The Future Physician: Education

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Figure 2 Number of physicians engaged in each of the three major professional activities. The number of physicians working in patient care has climbed steadily in the United States, whereas the ranks of physicians engaging in research and teaching have thinned. Figure source: Ley TJ, Rosenberg LE. The physician–scientist career pipeline in 2005: Build it, and they will come. JAMA. 2005;294:1343–1351. Copyright © 2005 American Medical Association. All rights reserved. Used by permission.
Figure 1 National Institutes of Health (NIH) research project grants by degree of principal investigator. As recently as 1970, the numbers of NIH grants to researchers with MDs and to those solely with PhDs were almost equal. By 2007, researchers with MDs received far fewer grants than those with PhDs alone. Figure source: Butler D. Translational research: Crossing the valley of death. Nature. 2008;453:840–842. Reprinted by permission from Macmillan Publishers Ltd.: Nature © 2008.
STUDY GROUP

R01 Type 1 Applications, FY2000-06, n=106,368

- The distribution is similar for all RPG applications (n=205,106)
- This distribution is similar to the composition of medical school faculty, as reported by AAMC.
- Analysis sample was limited to PhDs (n=83,188 applications) from (n=40,069 applicants)
- Related or revised submissions received within 2 years of the original application were included together

Ginther et.al 2011
Main Conclusions of Ginther et al.: Differences in Award Rates

- Black and Asian R01 applicants are significantly less likely to receive a Type 1 R01 award.

- Differences in Asian applicant award rates related to US Citizenship.

- Even after controlling for factors that influence the likelihood of success, Black applicants are still 10 percentage points less likely than White applicants to receive a Type 1 R01 award.
Our Mission

• Morehouse School of Medicine is dedicated to improving the health and well-being of individuals, families, and communities; increasing the diversity of the health professional and scientific workforce; and addressing primary healthcare needs through programs in education, research, and service, with emphasis on people of color and the underserved urban and rural populations in Georgia and the nation.
Georgia Applicants/Matriculates to Medical School (2001-2010)
State of Georgia (Demographics)

Georgia is a net exporter of black medical students

Population (n=9.7 million)

Georgians Applying to US Medical Schools (n=1,211)

Georgians Entering US Medical Schools (n=480)

Georgians Entering GA Medical Schools (n=306)

75% remain in GA

50% remain in GA

☑️ Non-Black  ☑️ Black

Georgia is a net exporter of black medical students.
African American Medical School Graduates (2002-2010)


Count: 2,003, 2,005, 2,007, 2,009, 2,010

AA Graduates
All. U.S Graduates
Exam Scores Exceeding “expected”

USMLE Step 1 Scores, 2011

Entering MCAT, Class of 2013
US Black Applicants, Acceptees by MCAT Range

Mean MSM MCAT score 27
STEM Pipeline in 2007

1997
3.8 Million 9th Graders

K-12

2001
2.7 Million HS Graduates

1997
3.8 Million 9th Graders

2001
1.7 Million College Freshmen

2007
233,000 Total Stem Graduates

POTENTIAL IMPACT

GRADUATE SCHOOL

COLLEGE

MOREHOUSE SCHOOL OF MEDICINE
STEM Pipeline — Leaking Badly

In 2001, there were a bit more than 4 million 9th graders. Four years later, 2.8 million of them graduated and 1.9 million went on to two- or four-year college; only 1.3 million were actually ready for college work. Fewer than 300,000 are majoring in STEM fields and only about 167,000 are expected to be STEM college graduates by 2011.

Source: NCES Digest of Education Statistics; Science & Engineering Indicators 2001
Four- and Five-Year Completion Rates of 2004 Freshmen, by Initial Major Aspiration and Race/Ethnicity

Report from The National Academies, September 2010
STEM Workforce & Education Challenges

• Many students never make it into the STEM pipeline, because of inadequate preparation in math and science or poor teacher quality in their K-12 systems.

• Many who are academically qualified for postsecondary studies in science and math fields at both the two- and four-year levels, don’t pursue those programs. They might be dissuaded by disappointing postsecondary experiences, high tuition or demanding curricula and courses of study, or the lack of role models with whom they can identify.

• The low engagement with STEM-related learning is particularly acute among minority, female, and lower-income students, who compromise a growing proportion of the total college-going public.

Effective STEM Pipeline Strategies

• Increase STEM literacy among students, parents, teachers, and policy makers
• Provide role models and demonstrable paths for success in which students can envision the accomplishment of their goals
• Be transparent with students about the STEM education and career statistics for the U.S. and underrepresented minority groups
• Provide early exposure to enrichment and research opportunities to foster an ongoing love for/interest in STEM learning
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U.S. STEM Education Pipeline

- 1997, 9th Graders - $3.8 \times 10^6$
- 2001, High School graduates – $2.7 \times 10^6$
- 2001, College freshmen – $1.7 \times 10^6$
- 2007, Total STEM graduates – 233,000

[National Science Board, 2010]
STEM Enrollment in Georgia HBCUs (2008)

- Spelman
- Morehouse
- Albany State
- FVSU
- Paine
- Savannah State

- STEM Enrollment
- Total Enrollment