Seeking Excellence and Diversity:
How Stages in the Pipeline from High School to K-12 Teaching Affect the Composition of New Teachers

Karen DeAngelis, Warner School of Education, University of Rochester
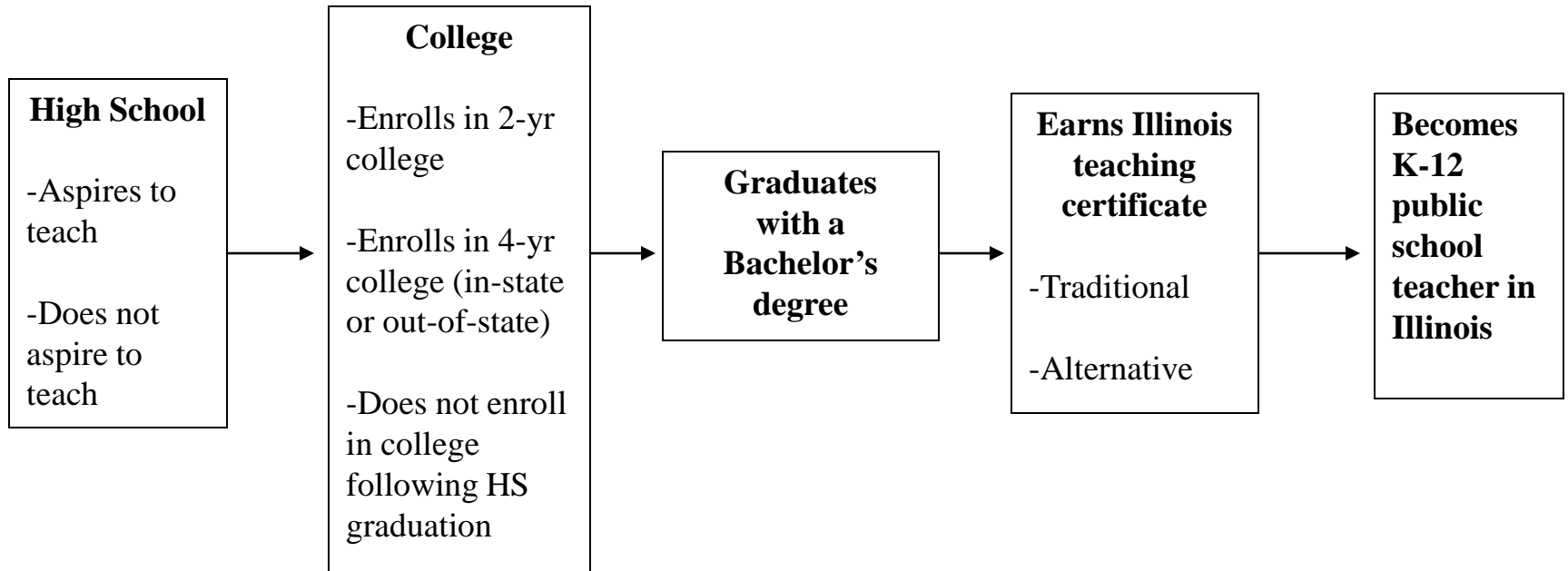**Eric Lichtenberger and Brad White, Illinois Education Research Council**

Purpose

- To examine how stages in the pipeline from high school through college and initial certification affect the composition of new entrants to K-12 public school teaching in Illinois.
  - academic skills
  - racial/ethnic diversity

- In a previous but unrelated study of new teacher cohorts in Illinois (DeAngelis & Presley, 2007), we found an overall increase academic skills, but an overall decline in racial/ethnic diversity, particularly in Chicago

- Goal: to gain a better understanding of how each stage in this important source of teacher supply influences the characteristics of those who enter the profession.

