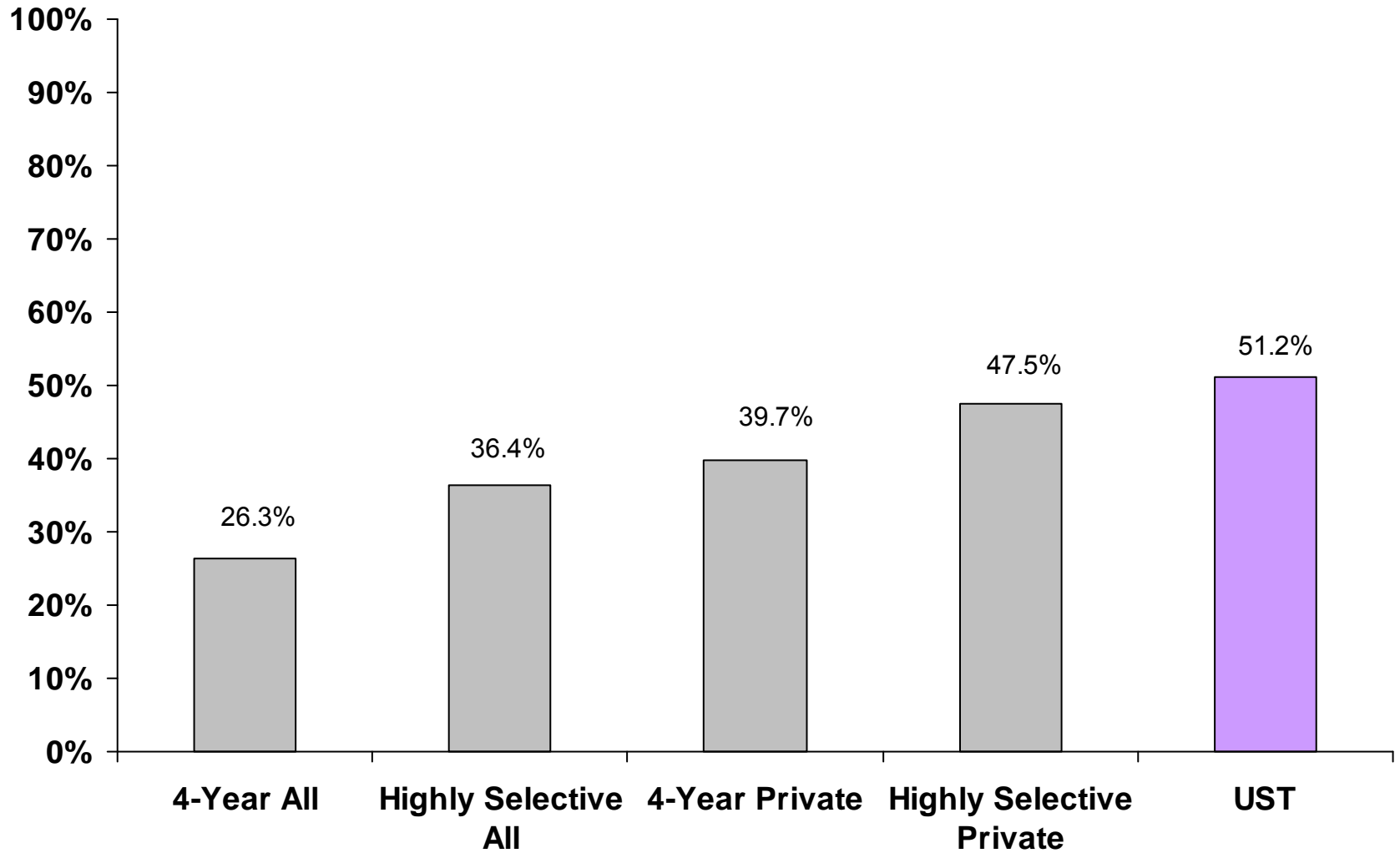
One-year Retention-Nonresident (1999-2005)



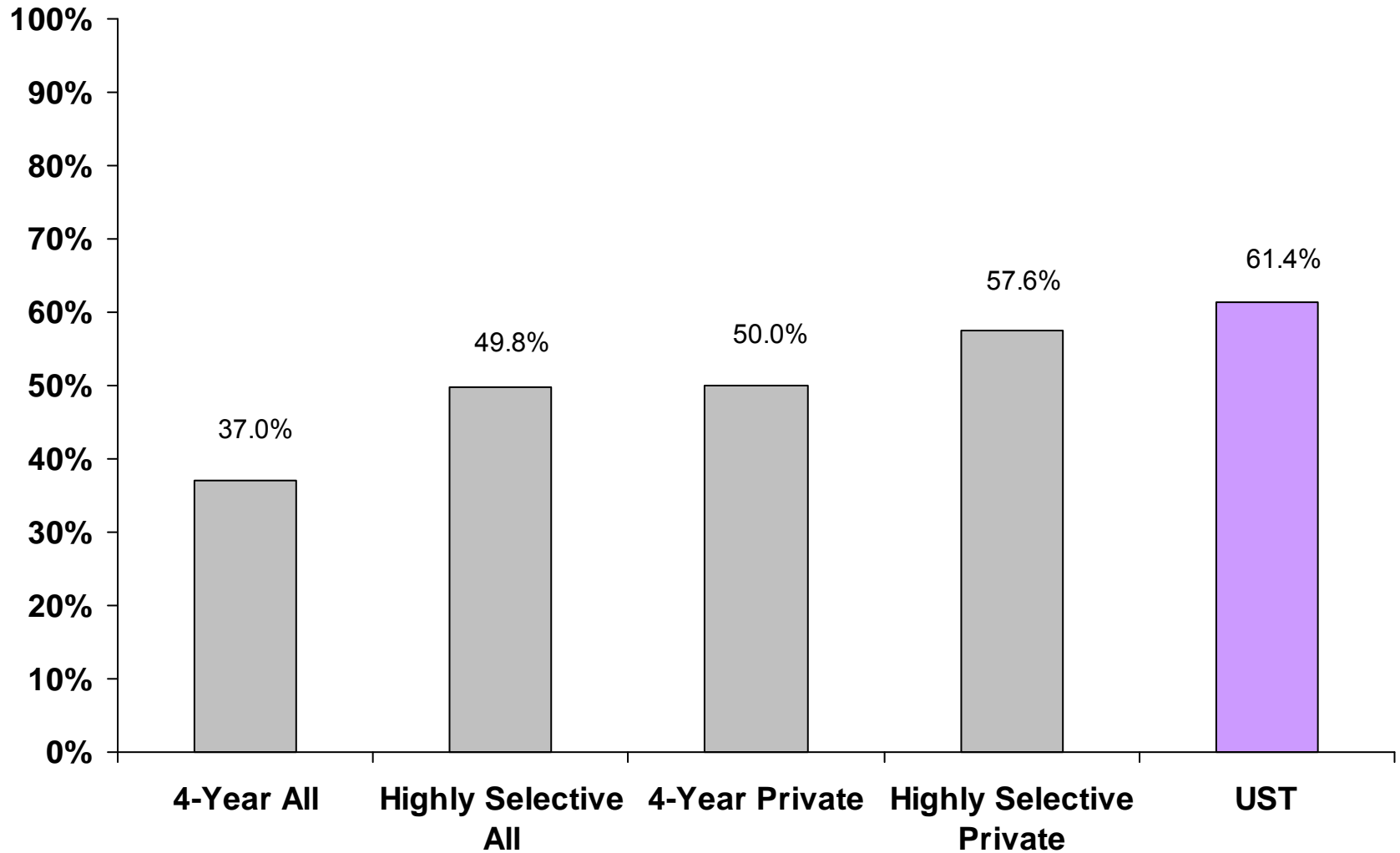
Four-year Graduation-Overall (1999-2002)



