

The Status of Women and Minorities in Physics at MIT: A Look at the Last 35 Years

Laura A. Lopez
MIT Center for Space Research

Introduction

As one of the United States' most prominent technical schools, the Massachusetts Institute of Technology has strived to improve the status of women and underrepresented minorities in science, engineering, and technology. Throughout its history, MIT has undertaken numerous initiatives and policies to promote typically disadvantaged groups in these fields. Aware of the benefits of diversity, MIT consistently based admissions on merit and potential rather than gender and race. With this belief, MIT accepted its first female student in 1871, and its first African-American student in 1889. The first black woman attended MIT in 1905, the first African-American faculty member was hired in 1955, and in 1963, Prof. Emily Wick '51 became the first woman to receive tenure.

In 1968, MIT began a massive campaign to increase numbers of female and underrepresented minority students. Working with student organizations, MIT addressed the recruitment, admissions, and retention of women and certain ethnic groups. The results of this initiative are evident in the demographic trends in every department, including physics. I present the data from the last thirty-five years as a means to assess the status of women and underrepresented minority students in physics at MIT.

Undergraduate Data

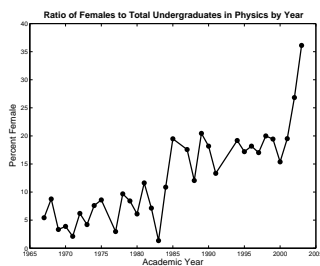


Figure 1: A plot in the trends in female representation in undergraduate physics. Despite some variation year to year, an overall increase in numbers of women has occurred. The sharp rise in the last three years may be attributed to the new '8B' option with relaxed physics requirements to facilitate interdisciplinary study.

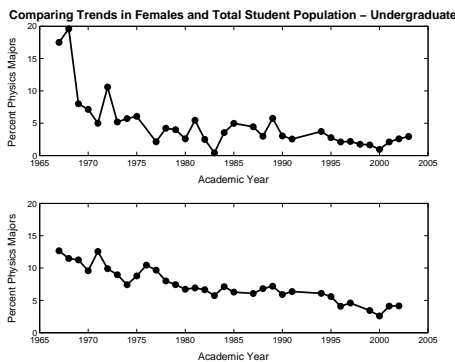


Figure 2: The top graph shows the percentage of females majoring in physics at MIT; the bottom graph shows the percentage of all undergraduates majoring in physics. Both plots show a gradual decrease in numbers, but the female representation more sharply declines during the late 60s and early 70s.

Graduate Data

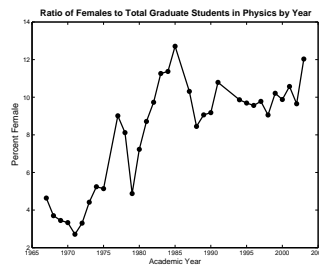


Figure 3: A plot in the trends in female representation in graduate physics. The increase in females is not as prevalent as the change in the undergraduate representation. Initiatives by the Dean for Student Affairs and the Graduate School assisted in the improvement of these numbers.

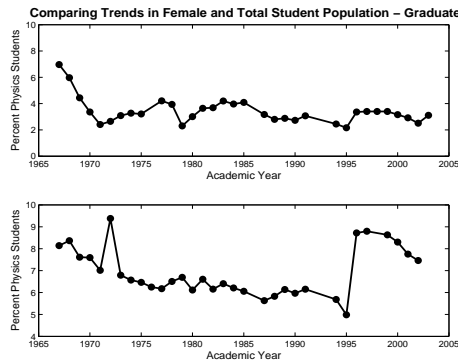


Figure 4: The top graph shows the percentage of female graduate students in physics at MIT; the bottom graph shows the percentage of all graduate students in physics. Both plots convey an initial decline in numbers, but the total student population has a drastic increase in the last ten years, while the female representation has remained constant.

Minority Data

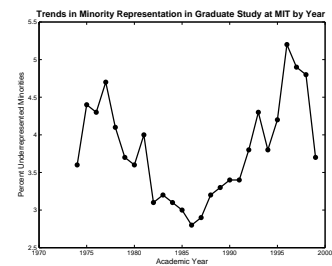


Figure 5: A plot of the total minority graduate population at MIT. Increased efforts to recruit and retain minorities caused rises in these numbers. However, overall, recent declines have occurred, producing numbers about equal to those of the mid-1970s. Minorities represented are African-Americans, Hispanic-Americans, and Native-Americans.

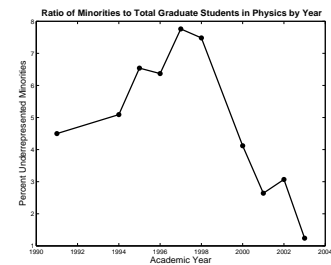


Figure 6: A plot of the trends in percentages of minority graduate students in physics at MIT. Currently, representation is at its lowest point in the last ten years. Minorities included are African-Americans, Hispanic-Americans, and Native Americans.

Conclusion

Through careful examination of the data from the last thirty-five years, it is evident that the status of women in physics at MIT has improved. The numbers for graduate students show a gradual increase of 7% since 1968, while the percentages for undergrads convey a sharper rise, from 5% to 35%. Dramatic improvement occurred with the creation of 8B: the new physics major with flexibility to facilitate interdisciplinary study. The trends of females in physics, both at the undergraduate and graduate level, do not match the trends of the total students in physics as shown in Figures 2 and 4. This result may indicate that females are changing to other fields at a higher rate than the collective student body. Females are more prevalent in undergraduate physics than in graduate study of the field, implying that only a small number of females pursue doctoral degrees after receiving their bachelors. Thus, campaigns should continue to increase numbers in undergraduate study and to encourage further study after college.

Data was unavailable before the early 1990s on the representation of minorities in the physics department. From the limited numbers shown in Figures 5 and 6, it appears that minorities have not improved their status at all. Despite increases in the mid-1970s and mid-1990s, representation has decreased to a record low. Presently, only three underrepresented minorities are pursuing graduate degrees in physics at MIT (or 1% of the department). This result could be due to statistical fluctuation. Nonetheless, MIT, and specifically the physics department, should address this issue and focus on recruitment and retention of African-Americans, Hispanic-Americans, and Native Americans.