Stages in the Pipeline

High School

-Aspires to teach

-Does not aspire to teach

→

College

-Enrolls in 2-yr college

-Enrolls in 4-yr college (in-state or out-of-state)

-Does not enroll in college following HS graduation

→

Graduates with a Bachelor's degree

→

Earns Illinois teaching certificate

-Traditional

-Alternative

→

Becomes K-12 public school teacher in Illinois

Research Questions

1. What are the racial/ethnic and academic characteristics of those who aspire to teach while in high school?

2. What proportion of high school students who aspire to teach eventually become teachers?

3. How does the academic and racial/ethnic composition of aspirants change at each step?

4. Among those who do not aspire to teach while in high school, what proportion eventually enters teaching?

5. How do the pathways of non-aspirants who become teachers differ from those of aspirants who become teachers?

Data
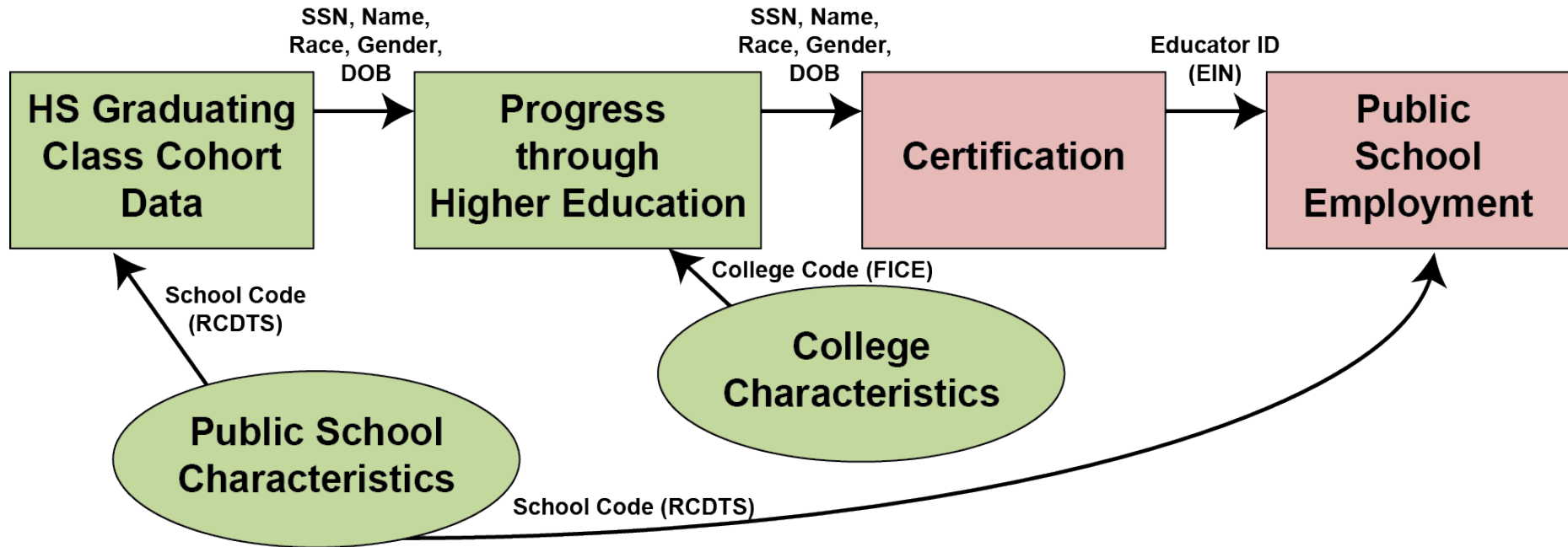
Data

HS Graduating Class Cohort Data
(Illinois Public HS Grad Classes of 2002 and 2003)
[Source: IBHE and ACT, Inc.]

- Identifying aspirants:
    - Anticipated college major in education; *or*
    - Anticipated career field in education
- College readiness
    - ACT scores
    - HS GPA
- SSN
- Demographics (race, gender, date of birth)
- Family information (estimated income)
- Student high school code

Data

Public School Characteristics (2002–2011)

[Source: ISBE report card & NCES Common Core of Data]

- Geography
  - Region (CPS, NE non-CPS, NW, WC, EC, SW, SE)
  - Lat and long (for GIS analysis)
- Locale (CPS, other urban, suburban, town, rural)
- Achievement (% meeting/exceeding standards)
- Demographics
  - Student racial composition
  - Student FRL participation

Data

Student progress through higher education (2002-2010)
[Source: National Student Clearinghouse]

- College enrollment(s)

- College completion(s)

- Degrees and certificates (if completed)

- Major (if completed)

HS
C

Data

College Characteristics

[Source: IPEDS, Barrons, IBHE]

- Level, sector, control (2-year, 4-year, public, private)
- Geography
  - Region (in-state, out-of-state)
  - Lat and long (for GIS analysis)
- College competitiveness rankings

HS
CI

Data

Illinois Teacher Certification Records (2005-2011)
[Source: ISBE Teacher Certification Information Sytem
(awaiting approval)]

- Certification and examiniation history
- Type of Certificate (Alternative or Traditional)

Characteristics

School Code (RCDTS)

Data

Public School Employment (2005-2011)

[Source: ISBE Teacher Service Record (awaiting approval)]

- Position
- School where employed
    - Characteristics of school where employed (for years when employed)

Research Methods

1. We will use simple descriptive and inferential statistics to examine and compare the characteristics of aspirants who became/did not become teachers and non-aspirants who became/did not become teachers at each stage of the pipeline.

