

FOCUS: A Recruiting Initiative for African American Graduate Students at Georgia Institute of Technology

Sundiata K. Jangha¹, Robert G. Haley², Dr. Calvin Mackie³

¹ George W. Woodruff School of Mechanical Engineering

²College of Engineering,
Georgia Institute of Technology

³Department of Mechanical Engineering, Tulane University

Introduction

In today's changing world, many industry, government and academic leaders have reached the same conclusion regarding diversity: "Diversity is no longer a moral imperative, it is a key to survival." While diversity is a commonly used word in many circles, it is misunderstood by some and maybe even avoided by others. A common acceptable definition of diversity when addressing organizational behavior is "an inclusive collection of individuals and groups who bring varied human characteristics."

Diversity in graduate school is no exception. If our workforce and professional ranks are to be diverse, the institutions of higher learning must be committed to diversity, encourage diversity and provide an atmosphere to promote diversity. In Academia, diversity has initially been addressed on two levels: gender and ethnicity. As Dr. C. Mojica Rey stated "Successful diversity programs level the playing field for women and minorities by addressing their needs and teaching undergraduates the unwritten rules of academic science." [1]

The primary goal of this paper is to present an overview of a program Georgia Tech established in 1992 to address the dearth of African American graduate students in Science, Mathematics, and Engineering. The FOCUS program is a graduate school awareness event held annually during the Dr. Martin Luther King, Jr. Holiday Celebration. The three and one-half day event is designed for African American undergraduates to increase the awareness of, explore the benefits of, and encourage the participants the application to graduate school – if not at Georgia Tech then another institution. The purpose in writing this paper is to import information about Georgia Tech's effort, which will aid other academic institutions in formulating and implementing similar programs to increase diversity within the ranks of their graduate student bodies. While FOCUS affects all of the colleges on Georgia Tech's campus, the concentration for this paper from an analysis standpoint will be on the interactions between the FOCUS program and the College of Engineering (CoE). This is the original college for the program and as such,

has the most consistent data with respect to the impact that FOCUS has achieved. The secondary goal of this paper is to study the effectiveness of FOCUS with respect to increasing the number of African Americans receiving graduate degrees in engineering from Georgia Tech.

Over the course of the past two decades, there has been a growing concern over the decreasing number of U.S. students that receive undergraduate degrees in engineering and sciences and matriculate into graduate programs to pursue advanced degrees. While this decrease affects the spectrum of graduate programs, it is especially significant in the science and engineering genres. With the declining pursuit of advanced degrees, the nation stands in need of some modicum of increase in the number of degrees being produced. The need for individuals with advanced degrees, both within and without the technology sector is consistently growing. Yet, the number of Americans qualified to fill those positions continues to dwindle, and one of the more glaring cases of this shortage is in the African American community. This disparity is, in part indicated by the disparity between the African American representation in the overall graduate population and the demographic representation in the U.S. [2,3]. One of the key factors in this regard is to increase the awareness and exposure to graduate education for African American students during their matriculation as undergraduates.

It is nearly impossible to quantify all of the causes of the educational disconnect among African American students with respect to graduate school. However, one piece of anecdotal evidence as to the causes is contained in a common response from African American undergraduate students and revolves around the central theme of lack of exposure and opportunity. This lack of exposure and awareness of graduate studies gave rise to a niche, which Georgia Tech decided to address via the FOCUS program. Having the program at Georgia Tech allows the student participants to experience graduate education at a well-respected Research-Extensive institution [4,5] renowned for its commitment to conferring advanced degrees in engineering to African Americans.

Georgia Tech has established a very viable pipeline for the evolution of African American undergraduates into African Americans with advanced degrees in engineering. The success that Georgia Tech has had in this regard is a function of many contributing factors including, but not limited to, the strength of the dual degree program with Historically Black Colleges and Universities (HBCUs), the strength of the overall graduate engineering program, and its location in Atlanta, which has become known for its large upwardly mobile African American community [6]. At the same time, a very important contributor is the institutional commitment, academically, professionally, and financially to the success of the students that enter the various graduate programs. Through this commitment, FOCUS and various other programs administered by the Office of Minority Education and Development (OMED), Georgia Tech has been able to establish a critical mass of African American graduate students that enables the institution to maintain a high level of degree production at the undergraduate level. The benefits of this critical mass are threefold. First, the critical mass serves as an excellent recruiting mechanism for other aspiring students, which can establish an immediate rapport, when recruiting the target demographic. This is evidenced by the fact that Georgia Tech sends a contingent of 15

