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ABSTRACT

The National Science Foundation's (NSF) Research Careers for Minority Scholars (RCMS) program was initiated to encourage individuals from underrepresented groups in science, mathematics, engineering and technology (SMET) disciplines to complete undergraduate degree programs and matriculate to SMET graduate degree programs. This report describes the goals, structure, and implementation of the RCMS program and catalogs the students' individual accomplishments and the accomplishments of the program. It addresses key areas of support for promoting and strengthening effective student and mentor relationships and also discusses faculty and student roles and responsibilities in those relationships. The report contains specific examples of institutions that have successfully increased student retention within the sciences and engineering as a result of the RCMS program. Also included are a project directory, a list of student publications and presentations, a roster of student graduates enrolled in graduate schools, and a list of businesses and other non-NSF organizations that have contributed to the program's success. (JRH)

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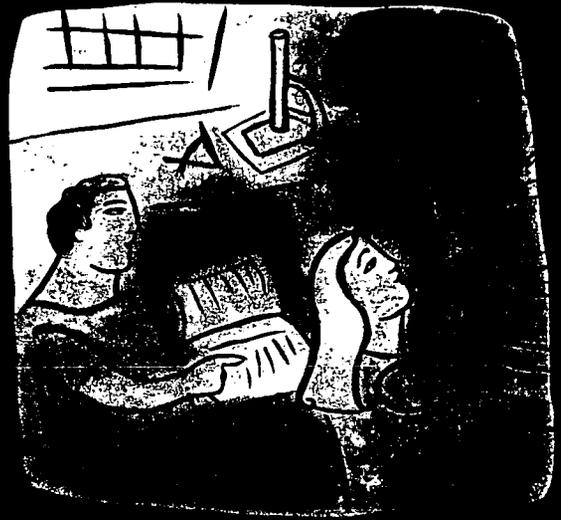
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Encouraging Diversity in Science, Mathematics, Engineering, and Technology Through Effective Mentoring

What Works!



Research Careers for Minority Scholars
National Science Foundation



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**Encouraging Diversity in
Science, Mathematics, Engineering, and Technology
Through Effective Mentoring**

What Works!

**A 5-Year Overview of
the Research Careers for Minority Scholars Program**

June 1996

National Science Foundation

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National Science Foundation
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

Date: June 1, 1996

To: Dr. Luther S. Williams
Assistant Director
Directorate for Education and Human Resources

Subject: Report on Effective Mentoring for Undergraduate Students

Dear Dr. Williams:

I am pleased to submit *What Works! Encouraging Diversity in Science, Mathematics, Engineering, and Technology Through Effective Mentoring*, a report describing the 5-year performance of the Research Careers for Minority Scholars (RCMS) program of the National Science Foundation (NSF). For the past 5 years, more than 2,300 students have participated in the RCMS program across the country. This report catalogs the students' individual accomplishments and the accomplishments of the program.

As today's workforce grows more dependent on science and technology, programs such as RCMS play an integral role in supporting the achievements of a competitive American science, mathematics, engineering, and technology (SMET) workforce. Providing strong role models for students as they pursue degrees in SMET disciplines is one of the easiest and most effective ways to enhance their education. Mentoring, the focus of the RCMS program, forges relationships between students and professionals that benefit all parties involved. The support of a good mentor enhances a student's learning experience on every level.

This report was prepared by William E. McHenry, program director for RCMS and the Alliances for Minority Participation programs. Dr. McHenry is responsible for the collection and interpretation of data included in this report and for the management and review of each RCMS project. Although the program will be merged with the Alliance for Minority Participation Program at the end of fiscal year 1996, this report illustrates that, during its tenure, RCMS has contributed to the overall goals of NSF.

The RCMS program has had a positive impact on each participant. Scholars have been encouraged not only to pursue and continue their studies in SMET fields, but also to strive for excellence. With this program, NSF has demonstrated how to encourage diversity in SMET participation at the graduate level. In addition, the number of publications and presentations made by undergraduate minority RCMS participants confirms that students at this level can perform quality research.

Sincerely yours,



Dr. Roosevelt Calbert
Director
Division of Human Resource Development
Directorate for Education and Human Resources

Acknowledgments

This report was written and edited by Dr. William McHenry, program director of the RCMS program for the Division of Human Resource Development, Directorate for Education and Human Resources, National Science Foundation, and Friday Systems Services, Inc., under contract to the National Science Foundation. This report would not have been possible without the cooperation of Research Careers for Minority Scholars' project directors, administrators, and students at participating universities and colleges.