2. Then we will use multivariate models, including logistic and multinomial regression, to examine the unique roles of race/ethnicity and academic preparation, as well as their interaction, at each stage.

3. This study builds on Vegas et al.'s (2001) national study by
   - using more recent (post-NCLB) data;
   - examining additional stages in the pipeline, including high school aspirations, type of college attended, and attainment of teacher certification; and
   - considering differences in the pipeline by geographic region and locale type.
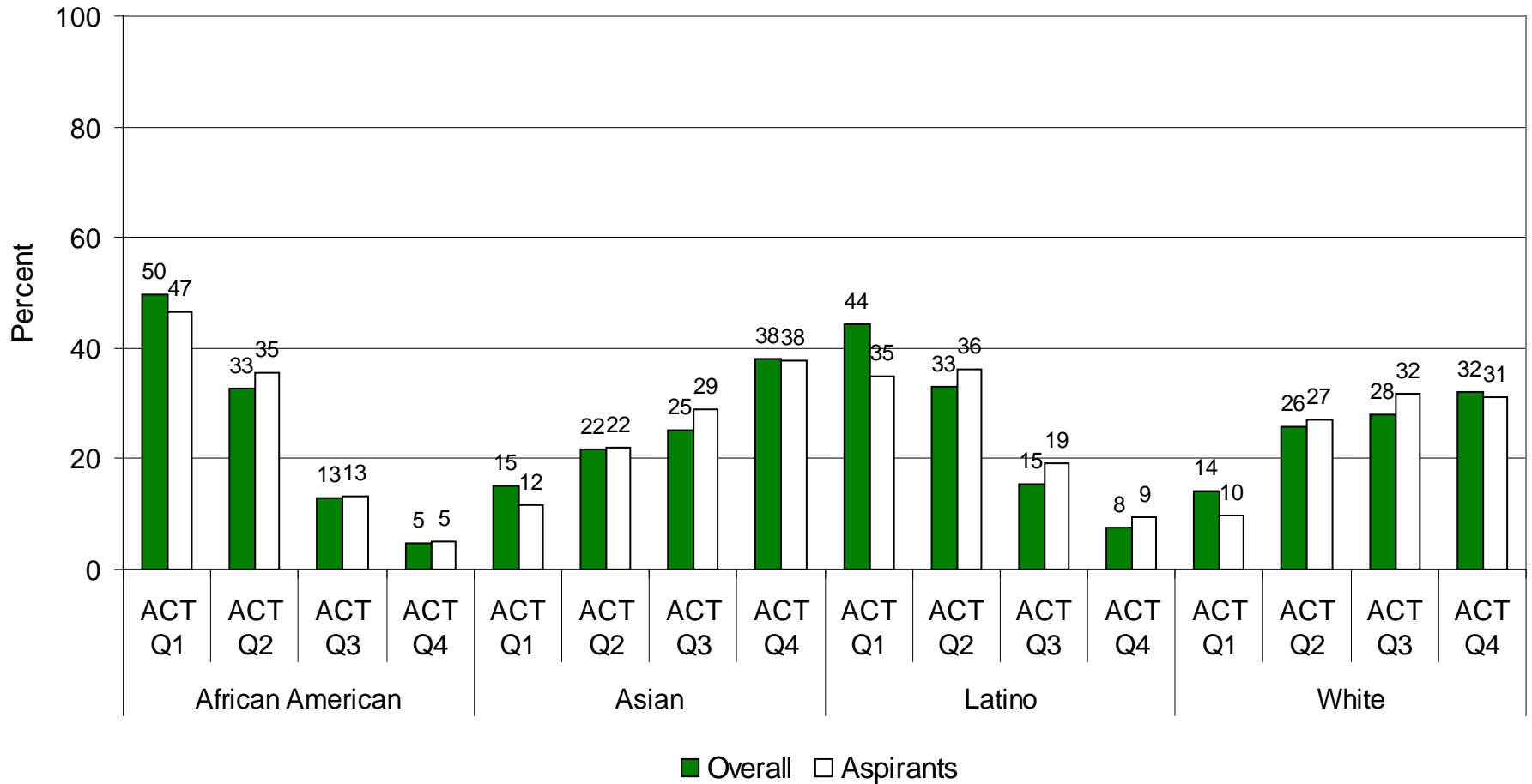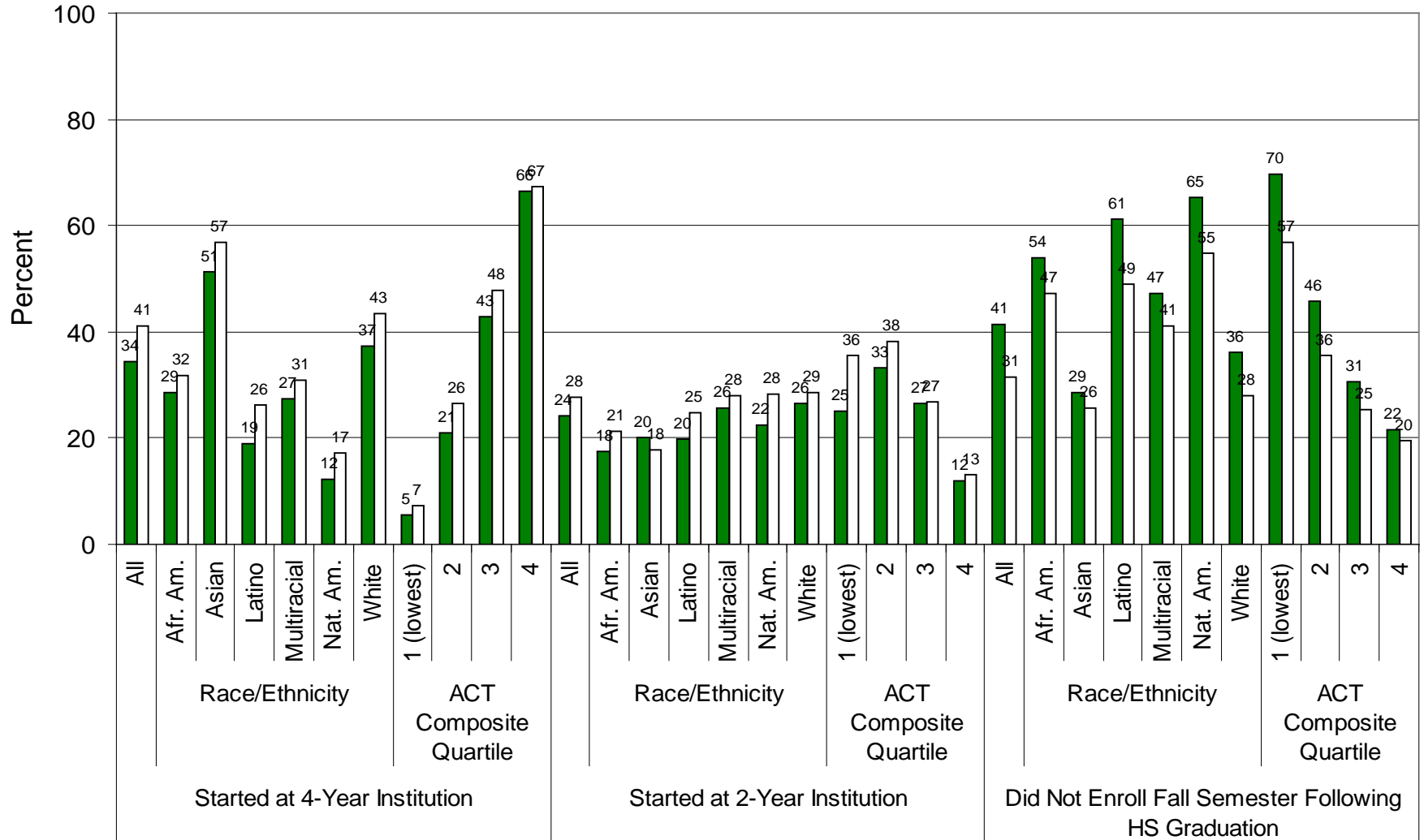
Preliminary Descriptive Results