students, on average, to the National Society of Black Engineers National Convention annually, solely for the purpose of recruiting undergraduates. Secondly, the critical mass provides a sense of community for the incoming and matriculating students. This is embodied in the Black Graduate Student Association (BGSA), which maintains a membership of approximately 75 - 100 students per year. The final benefit is mentoring. This function is performed within BGSA and through casual interactions between students within the same degree program.

The FOCUS Program

FOCUS is first and foremost a graduate school marketing program. The program's goal is to expose African-American students to the benefits and increased opportunities of a graduate degree, then recruit them to pursue a graduate degree at Georgia Tech. However, if students do not choose to enroll at Georgia Tech, the hope is that they will be motivated to apply to others graduate school. In this section four aspects of FOCUS are discussed: the history, the data, the participants, and the outcomes.

A Brief History of the FOCUS Program

Student participation in FOCUS has always been by invitation only. FOCUS administrators and volunteers contact universities across the nation, asking for nominations to the program enabling Georgia Tech to attract the most qualified students. Through the years, Georgia Tech has developed a strong network with HBCUs, and traditional majority institutions and both have been supportive and cooperative in identifying their top students

The first FOCUS program attracted 50 students with an average GPA of 3.2. Since then the student attendance has grown in both number and quality. In 2001, more than 250 students from 91 universities nationwide were in attendance, with an average GPA of 3.4.

As attendance and quality have increased, so has the scope of FOCUS. In 1994, the FOCUS program became more comprehensive; expanding to more actively involve Georgia Tech's other five colleges (College of Architecture, College of Computing, College of Sciences, Dupree College of management, and Ivan Allen College) in addition to the College of Engineering. As the Institute's administrative commitment grew, so did student involvement, with the BGSA officially joining the effort as a campus sponsor. The role of BGSA in FOCUS prior to this point was significant, however it was unofficial. In 1994 BGSA incorporated FOCUS into the fabric of the organization creating a position with the specific charge of managing BGSA's role in FOCUS. At the same time, the FOCUS program released the management of the logistics and student interactions to BGSA to direct and organize. This point is important, as the critical mass of students, and their active participation in both planning and implementation, from the very beginning, was crucial to the success of FOCUS. Originally the program was aimed at undergraduate seniors. However, in 1996, invitations were also extended to juniors in order to expand the demographic exposure and to stimulate graduate school awareness earlier in the

undergraduate tenure.

Since the inception of FOCUS, more than 1/3 of Georgia Tech's African-American graduate students have attended FOCUS. Georgia Tech's retention rate for graduate students on both the Masters and Ph.D. levels, who attended FOCUS is 92 percent. Perhaps most importantly, more than 1,800 highly-qualified African-American undergraduate students have attended FOCUS and have been exposed to the merits of graduate education. These students are the future business, education, civic, and political leaders of our country. The contacts and knowledge they have gained from FOCUS will help them shape the future of our nation.

FOCUS Program Data

In the first decade of its existence, FOCUS has brought over 1,500 prospective graduate students to the Georgia Tech campus. Figure 1 illustrates the diversity in program attendance and participation across the colleges over the first ten years. As evident in Figure 1, CoE dominates; however, significant strides have been made by the other five colleges to become more involved. Figure 1 however does not display the increase in participation from the other colleges over the years. More specifically, the CoE has constituted as much as 86%