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Executive Summary

The Workforce

Twenty-first century economies will be based on how well nations use knowledge derived from science, mathematics, engineering, and technology (SMET) research. A nation's use of this knowledge is dependent on the quality of the SMET workforce and the SMET literacy of its citizens. The United States and other nations must continuously strive to improve their SMET knowledge base by ensuring that all students have access to a quality education system, from kindergarten through adult continuing education programs.

Currently, individuals from certain racial/ethnic groups are underrepresented in all areas of the SMET workforce and at all education levels that prepare individuals for careers in SMET. For example, Blacks make up 12 percent of the U.S. population, yet they received 7 percent of the associate degrees, 5 percent of the bachelor's degrees, 2 percent of the master's degrees, and only 1 percent of the doctoral degrees in SMET disciplines in 1993. To remain competitive globally, the United States must provide better access to quality SMET programs for all students, especially Blacks, Hispanics, Native Americans, and Pacific Islanders.

Diversity

Diversity in the SMET workforce is important for many reasons:

- It provides the Nation with the number of scientists, engineers, mathematicians, and technologists needed for a globally competitive workforce.
- It provides the Nation with problem solvers who have the diverse views required to address comprehensive solutions to modern problems.
- It ensures that all groups in society are represented when decisions are made regarding the influence of scientific and technological advances.

Research Careers for Minority Scholars

The National Science Foundation's (NSF) Research Careers for Minority Scholars (RCMS) program was initiated to encourage individuals from groups underrepresented in SMET disciplines to complete undergraduate degree programs and matriculate to SMET graduate degree programs. This program made its first awards in fiscal year 1989. The RCMS program reaffirmed that minority individuals can achieve in SMET disciplines if:

- financial barriers are reduced;
- early linkage between classroom knowledge and research experiences occurs;
- adequate program advising takes place; and
- students are linked with faculty advocates—preferably faculty mentors.

The RCMS program encouraged the establishment of strategies that dealt with each of the above.

The RCMS Record

Between 1989 and 1994, RCMS project directors and faculty members from 53 RCMS projects served as advisors for more than 2,300 minority undergraduate scholars in mathematics, engineering, and technology.

■ More than 57 percent of these students were Black, 29 percent were Hispanic, and 11 percent were Native Americans; about 45 percent were women.

■ Scholars in the program studied a variety of scientific and technological disciplines, including engineering (37 percent), biology (13 percent), physics (12 percent), chemistry (13 percent), mathematics (9 percent), and computer science (6 percent).

■ More than 500 RCMS scholars have graduated with SMET degrees. Over half of the graduates (57 percent) have entered graduate school. Many of the other RCMS graduates are considering, or are in the process of, applying to graduate school.

What Works! describes the goals, structure, and influence of the RCMS mentoring program. It addresses key areas of support for promoting and strengthening effective student and mentor relationships, especially in research environments. The report also discusses faculty and student roles and responsibilities in those relationships.

The report contains specific examples of institutions that have successfully increased student retention within the sciences and engineering as a result of the RCMS program. It also contains a project directory, a list of student publications and presentations, a roster of student graduates enrolled in graduate schools, and a list of businesses and other non-NSF organizations that have contributed to the program's success.

Introduction

Competitiveness in a High-Technology Global Market

In August 1994, President William J. Clinton and Vice President Albert Gore, Jr., said, "Technology—the engine of economic growth—creates jobs, builds new industries, and improves our standard of living. Science fuels technology's engine. It is essential to our children's future that we continue to invest in fundamental research. Equally important, science and mathematics education must provide our children with the knowledge and skills they need to prepare for high-technology jobs of the future, to become leaders in scientific research, and to exercise the responsibilities of citizenship in the 21st century."

Twenty-first century economies will be based on how well nations use knowledge as a resource, especially knowledge produced from science, mathematics, engineering, and technology (SMET) research. Jobs, economic growth, community health, societal stability, and effective government are directly dependent on the health of the SMET workforce and the SMET literacy of the nation's citizenry. In order for the United States to remain competitive in the global markets of the 21st century, America must maintain a healthy SMET workforce.

The vitality of the SMET workforce depends on establishing an education system that provides better access for all students to quality SMET programs. Changing demographics mean that strategies must be implemented to recruit students from minority groups traditionally underrepresented in SMET fields to the SMET workforce. Diversity in SMET disciplines is vital because science depends on critical thinking about comprehensive solutions to problems. Creative and innovative solutions arising from new points of view and coming from different worldviews have the potential to further broaden scientific and technological horizons.