High School Cohorts
Overall vs. Aspirants
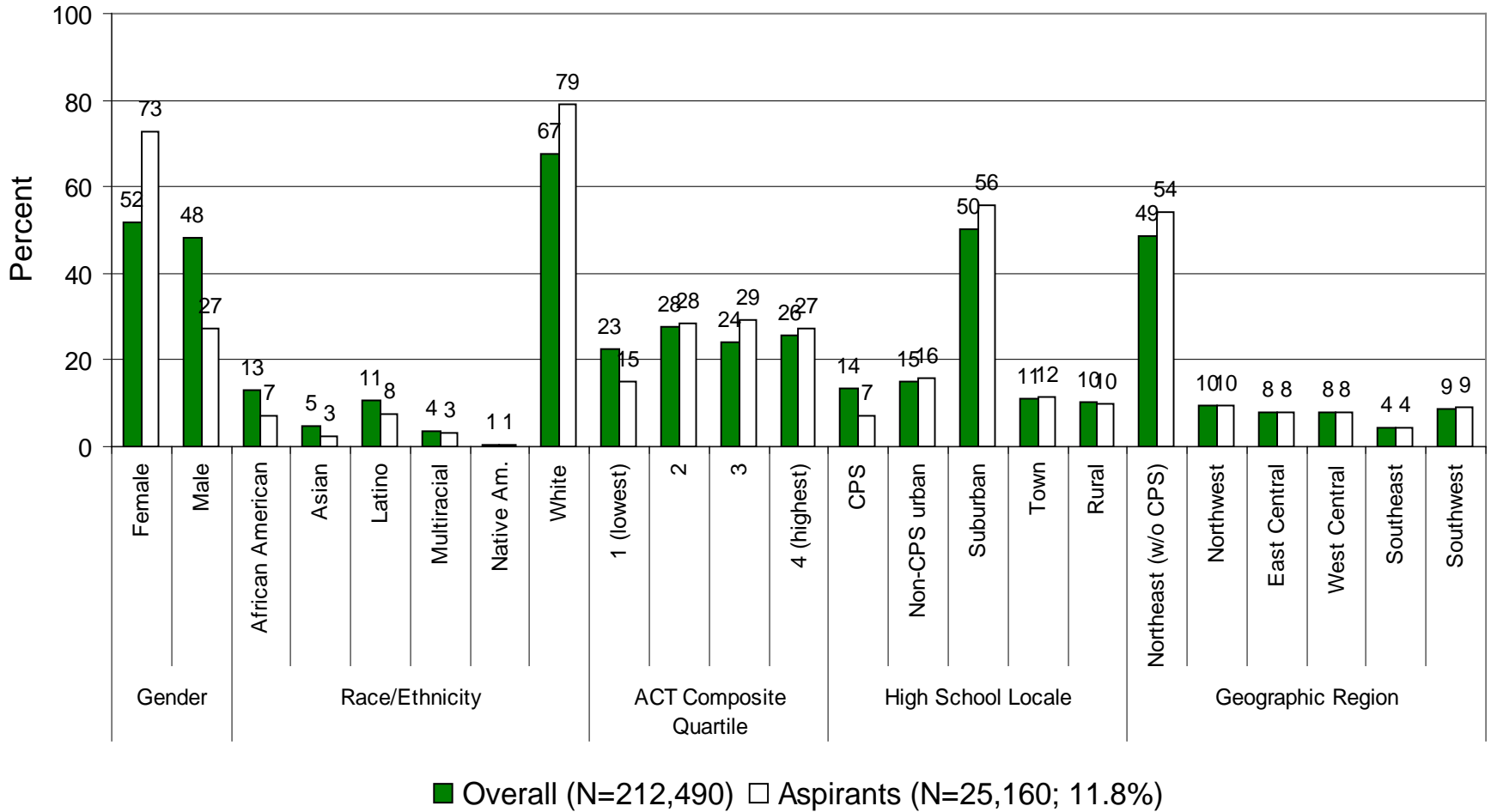
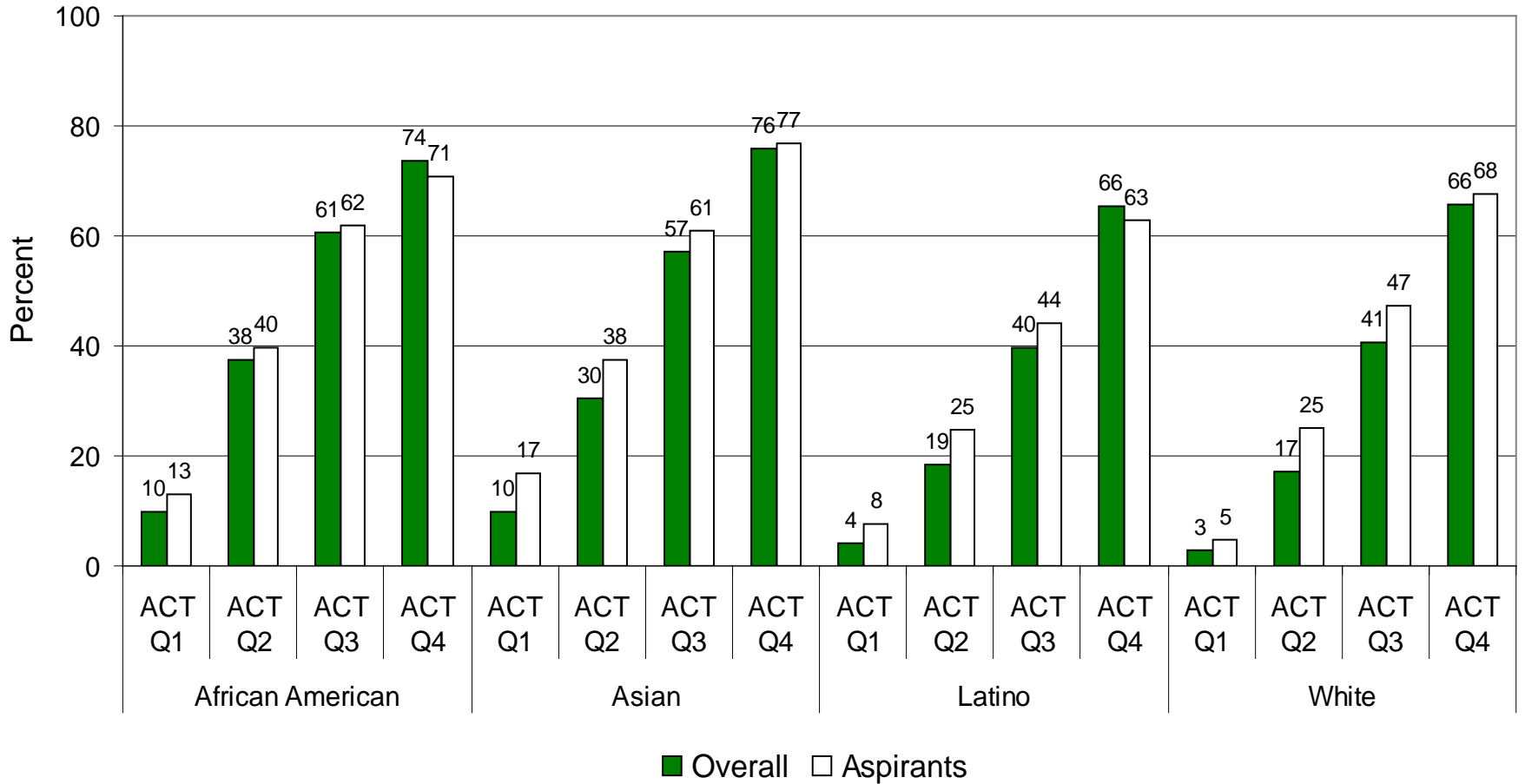# High