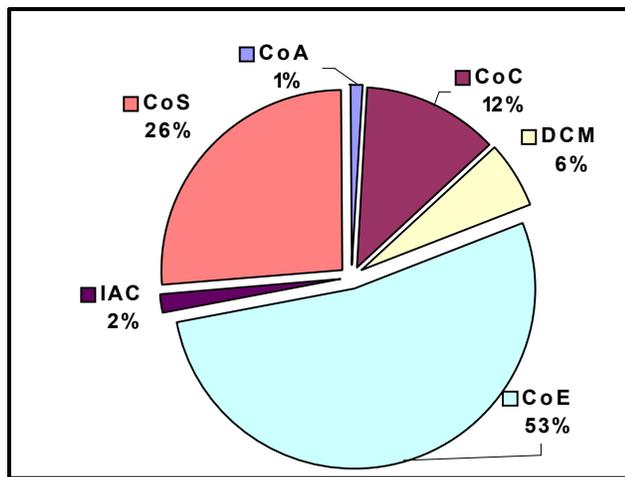


Figure 1 FOCUS Attendance by College 1992 - 2001

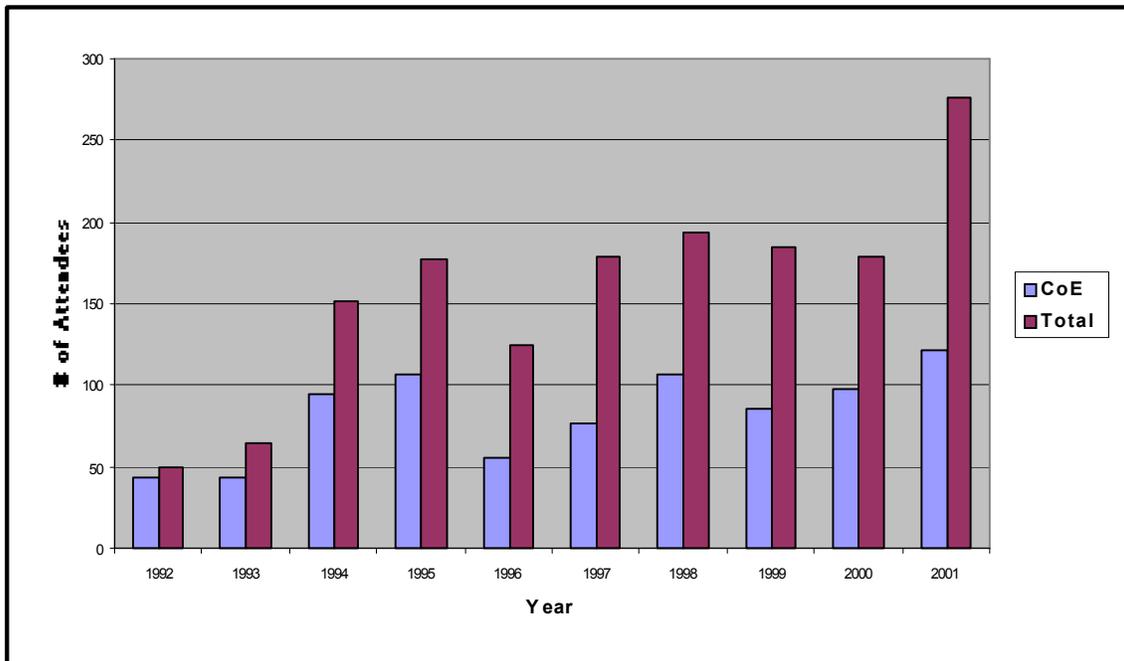


Figure 2 Total Attendance by Year: CoE vs. FOCUS
Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition
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of the program participants (1992), and as little as 42% (1997), with an average of just over 57% of the attendees. Figure 2 shows a comparison between the attendance for the program and that of the CoE. As shown in Figure 2, the CoE attendance had decreased in weight, in that the percent of students in the FOCUS program for engineering has decreased. One can also deduce from Figure 2 that the attendance of the program is somewhat proportional to the attendance for the CoE. This is indicative of the emphasis on and effort put forth by the CoE with respect to the program. The CoE serves as a baseline for the entire FOCUS program, as it has from the very beginning, but as the program evolves and becomes more diverse among the other colleges, this effect is becoming more diluted. Inspection of the more recent years in Figure 2 illustrates this clearly, as the growth follows roughly the same trend, but the attendance for the program is growing at a faster rate than that of the college. This trend is duplicated, to some degree, by the College of Sciences, though not as directly or as significantly.

FOCUS Program Participants

While the focal point of FOCUS is graduate school, the program has expanded to create an environment where a seamless pathway from high school to a professional career is portrayed. What begun as a program for undergraduate students has evolved into one that involves a more complete spectrum from high school students through alumni. Eventually the loop will be closed and FOCUS will also serve as a portal to bring alumni back to graduate school. This evolution incurred an expansion to the program itself to accommodate these different constituents.

