

80% Four-Year Graduation Rate for Under-Represented Minority Students in STEM Degree Programs

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Academic Investment in Math & Science (AIMS)

- ◆ Founded in 2001
- ◆ Mission: To increase the number of women and under-represented minority students who earn undergraduate STEM degrees, proceed to earn terminal degrees in their fields and pursue highly successful careers in research and/or teaching.
- ◆ Helps to meet the growing need for STEM professionals
 - ✓ (by 2020 URM expected to be 32%, white males 30%)
- ◆ Helps students realize their full potential
- ◆ Helps to remedy past injustice and inequity

Key Features

- 💧 \$2,000 annual scholarship increments by \$500 each year
- 💧 Intense, residential Summer Bridge program
- 💧 Academic coaching & intrusive advising
- 💧 First-year seminar course both terms
- 💧 Monthly meetings of all scholars to strengthen community
- 💧 Peer Mentor Groups
- 💧 Participation in a wide array of STEM professional activities and events

Key Features

- ◆ Early undergraduate research
- ◆ Early intro to graduate and professional education opportunities and resources
- ◆ Early internships and co-ops
- ◆ Space for student independent and team study, collaboration, and socialization
- ◆ Array of support services
- ◆ Service opportunities
- ◆ Strong, supportive community of like-minded scholars, faculty, and staff

AIMS Summer Bridge Goals

- ◆ Create a strong sense of community, identity, and belonging
- ◆ Prepare students for the rigors of college-level study in STEM
- ◆ Instill in them a sense of the high expectations represented by the AIMS program and the array of support services available
- ◆ Equip students to make good use of those support services
- ◆ Induct them into the AIMS culture of striving for the pinnacles of success

AIMS Summer Bridge

- ◆ Four-week residential program
- ◆ Courses in mathematics, chemistry, physics, and biology
- ◆ Team Building
- ◆ Intro to Undergraduate Research
- ◆ Field Trips
 - ✓ E.g, Toledo Zoo research & engagement
 - ✓ African American Museum
- ◆ Service activities
 - ✓ E.g., invasive species, Habitat for Humanity, Dragon Boat Races

NSF S-STEM Grants

- ◆ Provided up to \$10,000 annual renewable scholarships
- ◆ Amount based on unmet financial need
 - ✓ Cost of Attendance – (Expected Family Contribution + Gift Aid)
- ◆ Students were high achieving but economically disadvantaged
- ◆ URM student 4-year graduation rate = 80%
- ◆ All GRAMS student 4-year graduation rate = 88%
- ◆ AIMS 4-year graduation rate = 60-65%
 - ✓ SUNY average URM 6-year rate = 30%
 - ✓ national all STEM <40%, URM 19-22%

Outcomes Analysis

- ◆ Economically disadvantaged students have lower probability of graduation and lower graduation rates
- ◆ Economically disadvantaged students who received financial aid sufficient to meet some of their financial need succeeded at higher rates than the average students in the same support system
- ◆ Conclusion: meeting financial need can be an effective means of increasing student academic success in STEM

Limitations

- ◆ Only students enrolled during the first three years generated graduation data
 - ✓ 10 URM, 16 total
- ◆ But no “Hawthorne” effect
 - ✓ All significant program features had been in place for several years
 - ✓ GRAMS students not visibly different from others
- ◆ No comparison cases of students who received scholarships but none of the support program
- ◆ Effects of individual program components have not been deconvoluted

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