School Cohorts
Overall vs. Aspirants
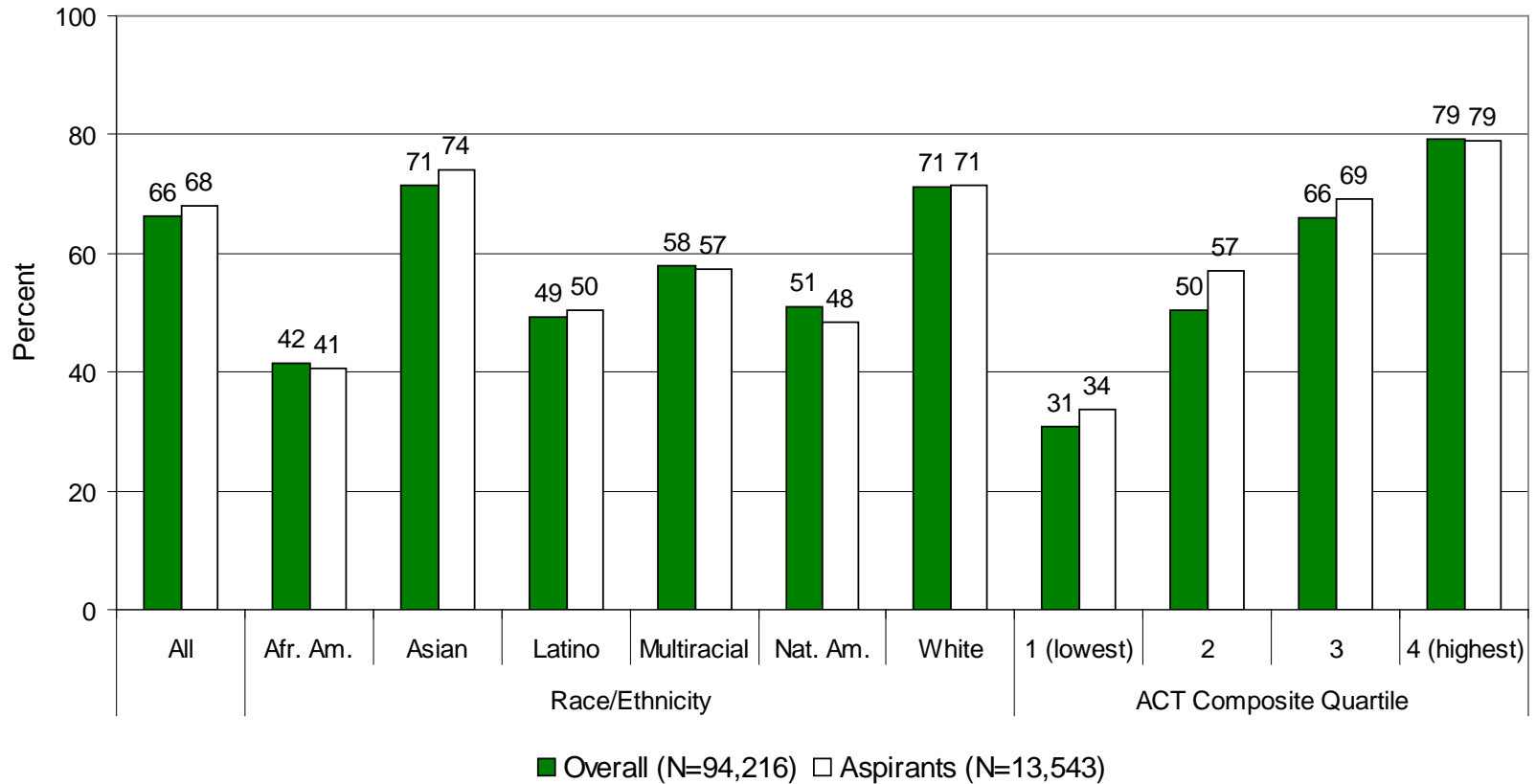
College Entry
Overall vs. Aspirants