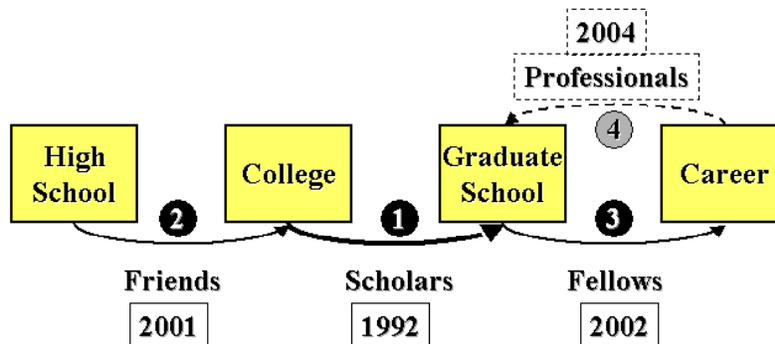


Figure 3 FOCUS Program Components

In totality, FOCUS now consists of three separate but interdependent programs, with an additional program in development (see Figure 3). The components of the program are:

❶ FOCUS Scholars - This program (the original component) is designed to increase the awareness of undergraduate juniors and seniors of the advantages and benefits of receiving an advanced degree. The scholars receive an overview of Georgia Tech's graduate degree programs, a review of financial sources and assistance in the application and decision-making process involved with selecting a graduate school. During the FOCUS weekend, the Scholars:

- Participate in an opening program hosted by the BGSA and sponsored by a corporate partner. Representatives of the current graduate student body give testimonials on life at Georgia Tech and why they decided to attend.
- Gather by college of interest for a welcome by the respective dean of the college - Architecture, Computing, Engineering, Management, Sciences, and Ivan Allen.
- Visit the academic units and research laboratories according to interest. Also, they are given an opportunity to interact and ask questions of the faculty and current students in the department.
- Meet with representatives of the Graduate Admissions Office to discuss admissions timelines, expectations, sources of funding, application procedures and more.
- Interact with current students and alumni via panels to hear real life experiences about academic life and professional careers.
- Visit historic sites around Atlanta, as well as experience the cultural and social aspects of the city.

② FOCUS Friends - This program seeks to encourage academically gifted high school seniors to explore the benefits of a Georgia Tech education. The Friends are exposed to our undergraduate degree programs, support programs and other student services. They also benefit from the opportunity to interact with other top students who have chosen to pursue advanced degrees in their fields. During the FOCUS weekend, the Friends:

- Observe the classroom experience of undergraduate courses.
- Hear the representatives from the six colleges at Georgia Tech on topics including majors, minors, and international study.
- Tour the campus, which includes the residence halls, research laboratories, and recreational facilities.
- Learn about the support programs and the importance of team interaction, study habits, and getting off to a fast start.
- Hear from the admissions staff regarding application, admission requirements, admission cycle and deadlines.
- Hear from current undergraduate students regarding the Georgia Tech experience including academic life, student life, organization involvement, challenges and successes.
- Learn about time, money, and grade management, health, wellness, safety, and other support resources available.
- Attend a dinner hosted by President Wayne Clough, where a prominent figure is the keynote speaker.
- Attend Georgia Tech's Ecumenical Service to celebrate the birthday of Dr. Martin Luther King Jr. where another prominent figure is selected to bring the message.

③ FOCUS Fellows - This program encourages African American doctoral students who are one or two years away from graduation to consider an academic career. In addition, the Fellows serve as outstanding role models for the high school and undergraduate students attending FOCUS. Postdoctoral individuals and researchers holding Ph.D. degrees are also eligible for the program. Individuals pursuing or holding

degrees in engineering, computing, the sciences, mathematics, architecture, and management are invited. The Fellows' weekend includes:

- Attending an opening session, which features a prominent academician who discusses why it's important for African American doctoral students to consider academia as a career.
- Developing a curriculum vita and personal statement.
- Participating in sessions with topics including Research- The Dissertation and Beyond; Teaching - Teaching Techniques/ Becoming An Educator; and Service- Making a Limited but Valuable Service Contribution. The participants discuss the qualifications necessary to obtain an academic position at a research institution.
- Visiting the academic units and research laboratories according to teaching and research interest. Participants have an opportunity to speak with key administrators and faculty within the unit.
- Discussing with current faculty how they have successfully progressed through their academic career. The participants have an opportunity to interact and ask questions of the African-American faculty at Georgia Tech.