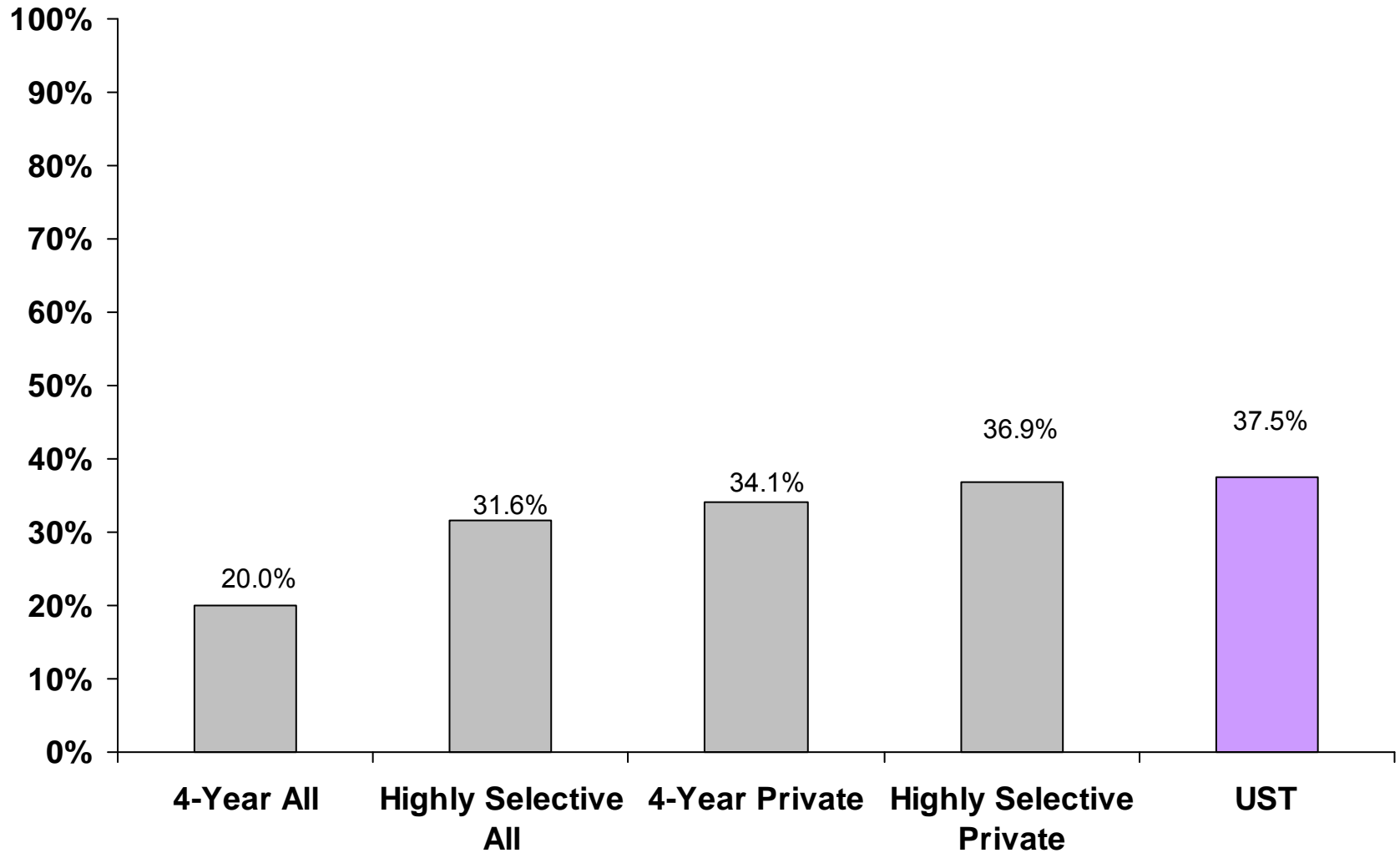
Four-year Graduation-Male (1999-2002)



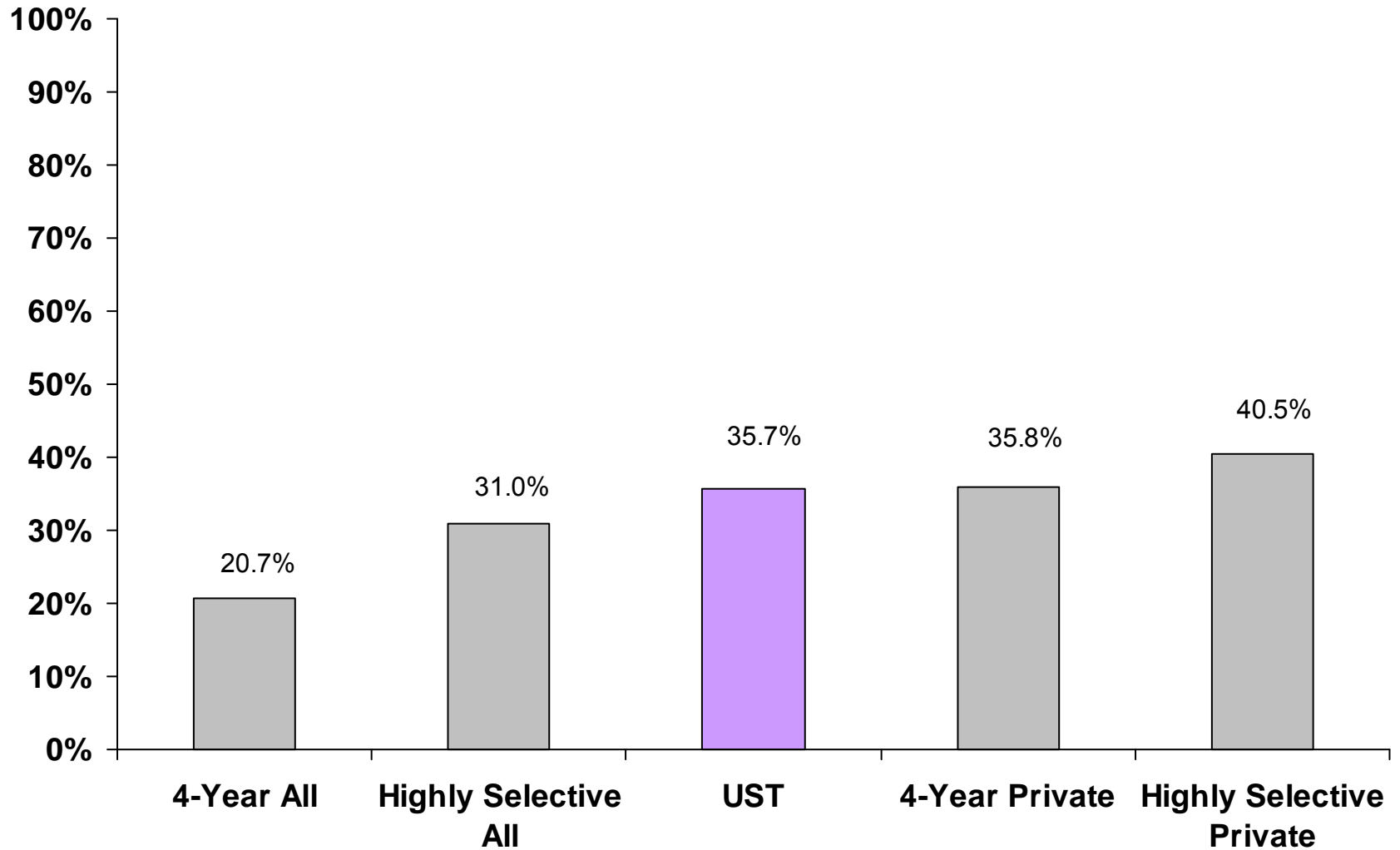
Four-year Graduation-Female (1999-2002)