Overall (N=212,490) □ Aspirants (N=25,160; 11.8%)

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College Entry: 4-Year Starters
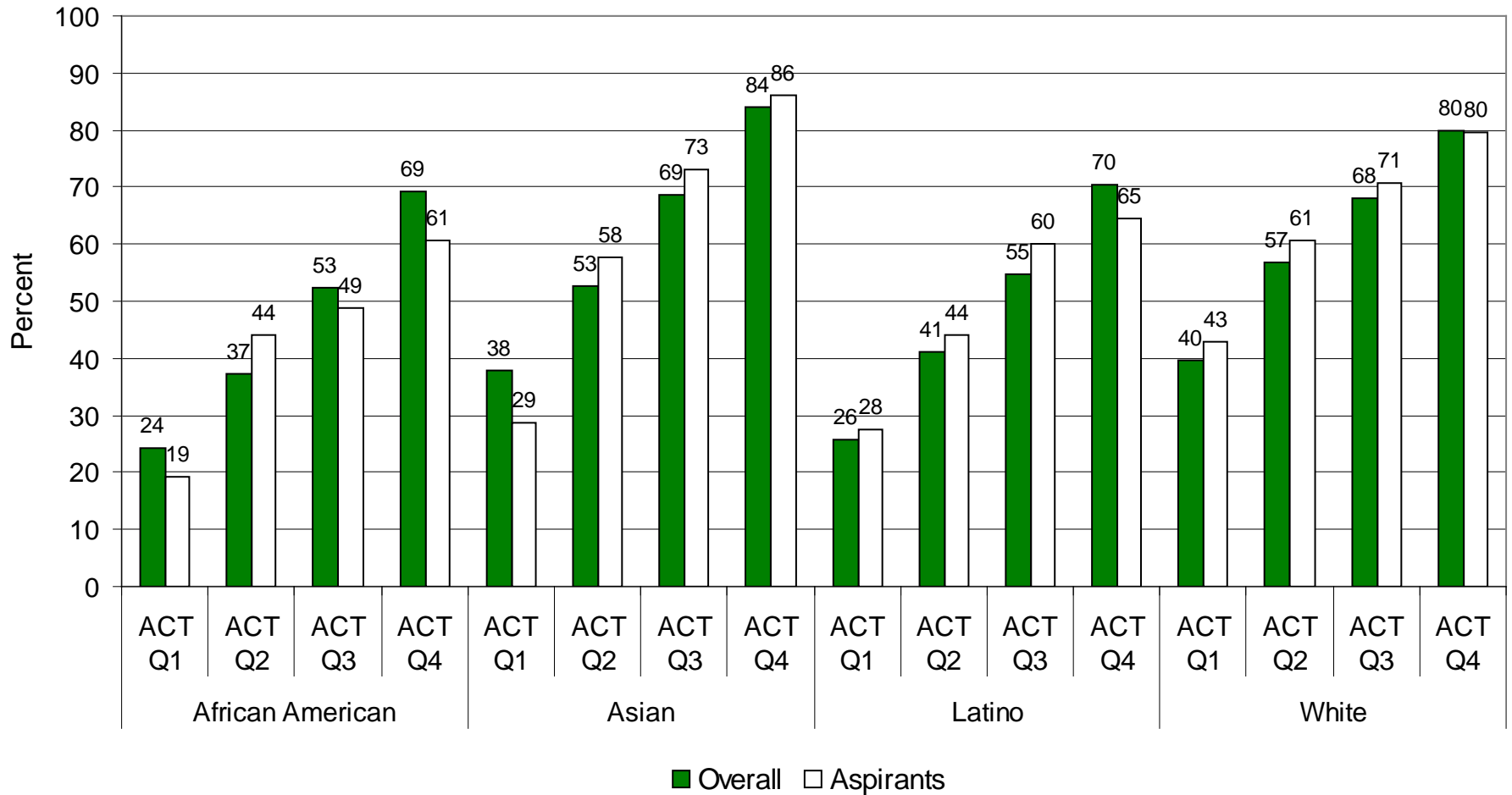# Overall vs. Aspirants