④ FOCUS Professionals – This initiative is intended to expose young African American professionals to the advantages and benefits of formally furthering their education. The Professionals will experience a track similar to that of the Scholars where the emphasis will be placed on matriculation and retention issues for graduate program. The main difference is that the professionals will also interact extensively with the Office of Continuing Education and Distance Learning, as that may be the vehicle that some Professionals use to attend Georgia Tech as graduate students. This initiative is scheduled to be added to FOCUS 2004.

FOCUS Alumni - Each year approximately 20 -25 former FOCUS Scholars, who matriculated and received an advanced degree from Georgia Tech return to take part in the program. In addition to the informal interaction with the FOCUS Friends and FOCUS Scholars at various events, alumni panels are convened. Topics discussed are industrial careers, academic careers and entrepreneurship as well as life at Georgia Tech. In addition to the FOCUS alumni, all of the African American Georgia Tech graduate alumni are invited to attend the weekend's events. Alumni events include:

- Enjoying the President's dinner along with the FOCUS Scholars, Fellows and Friends and current Georgia Tech faculty, staff and students.
- Attending a State-of-the Institute with the Provost.
- Participating in alumni panels, thus having an opportunity to share their personal academic and career experience with the FOCUS Scholars.

These events and programs encapsulate the make-up of the FOCUS program. The next section addresses the actual statistics with respect to the students that have participated in the program.

FOCUS Program Outcomes

There are several potential indicators of program success. In this case, since the

main goal of the program is to increase the number of African Americans receiving advanced degrees from Georgia Tech, the main indicator would be Georgia Tech's performance in that regard. Research has determined that 23% of the FOCUS attendees between 1992 and 1999 for the CoE have gone on to enroll in graduate programs within the Georgia Tech CoE. Also, of the total African American graduate enrollment in the CoE in that same time span, 30% have attended the FOCUS program. Figure 4 presents a synopsis of the enrollment data.

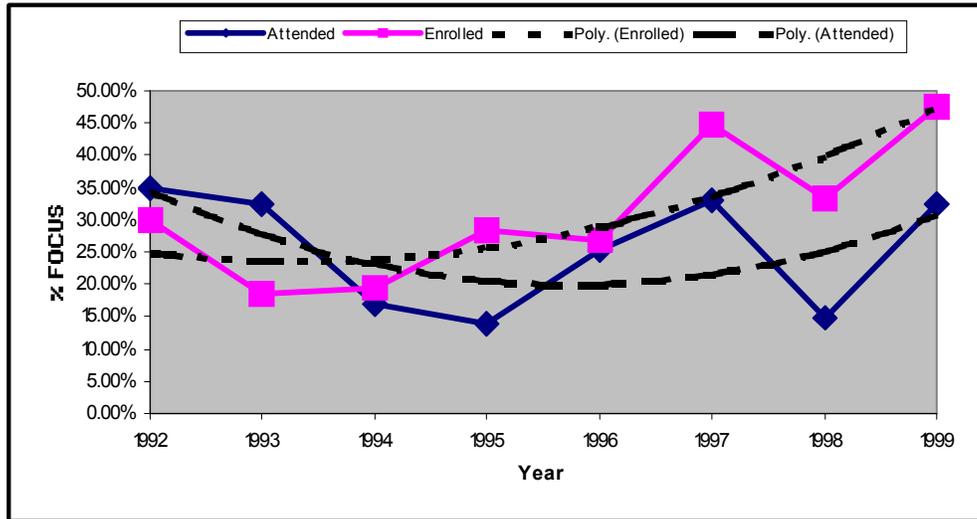


Figure 4 FOCUS Attendee Enrollments in CoE Graduate Programs

NOTE: The Polynomial Trend Lines (Poly.) are 2nd order.