Also, diversity in the SMET workforce plays an important part in strengthening society. As individuals learn to work together to solve problems presented by natural disasters, environmental challenges, new and

Scientific Inquiry Yields Unexpected Benefits

The June 1995 issue of *Physics Today* provides an elegant example of the unexpected benefits of scientific inquiry. Workers at the Space Telescope Science Institute developed a large collection of image-processing software to compensate for a flaw in the Hubble Telescope's primary mirror. The software helps spot faint stars in blurry images, a function quite similar to finding microcalcifications, subtle spots in a blurry mammogram image that can signal breast cancer. Current mammography images show only microcalcifications that are 250 microns or larger, but the new techniques developed for use with the Hubble Telescope can yield resolution down to 50 microns. Such resolution allows detection of many more cases of breast cancer early enough for successful treatment. When Dan Goldin testified before Congress on the need to support imaging science at NASA, he did not promise Congress a breast cancer treatment in return for funding. Indeed, he had no way of predicting the benefits this new technology would yield (Gibbons, 1995). ■

existing diseases, and areas of modern technological development, individuals begin to identify common needs and desires and function as a cohesive society.

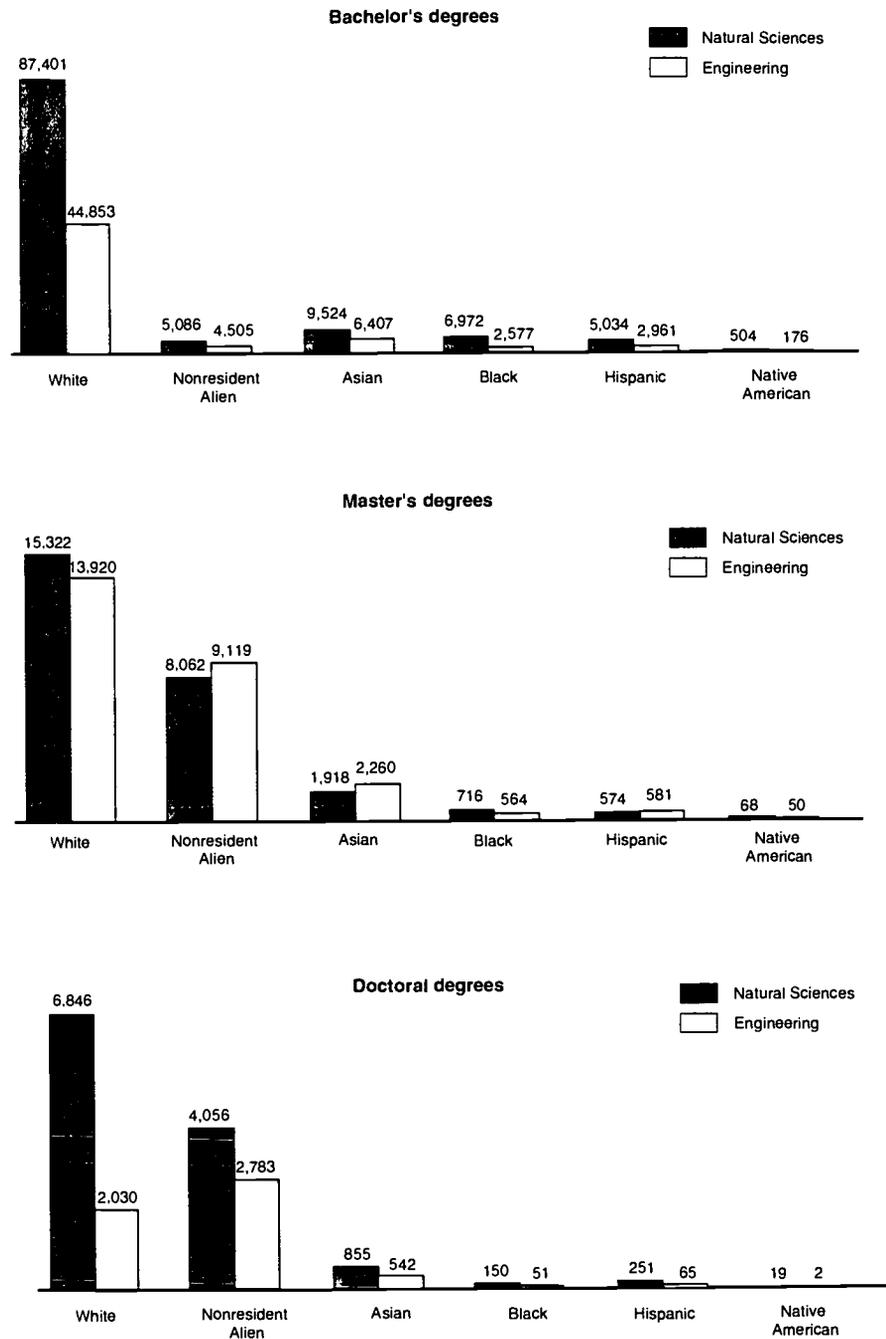
Currently, Blacks, Hispanics, Native Americans, and Pacific Islanders are underrepresented in SMET disciplines, as evidenced by the relatively small percentages of individuals from minority groups who complete baccalaureate degrees in SMET fields. (See figure 1.) This must change if the SMET workforce is to serve the needs of our Nation.