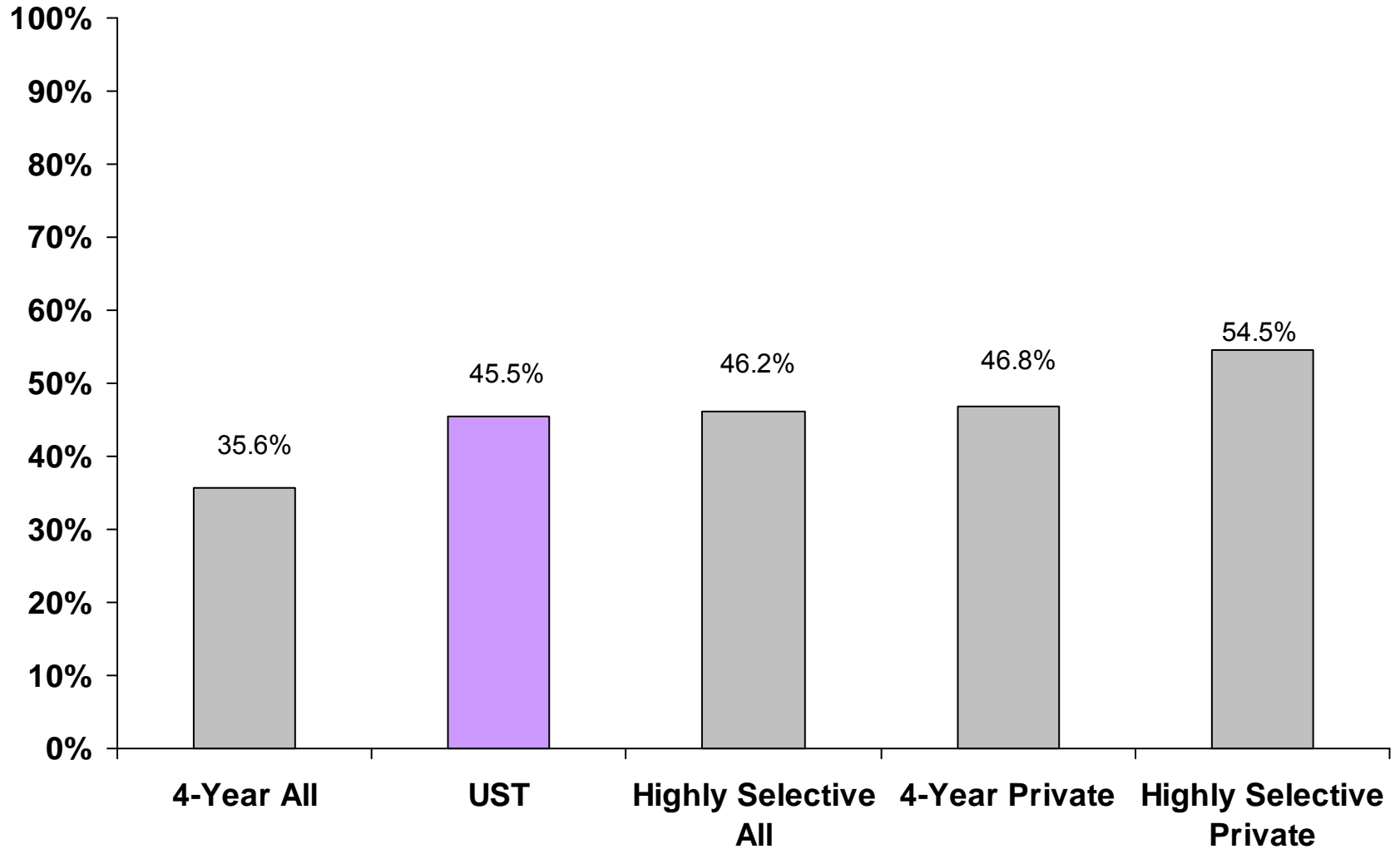
Four-year Graduation-Black (1999-2002)