Bachelor's Degree Completers*
Overall vs. Aspirants

*As a percent of 4-year starters plus forward transfers from 2-year institutions.

Bachelor's Degree Completers*
Overall vs. Aspirants

*As a percent of 4-year starters plus forward transfers from 2-year institutions.

Significance of Project

- Studies show that both academically skilled teachers and racial/ethnic minority teachers have positive impacts on students (see, e.g., Rice, 2003; Villegas & Irvine, 2010).

- Efforts to improve teachers' academic skills can have a negative impact on teacher diversity (Lewis et al., 2010).

- Our goal is to inform the design of policies and/or practices to improve the supply of academically skilled, diverse individuals into teaching.

References

DeAngelis, K. J., & Presley, J. B. (2007). *Leaving schools or leaving the profession: Setting Illinois' record straight on new teacher attrition* (IERC 2007-1). Edwardsville, IL: Illinois Education Research Council.

Lewis, C. W., Shears, J., & Furman, R. (2010). An in-depth examination into the status of minority teachers in U.S. public schools: Crisis and strategies for improvement. *Teacher Education and Practice, 23*(1), 88-102.

Rice, J. K. (2003). *Teacher quality: Understanding the effectiveness of teacher attributes*. Washington, DC: Economic Policy Institute.

Vegas, E., Murnane, R. J., & Willett, J. B. (2001). From high school to teaching: Many steps, who makes it? *Teachers College Record, 103*(3), 427-449.

Villegas, A. M., & Irvine, J. J. (2010). Diversifying the teaching force: An examination of major arguments. *Urban Review, 42*, 175-192. doi: 10.1007/s11256-010-0150-1

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