The National Science Foundation's (NSF) Research Careers for Minority Scholars (RCMS) program was designed to encourage individuals from minority groups currently underrepresented in the SMET workforce to complete undergraduate SMET degrees. The program also helps individuals who have exhibited unusual talent in SMET disciplines to continue their education and enroll in SMET graduate programs. The program has been a catalyst for positive institutional changes in the culture of SMET disciplines.

The program serves as evidence that universities and industries working in partnership with the Federal, state, and local governments can increase the diversity of students who matriculate through our world-class education system and thereby meet the SMET workforce needs of the country.

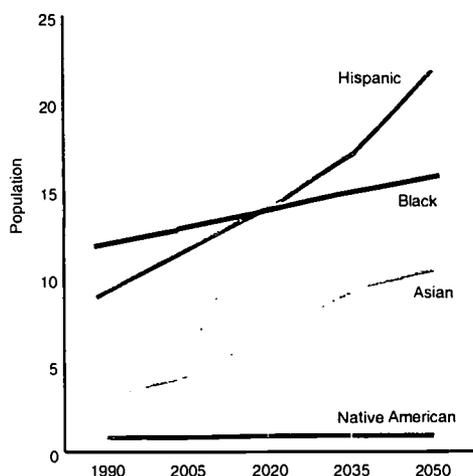
"No one nation or race of people has a monopoly on creative and inventive talent; but new ideas, like natural resources, don't amount to much unless and until something is done about them." Anonymous

Figure 1. Number of earned degrees, by field and race/ethnicity of recipient: 1993



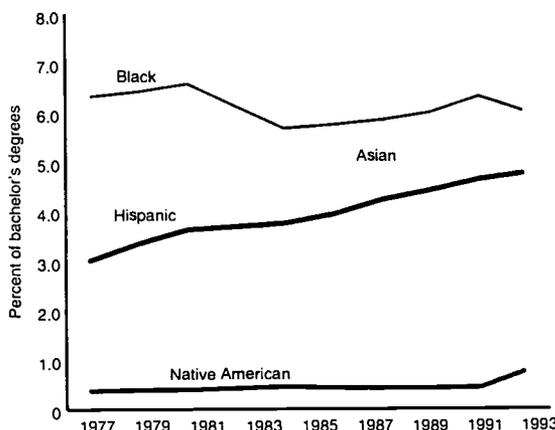
SOURCE: National Science Foundation (1995). Science and engineering degrees, by race/ethnicity of recipients: 1985-1993 (NSF 95-330). Arlington, VA: Author.

Figure 2. Percent of the population, by race and Hispanic origin: 1990 to 2050



NOTE: Persons of Hispanic origin may be of any race.
 SOURCE: Day, J.C. (1993). National population projections. In U.S. Bureau of the Census, Current Population Reports, Series P23-189. Washington, DC: U.S. Government Printing Office.

Figure 3. Percent of science and engineering bachelor's degrees awarded to U.S. citizens, by race or ethnicity: 1977 to 1993



NOTE: Persons of Hispanic origin may be of any race.
 SOURCES: National Science Foundation. (1994). Science and engineering degrees, by race/ethnicity of recipients: 1977-1991 (NSF 94-306). Arlington, VA: Author; National Science Foundation. (1995). Science and engineering degrees, by race/ethnicity of recipients: 1985-1993 (NSF 95-330). Arlington, VA: Author.

The National Science Foundation and the SMET Workforce

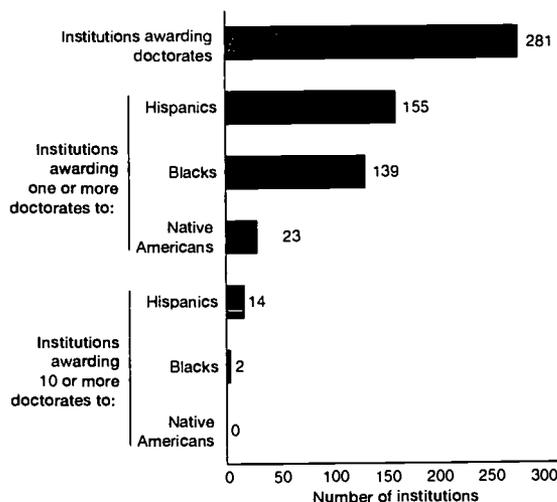
NSF has a vital role in maintaining the health of U.S. scientific and technical enterprises. Currently, this responsibility includes assessing the composition, distribution, and effectiveness of the human resource base (workforce) in SMET fields. According to Dr. Luther S. Williams, assistant director of the NSF Directorate for Education and Human Resources, "This country will not have the quantity, quality, and diversity of talented science, engineering, and mathematics scholars entering the 21st century workforce to ensure that America remains technologically competitive in a high-technology global market without full participation by all groups."