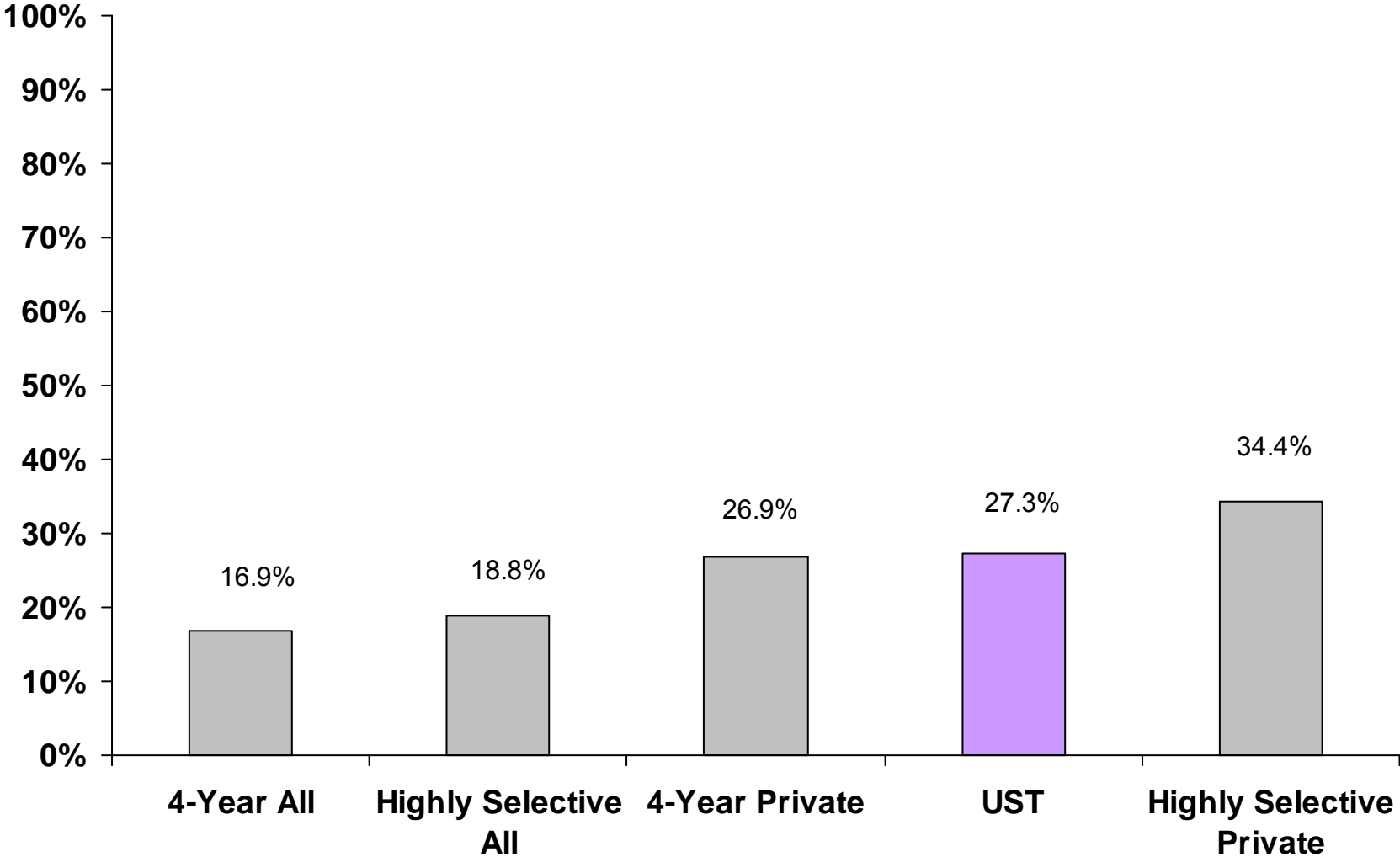
Four-year Graduation-Hispanic (1999-2002)



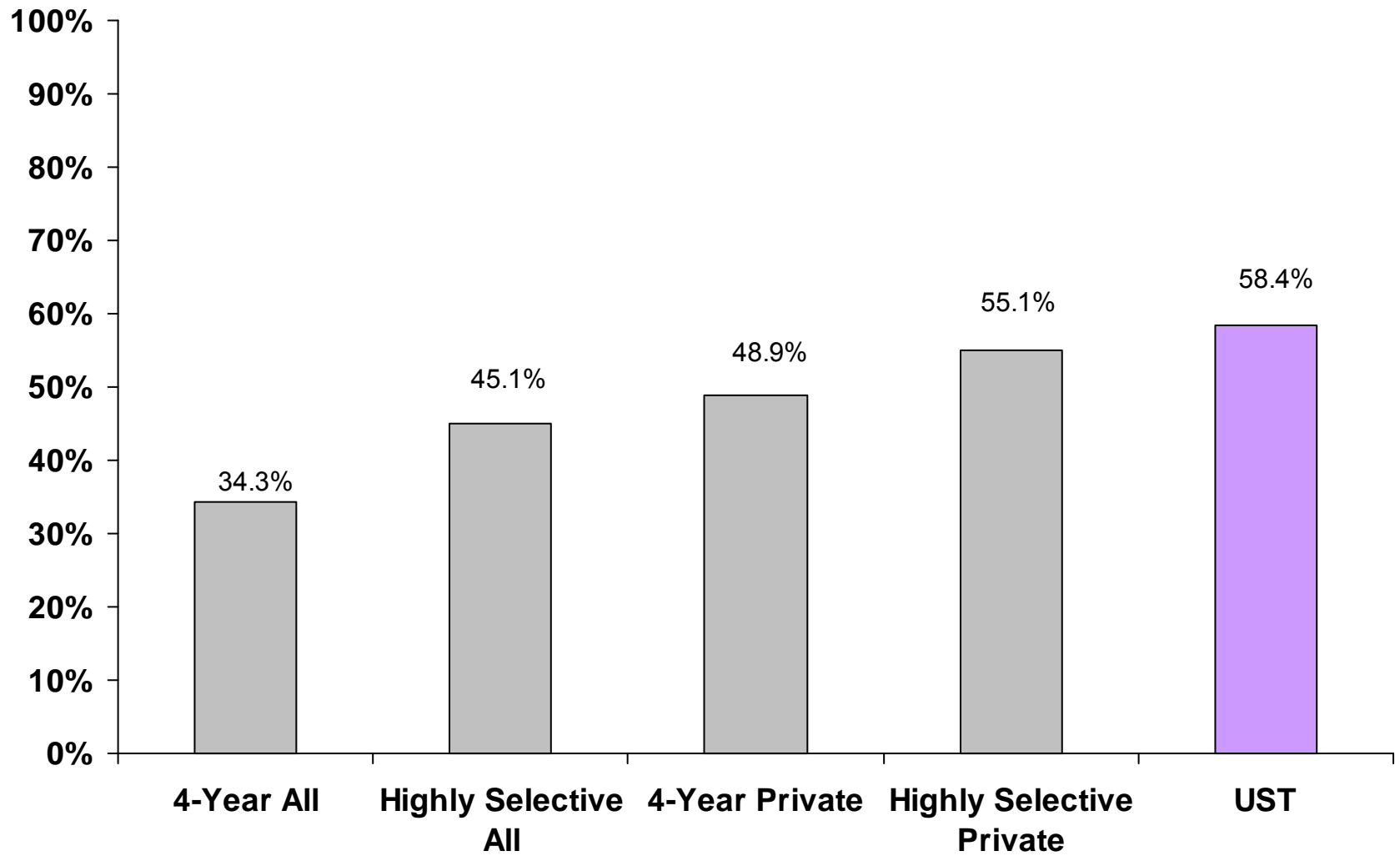
Four-year Graduation-Asian (1999-2002)