One of the more impressive facts from these statistics is the fact that during the highest enrollment year over 47% of the African Americans enrolling at Georgia Tech, in the CoE were former Scholars of the FOCUS program. There was however a marked decrease in 1998, which is a function of two factors. First, the overall graduate enrollment in engineering nationwide decreased for that year, as it had been steadily since 1993 [5] due to the economic boom, which tends to decrease graduate applications. Secondly and more directly, the attendance for FOCUS 96 was low compared to previous years. Since the majority of FOCUS 96 Scholars were juniors, the resulting dip in percentage of enrollment did not manifest until those juniors graduated in 1998. Overall though, the polynomial trend lines (Poly.) shown in Figure 4 show both percentages increasing in recent years, and since this data is based on proportions, as the volume of FOCUS attendance increases, so will the volume of African American enrollment. This data deals with the front end of the matriculation continuum, enrollment. Just as important is the effect that the program has had on the back end of that same continuum, graduation.

In order to discuss the effect of FOCUS, it is necessary to examine the graduation rates both before and after FOCUS. Figure 5 illustrates the advanced degree graduation numbers for African Americans at Georgia Tech since 1984 (the year the first Ph.D. was conferred to an African American in engineering).

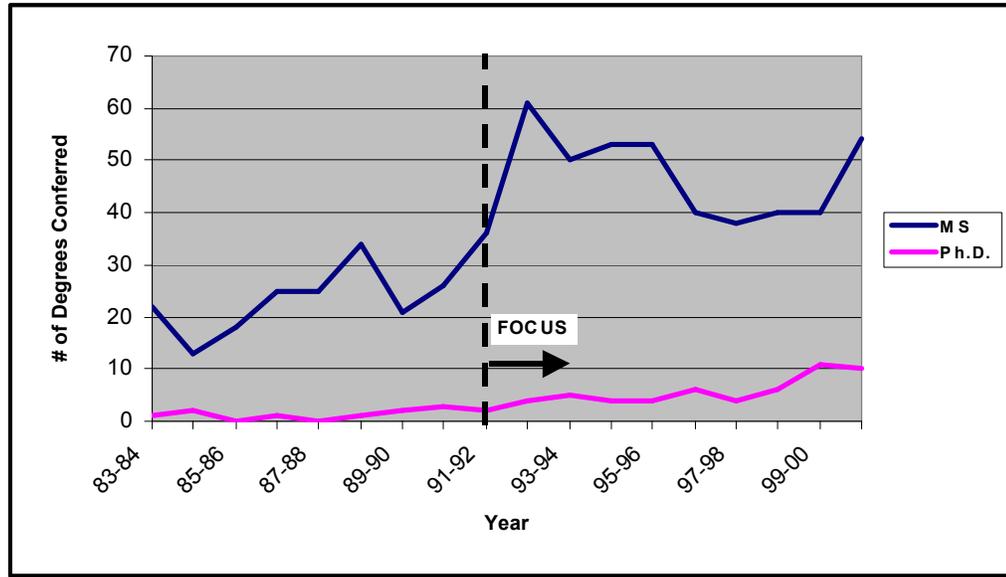


Figure 5 Advanced Degrees Conferred to African Americans in Engineering at Georgia

Tech [3]

As shown in Figure 5, the number of graduates with master's degrees increased drastically immediately after the first program. This is based on the assumption that some of the Scholars that enrolled were able to complete the MS requirements in one year (which is very feasible since Georgia Tech was on quarters at that time). Also, the level of production has been consistently higher than before the program even with the national enrollment drop-offs in the mid to late 1990's discussed earlier. At the Ph.D. level, the effect of FOCUS was delayed somewhat due to the time necessary to complete doctoral degree requirements. Assuming a minimum tenure of five years, the correlation is indicated in the 1996-1997 academic year. From that point forward the growth has been somewhat steady. The continued growth is in spite of the decreasing enrollment in the mid to late 90's nationwide and also serves as an indicator of the impact that FOCUS has had. The final indicator from this data is the average number of degrees conferred before and after FOCUS. This information is given in Table 1. The average gives a more concrete sense of the impact of FOCUS than Figure 5, in that the magnitude of the increase is more explicit. The time periods for before and after were determined based on the delayed effect with respect to degree completion.