Although Blacks, Hispanics, and Native Americans represent approximately 22 percent of the U.S. population, these groups are severely underrepresented in SMET fields. In 1993, Blacks, Hispanics, and Native Americans received slightly more than 10 percent of science and engineering bachelor's degrees. (See figures 2 and 3.) Underrepresentation is worse at the doctoral level. In 1992, postsecondary institutions in the United States awarded only 5 percent of the total science and engineering doctorates to Black and Hispanic students collectively.

In 1993, although 281 of the Nation's 3,600 postsecondary colleges and universities awarded science and

engineering doctorates, about half of these institutions did not grant such a doctorate to even one Black student, and only 55 percent of these institutions awarded a science and engineering doctorate to a Hispanic student. (See figure 4.)

Figure 4. Number of institutions awarding science and engineering doctorates, by race or ethnicity: 1993



NOTES: Persons of Hispanic origin may be of any race. Science and engineering doctorates does not include degrees in health fields, social sciences, or psychology.
 SOURCE: Directorate of Science Resources Studies. National Science Foundation (1995). Survey of Earned Doctorates. Unpublished tabulations.

The Research Careers for Minority Scholars (RCMS) Program

Diversifying the SMET Workforce

NSF established the RCMS program to recruit minorities into SMET disciplines, to retain them through graduate school, and to encourage them to enter both academic and industrial SMET research institutions. RCMS offers interdisciplinary research opportunities to talented Black, Hispanic, and Native American undergraduates. The specific objectives of the RCMS program are

- to stimulate the recruitment of underrepresented minority students above current levels;
- to substantially improve the retention rates of undergraduate SMET students;
- to significantly increase the quantity and quality of minority students receiving undergraduate SMET degrees;
- to provide direct motivation and preparation for the entry of minority students into SMET graduate programs; and
- to catalyze increased faculty involvement in issues related to SMET education.

RCMS was designed to catalyze sustainable change in practices that prevented full participation by individuals from minority groups underrepresented in SMET disciplines.

Successful Strategies of the RCMS Program

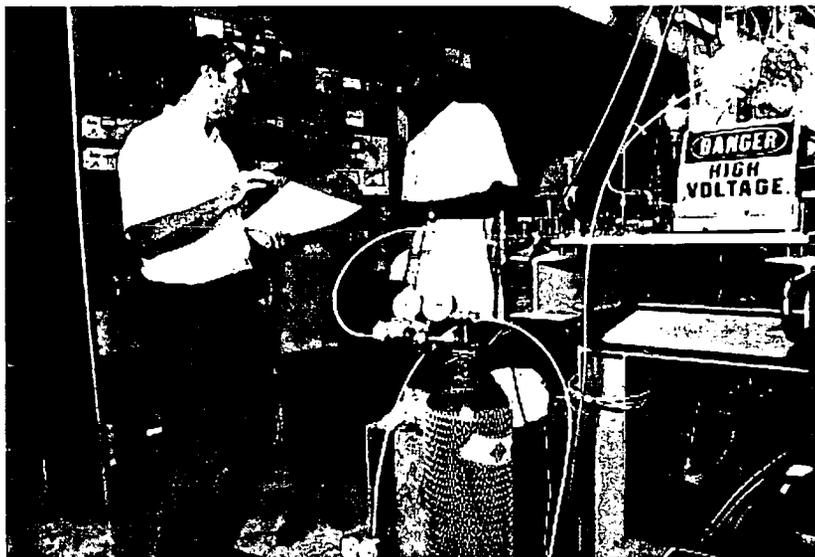
RCMS is a student-oriented program that enhances opportunities for students to study in SMET fields by assisting in the removal of educa-

tional and financial barriers. RCMS implements the following strategies:

- **RCMS encourages colleges and universities to establish supportive mentoring environments.** A key aspect of the RCMS program is that it pairs students with faculty mentors, often eminent scientists and engineers, who guide students' academic and career development. Mentors are vital because they not only inspire, but also assist students in setting and reaching realistic goals. They broaden students' horizons, assist students in locating university resources, and combat student isolation. (For additional information, see the mentoring section on page 10.)
- **RCMS encourages students to participate in SMET cultural activities.** The RCMS program encourages students to participate in SMET seminars and national conferences. Students present papers to departments on their own campuses. They are also encouraged

to attend national conferences and present posters and papers and to contribute to discussions on current issues. Attendance at professional functions allows students to interact with scientists, researchers, and industry professionals and to observe their activities. Such conferences and seminars are tremendously valuable not only in terms of supplying information and encouraging interaction, but also in promoting the establishment of supportive SMET environments for minority students.