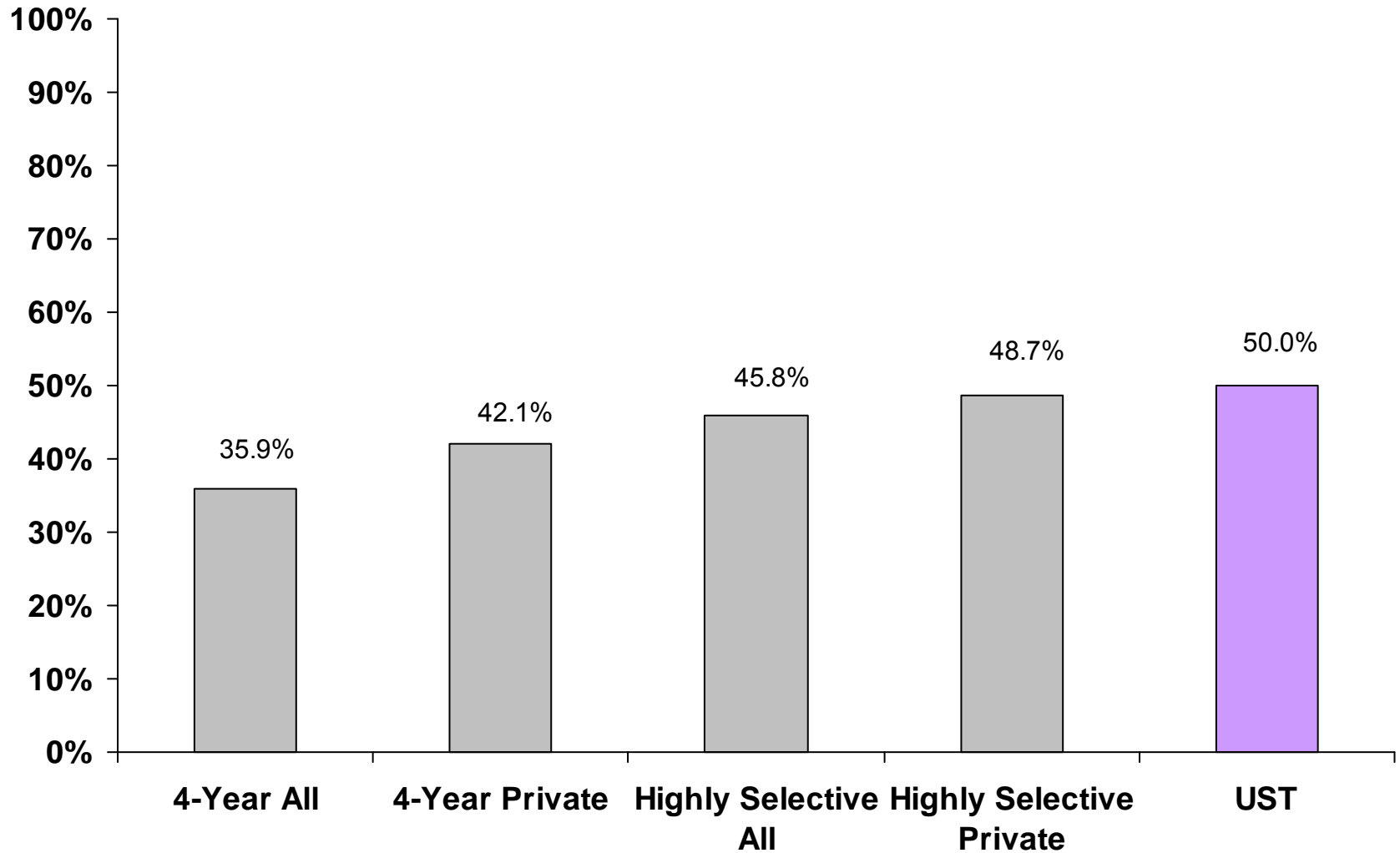
Four-year Graduation-American Indian (1999-2002)



Four-year Graduation-White (1999-2002)



Four-year Graduation-Nonresident (1999-2002)

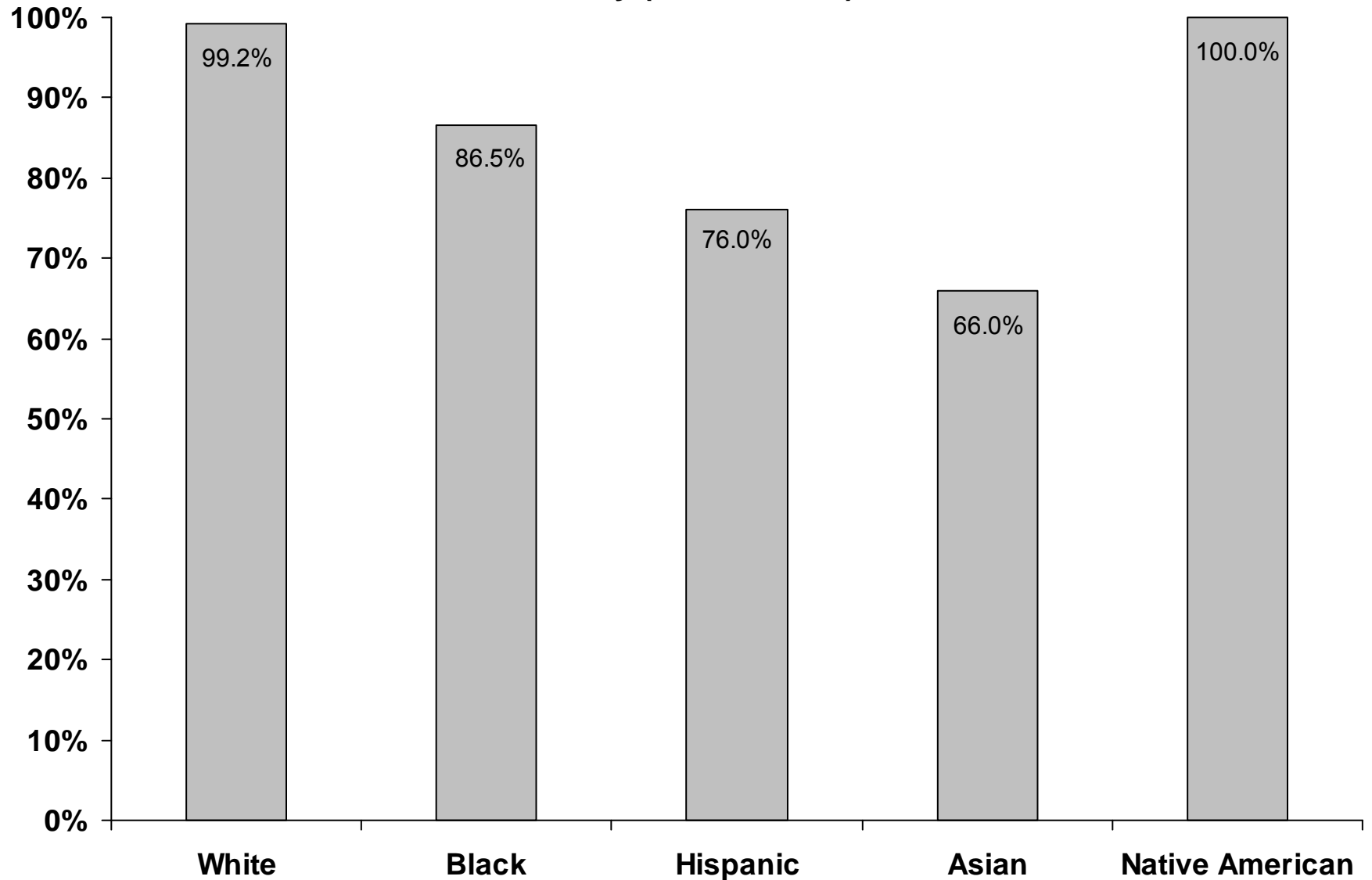


Retention and Graduation Scorecard

Measure	Retention		Graduation		
	One-year	Two-Year	Four-Year	Five-Year	Six-Year
Overall	2	1	1	1	1
Medium size	1	2	2	2	2
Male	1	1	1	1	1
Female	2	2	1	1	1
Black	1	1	1	1	4
Hispanic	3	3	3	2	2
Asian	5	3	4	3	3
Native American	2	2	2	1	1
White	1	1	1	1	1
Non-resident	5	1	1	3	3