	<u>Before FOCUS</u> (1983 – 1992) – MS (1983 – 1995) – PhD	<u>After FOCUS</u> (1992 – 2001) – MS (1996 – 2001) – PhD	% Increase
MS	24	48	100%
PhD	2	7	250%

Table 1 Average Number of Degrees Conferred to African Americans in Engineering at Georgia Tech [3]

While this data gives an indication of the overall effectiveness of the FOCUS program, it does not speak to the assortment of departments within the college that have increased in ranks due to the FOCUS program.

As important as the overall CoE data is the compositional data from the departments within the college. Figures 6 and 7 show the composition of both the FOCUS CoE attendees (Scholars who attended FOCUS to visit the CoE) and the FOCUS CoE enrollments (Scholars who went on to enroll in CoE graduate programs).

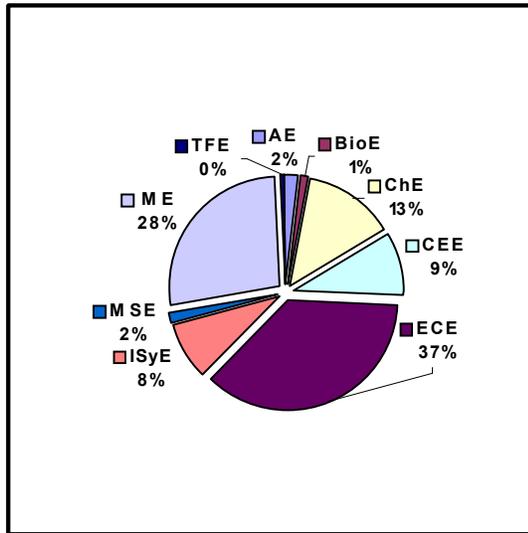


Figure 6 FOCUS Attendance for COE by Department

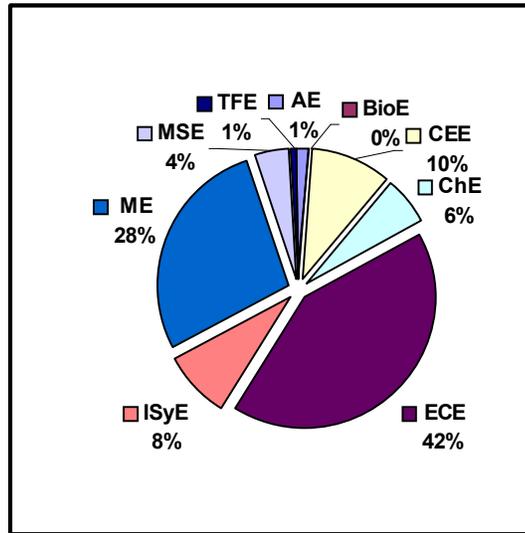


Figure 7 FOCUS Enrollment in CoE by Department

From these figures, it can be shown that there is an extremely high correlation (almost 1-to-1) between the participation level by a department and the matriculation into the graduate programs by the FOCUS Scholars (i.e. ME – 28% attendance, 28% enrollment). This suggests that, on a whole, the CoE is succeeding in its objective of convincing FOCUS Scholars that Georgia Tech is a good choice for their graduate education. This fact has been reaffirmed by the retention rate (meaning matriculation to graduation) for FOCUS Scholars, in CoE graduate programs is 92%. Of note is that the 8% that do not finish in CoE is comprised of some students who moved to other colleges within Georgia Tech.

In 2001, Georgia Tech conferred 11 Ph.D. degrees to African Americans in engineering [3]. This was the first time that one institution produced double digits in one academic year. Georgia Tech duplicated that feat in 2002 with 10 Ph.D. degrees (Note: 2002 data has not been included in the composite data) [8]. According to Black Issues in Higher Education, Georgia Tech is now ranked first in the number of master's and doctoral degrees in engineering granted to African-Americans [8]. The trend is on the upslope nationwide, and for Georgia Tech, that is in large part due to the FOCUS program. This has become evident on a national scale and that has led to other institutions starting similar programs nationwide.