- **RCMS encourages students to participate in professional development activities.** Through partnerships and cooperative agreements with other institutions, national laboratories, and organizations in the business community, many RCMS institutions offer students the opportunity to gain real-world, hands-on experience in their chosen SMET field. In an extension of the RCMS program's mentoring



City College of the City University of New York

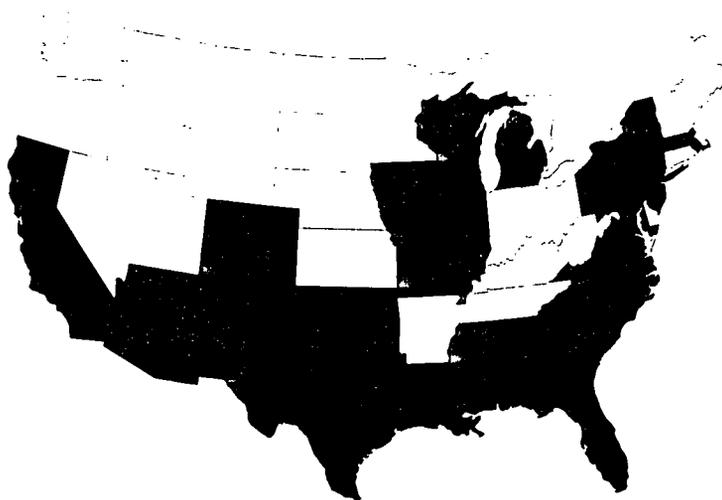
component, summer internships and activities expose students to motivational role models outside their institution, provide contacts and sources of information and inspira-

tion, promote interaction and independence of RCMS participants, and allow students to observe work done in research-oriented careers. The relationships built by these

internships enhance employment opportunities after graduation.

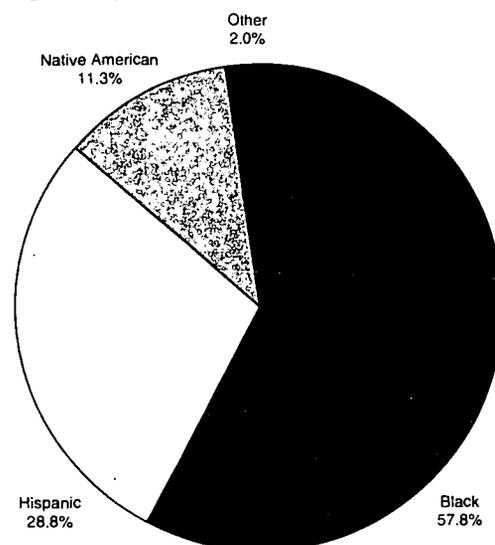
■ **RCMS encourages colleges and universities to institutionalize RCMS activities by locating non-NSF sources of support.** Many of these contributions are internships that give students practical research and business experience in SMET fields. These opportunities also help students to comprehend the experience of being part of the scientific and technological workforce. (For additional information, see the section below and the section on contributions on page 105.)

Figure 5. States with participating RCMS institutions: 1989 to 1994



SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

Figure 6. Students who participated in the RCMS program, by race or ethnicity: 1989 to 1994



NOTES: Data from Pennsylvania State University, Prairie View A&M, and San Diego State University are missing. Students who participated in RCMS for more than 1 year are included once for each year they participated; however, the percentages do not vary greatly if duplicates are excluded. Percentages may not add to 100 percent as a result of rounding. "Other" includes White, Asian, and Pacific Islander.
SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

The RCMS 5-Year Track Record

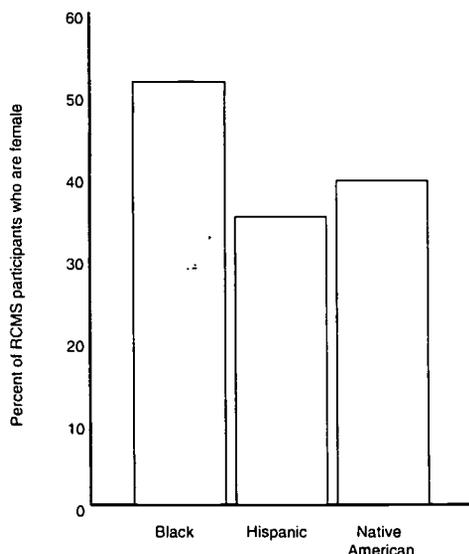
A shared goal among universities and colleges that have participated in the RCMS program has been to ensure that, during the 1990s, the United States develops engineers and scientists who can successfully drive the country's technological and economic competitiveness well into the 21st century.