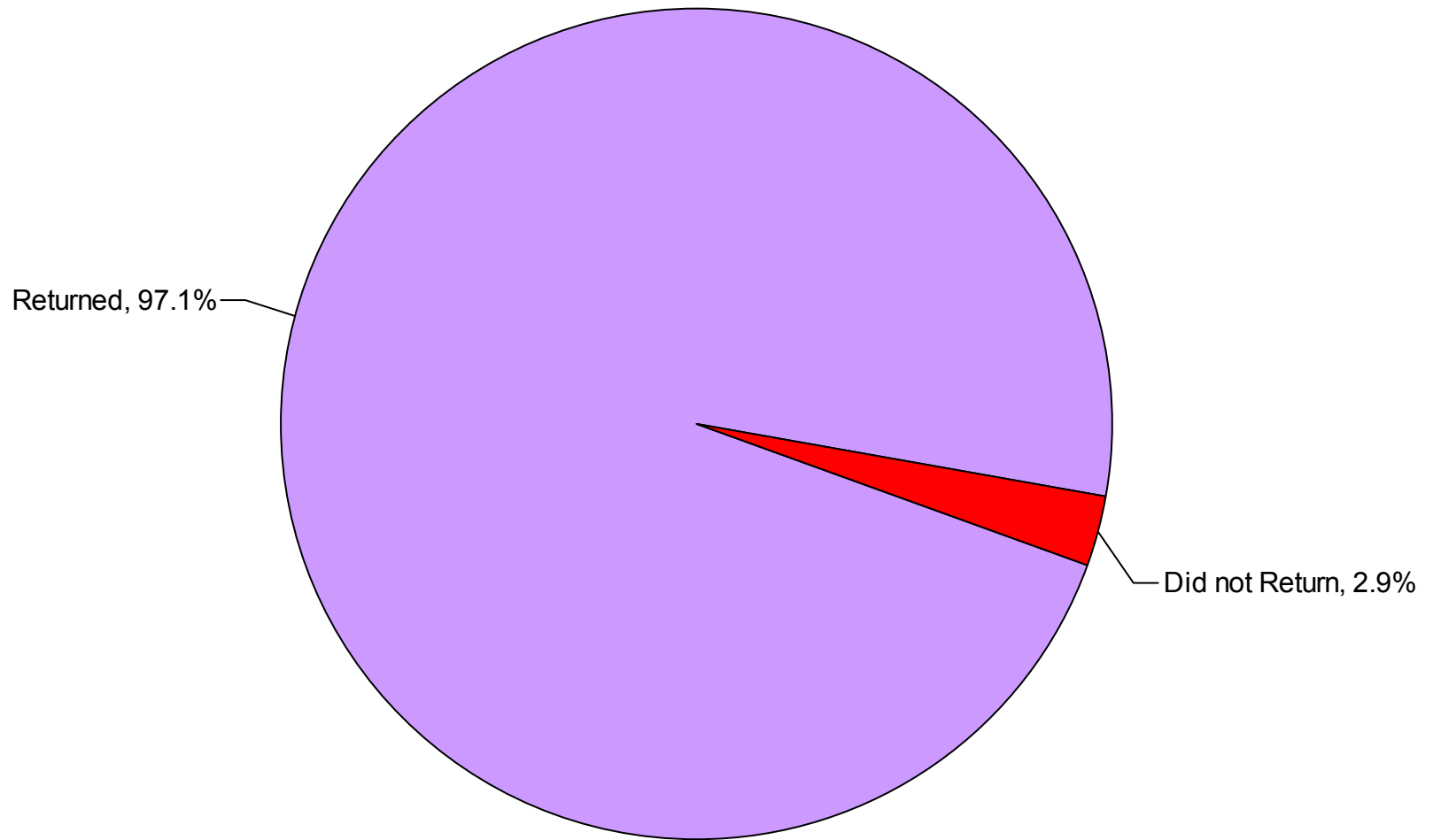
% of Students Reporting English as their Native Language by Ethnicity (2006 Cohort)



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N=1,189

One-year Retention by % of Students Reporting English IS NOT their Native Language (2006 Cohort)