Conclusions and Lessons Learned

In an effort to increase the number of advanced degrees conferred to African Americans Georgia Tech has successfully created and developed a recruiting initiative called FOCUS. FOCUS is designed to emphasize exposure to the benefits and increased opportunities of a graduate degree, and then recruit the student participants to pursue a graduate degree at Georgia Tech. Over time the program has expanded to incorporate more aspects of the educational continuum by including high school, undergraduate and graduate students, and alumni. Data has shown that FOCUS has had a significant impact on the number of advanced degrees being awarded to African Americans.

Here are some key factors for success:

1. Support services for minority students were already in place at Georgia Tech (e.g. BGSA, OMED, etc...).
2. There was an institutional commitment at all levels from the very beginning of FOCUS.
3. FOCUS was established as a marketing program as opposed to an orientation-type program.
4. FOCUS from the beginning was highly organized and well planned with very little wasted time for the attendees.
5. FOCUS has been institutionalized programmatically to reduce the variation, and therefore the planning costs with respect to both time and resources.
6. The Dual Degree Program served as a pipeline for bringing in undergraduate students who could then become graduate students.
7. Atlanta served as a good backdrop for an African American initiative.

Equally important are the lessons that were learned along the way that affected change in the program. Those include:

1. Student involvement (graduate and/or undergraduate) in both planning and implementation is critical. Students are typically much closer in age and experience to the target demographic than administrators and faculty.
2. Early access to undergraduate students lends an advantage. With FOCUS taking place in January, for a senior that is very late in the graduate school preparation cycle, while for a junior that is right at the beginning.
3. The experience has to be contextual. All levels of student interest, from the student seeking general information to the student with very specific questions and concerns, have to be addressed within the program.
4. Highly visible participants (e.g. speakers, corporate partners, etc...) lend credibility to the program.
5. Alumni involvement is important to the process. Students without an appreciation for the value proposition of graduate school gain a great deal by interacting with people who can speak directly to the value-added.
6. Undergraduate institutional involvement requires relationships not contacts. To use blind marketing for FOCUS and maintain the quality of the students would be nearly impossible. Instead, by forming relationships with the

undergraduate institutions, there are individuals who share in the commitment to FOCUS being successful and therefore send the highest caliber students to the program.

7. Opportunities for informal interaction with the current students and faculty must be integrated into the program. Students want to get a chance to experience the underlying culture of the institution as well as the academic and research activities.
8. A top down approach at the host institution can be very beneficial with respect to the allocation of funding and encouraging support throughout the institution.

In conclusion FOCUS is an effort to create access for African Americans at the graduate school level. It has been successful because the institution our partnering institutions, our sponsors and the city of Atlanta have joined hands to create an atmosphere that welcomes and includes everyone.

Acknowledgements

The authors gratefully acknowledge the continuing support given by Dr. William Wepfer, Dr. John White, Dr. G. Wayne Clough, Dr. Jack Lohman, Dr. Jean-Lou Chameau, Dr. Mark Smith, the FOCUS support staff, the College of Engineering, the Office of the President, BGSA, and OMED Educational Services during the creation and development of FOCUS. We would also like to acknowledge Georgia Institute of Technology faculty and staff, IBM Corporation, Ford Motor Company, the King Center, and the APEX Museum for their assistance with the implementation of FOCUS. Finally, we would like to thank the many individuals over the years that have contributed to the FOCUS effort.

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Authors

SUNDIATA K. JANGHA

Mr. Sundiata Jangha is a doctoral student in Mechanical Engineering at Georgia Institute of Technology. His research interests include prototyping, product development, engineering design education, computer-aided design, the design of complex systems and products, and engineering entrepreneurship. He is a member of ASME, ASEE, and NSBE. Sundiata is an ONR HBEC–FFP Fellow and a FOCUS 1996 Alumnus.

ROBERT G. HALEY

Mr. Robert Haley is Director of Special Projects for the College of Engineering and Special Assistant to the President at the Georgia Institute of Technology. Mr. Haley is the founder of the FOCUS program and continues to make strides to improve the achievement of African American students in graduate education.

CALVIN MACKIE

Dr. Calvin Mackie is an Associate Professor in the Department of Mechanical Engineering at Tulane University. His research interests include heat transfer, fluid mechanics, hydrodynamic stability, and solidification processes. Dr. Mackie is also the co-founder of Channel ZerO, an educational and motivational consulting company.