Another goal is for the Nation to develop fully the technological potential and talent of all students, especially Blacks, Hispanics, and Native Americans, to meet the pressing challenge of training the future technical workforce. As the program has become more renowned, progress has been made toward its goals—more universities and colleges, and, thereby, more students, have had the opportunity to become involved in RCMS.

The Program

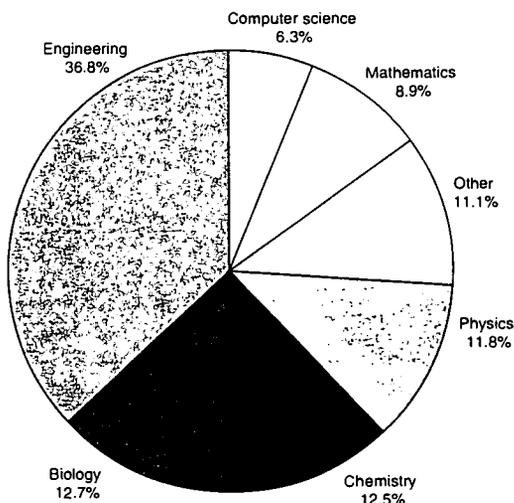
Between 1989 and 1994, 53 institutions in 24 states, the District

Figure 7. Percent of RCMS participants who are female, by race or ethnicity: 1989 to 1994



NOTES: Data from Pennsylvania State University and San Diego State University are missing. Students who participated in RCMS for more than 1 year are included once for each year they participated; however, the percentages do not vary greatly if duplicates are excluded. SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

Figure 8. Students who participated in the RCMS program, by discipline: 1989 to 1994



NOTES: Some schools did not submit data. Students who participated in RCMS for more than 1 year are included once for each year they participated; however, the percentages do not vary greatly if duplicates are excluded. Percentages may not add to 100 percent as a result of rounding. "Other" includes undecided and all majors other than the specific disciplines listed. SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

of Columbia, Puerto Rico, and Guam participated in the program. (See figure 5.) (For additional information on each institution, see directory section on page 31.)

During the same period, approximately 2,300 students participated in the RCMS program. About 60 percent of these students were Black, and more than 28 percent were Hispanic. (See figure 6.)

About 45 percent of RCMS participants were women. (See figure 7.) Although the overall ratio of males to females is nearly equal, this ratio varies within individual ethnic groups. For example, Black women participating in RCMS outnumber Black men; Hispanic and Native American men outnumber

Hispanic and Native American women.

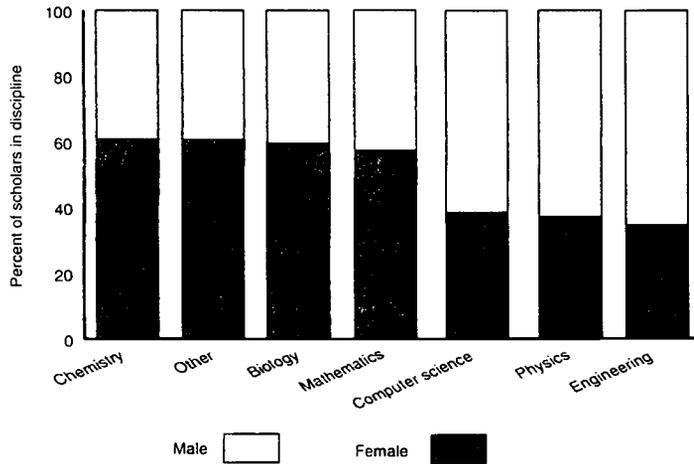
The RCMS program monitors student progress by tracking GPA

and class performance. Students receive faculty and mentor support to help them excel in their chosen field. While the program has no



State University of New York at Stony Brook

Figure 9. Distribution of RCMS scholars' sex, by discipline: 1989 to 1994



NOTES: Data from Pennsylvania State University, Prairie View A&M, and San Diego State University are missing. Students who participated in RCMS for more than 1 year are included once for each year they participated; however, the percentages do not vary greatly if duplicates are excluded. SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

mathematics, engineering, forestry, and other areas. Slightly more than one-third of all students participating in the program are in engineering programs. (See figure 8.) Almost one-third of scholars study a variety of other disciplines including geology, agriculture, natural science, and meteorology.

Engineering is the most common discipline for female, Hispanic, and Black students; however, Native American students are more likely to study forestry, and Pacific Islander students are more likely to study biology. Female students participating in the RCMS program outnumber male students in chemistry, biology, and mathematics fields. (See figure 9.)