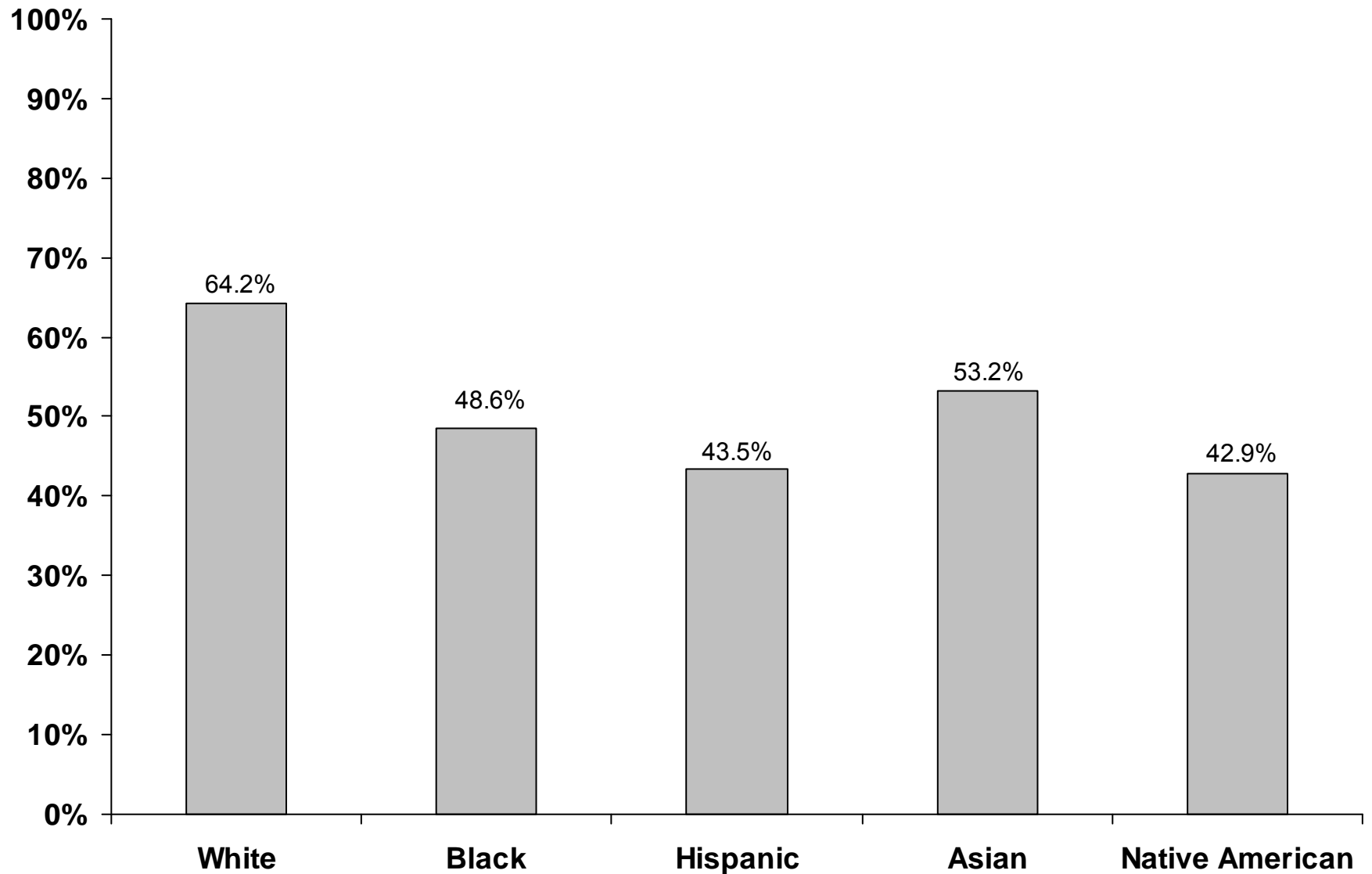


N=35



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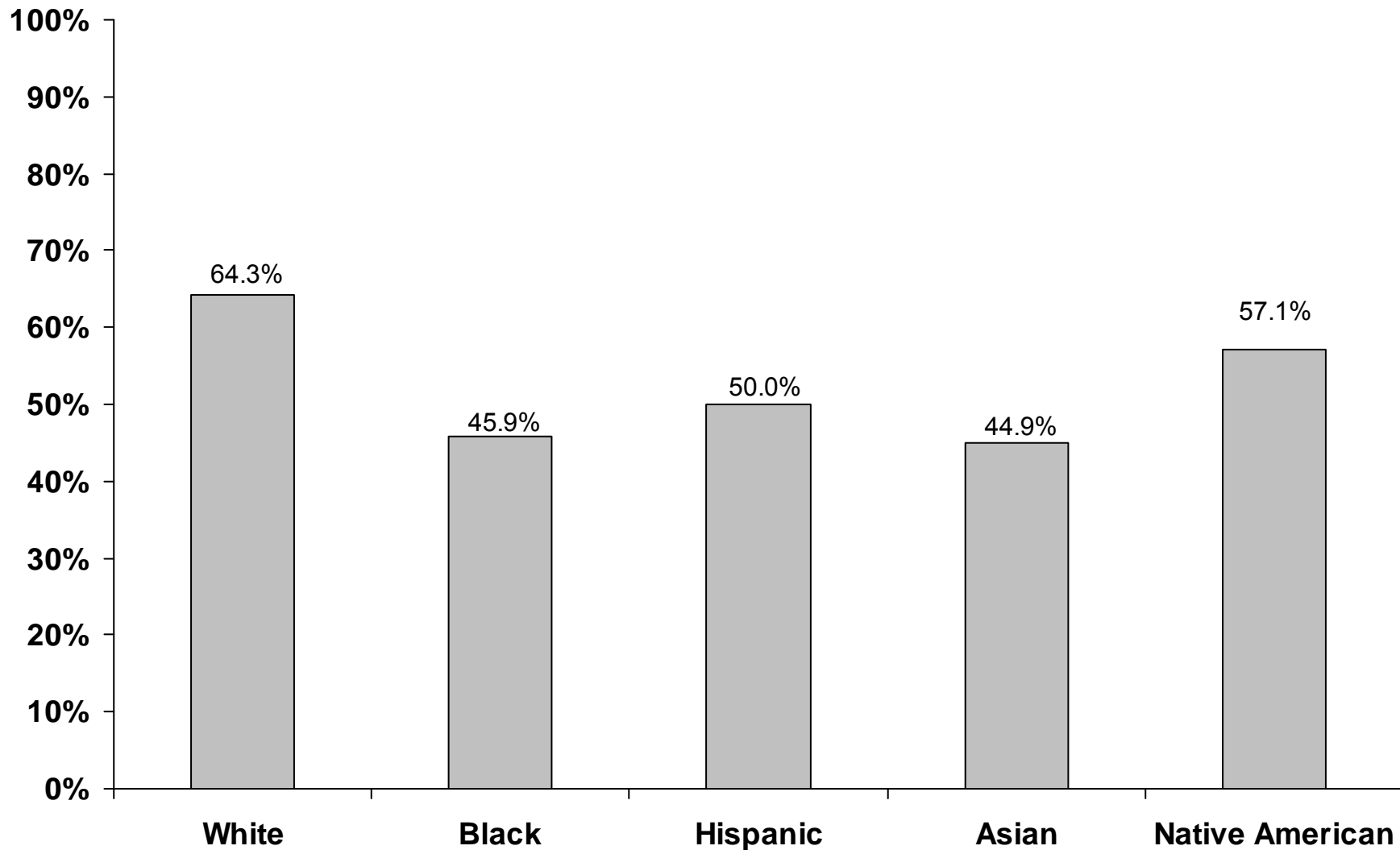
Fathers Degree Attainment by Ethnicity (2006 Cohort)



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N=1,165

Mothers Degree Attainment by Ethnicity (2006 Cohort)



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N=1,175

National Student Clearinghouse (NSC)

- A non-profit organization which was incorporated in 1993-94
- Provides enrollment student degree, diploma and enrollment details to the participating institutions
- The number of institutions participating in NSC is more than 3,000, enrolling 91% of US college students



National Student Clearinghouse (NSC)

- Data for the 2000 cohort was prepared according to clearinghouse standards
- Data points included in the file were student ID, gender, ethnicity, CIP and college
- Txt (notepad) file was created
- NSC provided username and password was used to upload file



National Student Clearinghouse (NSC)

- Contained further student details including:
 - institution in which the student enrolled
 - enrollment begin and end date
 - graduation status
 - 2-year/4-year institution
 - public/private college
 - FT/PT status
 - major
- Each student has multiple records



National Student Clearinghouse (NSC)

- Tableau 3.0 was used to identify the exact number of students
- Tableau 3.0 was also used to identify:
 - Total transfer out students
 - Transfer out students graduating from a 2-year/4-year institution
 - Transfer out students graduating from a public/private institution



2000 Cohort

	Cohort	Total	Graduated from FI	Graduated from 2Yr Inst	Graduated from 4Yr Inst	Total Graduated
Numbers	2000	1078	775	21	129	925
Percent		1078	71.8%	1.9%	11.9%	85.8%

- 27% students transfer out
- Only four transfer out students were not traceable



2000 Cohort – Transfer out

Graduates by major from other institutions	
Major	Count
Business	24
Communication	18
Nursing	14
Medicine	14
Science	11

Where they went			
4Year Institution	Count	2Year Institution	Count
UNIVERSITY OF MINNESOTA-TWIN CITIES	42	NORMANDALE COMMUNITY COLLEGE	17
UNIVERSITY OF WISCONSIN - MADISON	20	CENTURY COMMUNITY & TECHNICAL COLLEGE	15
ST CLOUD STATE UNIVERSITY	14	INVER HILLS COMMUNITY COLLEGE	14
THE COLLEGE OF ST. CATHERINE	12	NORTH HENNEPIN COMMUNITY COLLEGE	8
METROPOLITAN STATE UNIVERSITY	7	ANOKA RAMSEY COMMUNITY COLLEGE	7



Factors Related to Retention at UST One-to-one (2004-2005)

- Bivariate
- Provides a sense of potential differences
- Simple and explainable
- Does not account for additional factors
- *t* test, chi square, and correlations



Factors Related to Retention at UST One-to-one (2004-2005)

- Gender ↔
- Race/Ethnicity ↔
- Pell grant recipient ↓
- High school type ↔
- High school GPA ↑
- High school rank ↑

Key

Positive effect ↑

Negative effect ↓

No effect ↔



Factors Related to Retention at UST One-to-one (2004-2005)

- ACT Composite ↑
- ACT Math ↑
- ACT Reading ↑
- Residence ↑
- Transfer credit ↑
- Class before 10:00 a.m. ↑
- Enrolled credits ↑

Key

Positive effect ↑

Negative effect ↓

No effect ↔



Factors Related to Retention after Enrollment One-to-one (2004-2005)

- Fall GPA ↑
- Fall credits earned ↑
- Enrolled in J-Term ↑
- Spring credits enrolled ↑
- Spring GPA ↑
- Spring credits earned ↑
- Cumulative GPA ↑

Key

Positive effect ↑

Negative effect ↓

No effect ↔

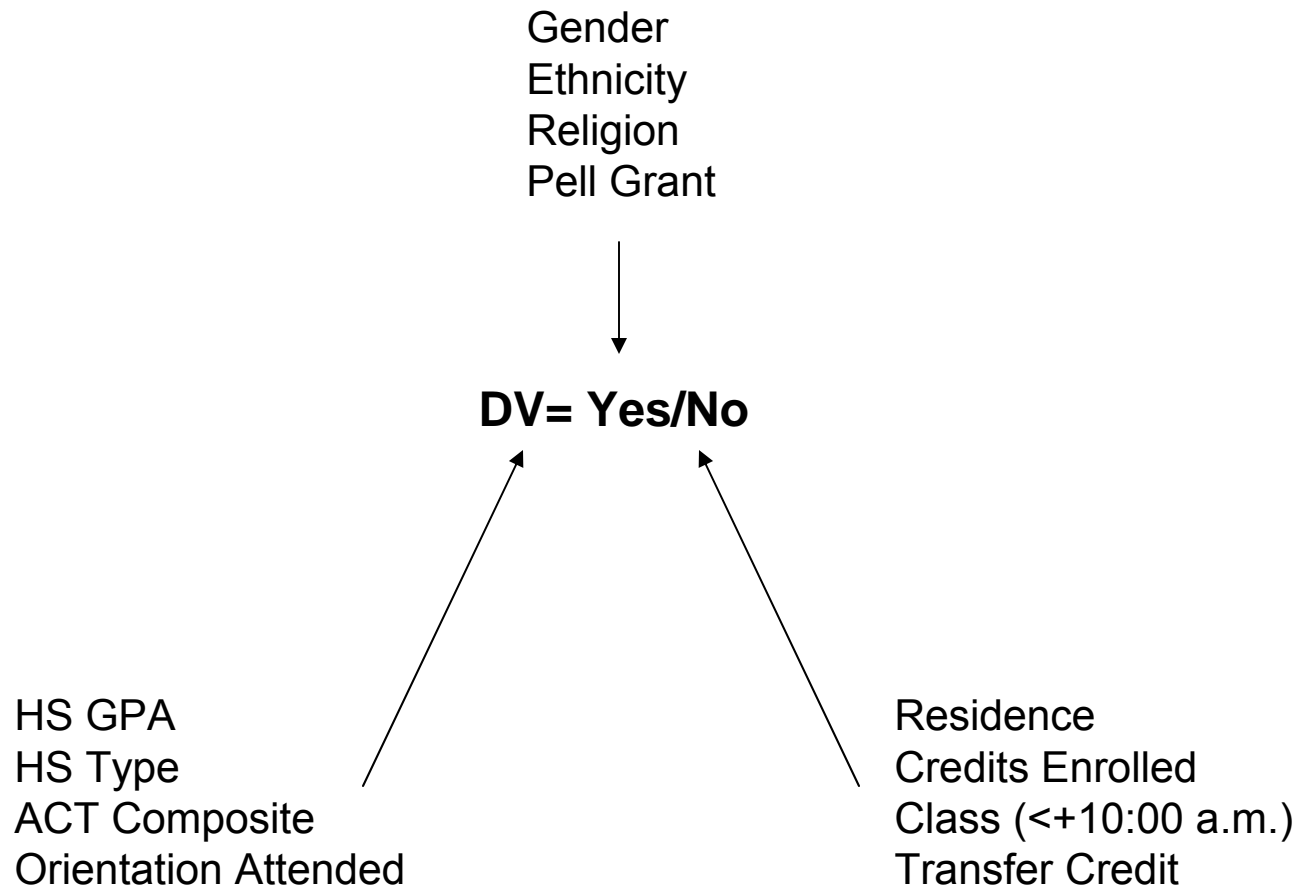


Factors Related to Retention at UST (multiple factors)

- Multivariate analysis approach to understanding retention
- Minimizes the silo approach as multiple factors are considered
- Binary Logistic Regression (yes/no)



Logistic Regression Conceptual Model



What do we know about retention (multiple factors)?

- High School GPA (Higher GPAs relate to higher retention)
- Residence (Living on campus relates to higher retention)
- Transfer Credit (One or more credits transferred in relates to higher retention)
- Orientation (Attending a session other than 1 thru 4 relates to higher retention)



Identifying academic deficiencies and attrition prior to enrollment

- Pilot study
- Utilizes previous predictive model to develop a “risk index”
- Examples of a risk index include FICO scores, automobile insurance, and disease rates
- Intention is to provide UST administrators with a manageable list of students who may be more likely to experience academic distress and/or not return



Developing a risk index for FTFY students at UST

- HS GPA
 - HS GPA $< 3.23 = 1$
 - HS GPA $\geq 3.23 = 0$
- Residence
 - Living off campus = 1
 - Living on campus = 0
- Transfer Credit
 - Zero credits transferred to UST = 1
 - One credit or more transferred to UST = 0
- Orientation
 - Attendance at an orientation other than one thru four = 1
 - Attendance at orientation one thru four = 0



Developing a risk index for FTFY students at UST

- Each student receives a value of 0 or 1
 - HS GPA (0 or 1)
 - Residence (0 or 1)
 - Transfer Credit (0 or 1)
 - Orientation (0 or 1)
- The values are then aggregated to arrive at a score between 0 and 4
 - Students with a score of 2 or less are considered to be 'not at-risk'
 - Students with a score of 3 or higher are considered to be 'at-risk'
- Chi-Square tests for independence and independent samples t-tests are employed to identify statistically significant differences between the two groups



Risk index results (2004-2005)

	Not at-risk (N=2,264)	At-risk (N=212)
Fall-to-spring retention	96.6%	89.2%
Fall-to-fall retention	89.9%	72.6%
Fall GPA	3.11	2.54
Spring GPA	3.13	2.54
Cumulative GPA	3.12	2.58

All comparisons are statistically significant at the $p < .001$ level



Future research

- College level retention and graduation
- Graduate level retention and graduation
- STEM retention and graduation
- Transfer student retention and graduation
- Athletics retention and graduation



Thanks!!



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