The Graduates

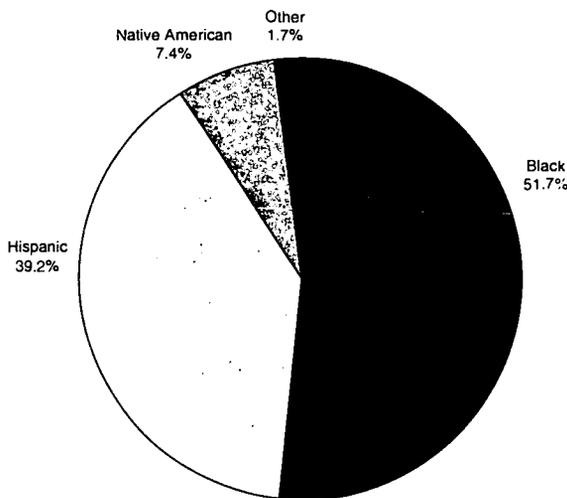
minimum GPA requirement, many institutions use GPA as an indicator of a student's dedication to the program and as a warning sign of possible problems in the student's personal or social life. The average

GPA for RCMS scholars is 3.3 on a 4.0 scale.

Scholars in the RCMS program study a variety of scientific and technological disciplines, including biology, physics, chemistry, mathe-

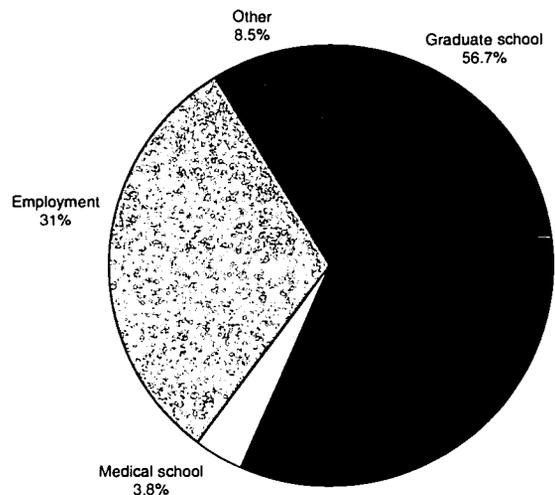
Since 1989, more than 500 RCMS scholars have graduated from colleges and universities with SMET degrees. These graduates participated in the

Figure 10. RCMS scholars who received degrees, by race or ethnicity: 1994

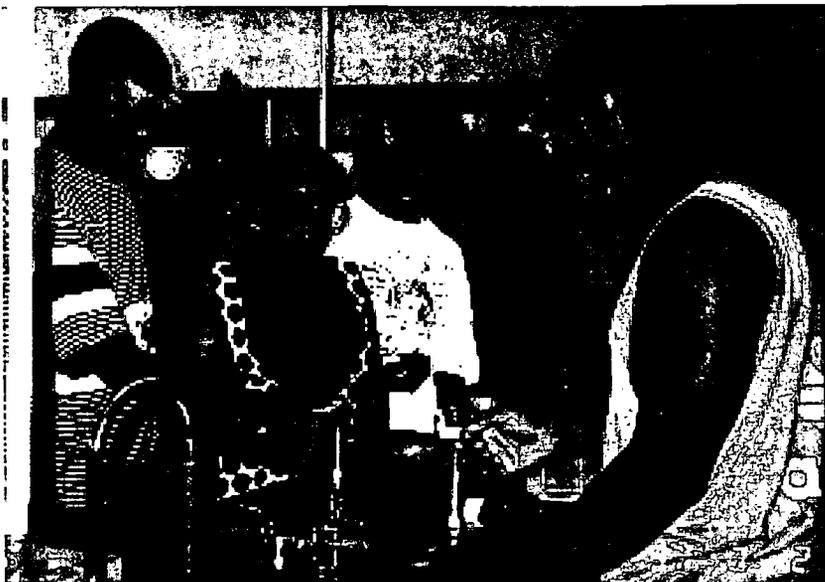


NOTE: "Other" includes Asian, Pacific Islander, and White. SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).

Figure 11. Current position of former RCMS scholars: 1994



NOTE: "Other" includes individuals who are interested in graduate school but have not yet enrolled. SOURCE: Annual report to the National Science Foundation from each RCMS program. (1994).



Grambling State University

RCMS program for an average of 2 years. Overall, about 56 percent of graduates were males. More than 50 percent of graduates were Black, about 40 percent were Hispanic, and about 7 percent were Native American. (See figure 10.) The average GPA of an RCMS graduate was 3.3 on a 4.0 scale.

One of the main focuses of the RCMS program is to direct Black, Hispanic, and Native American students through undergraduate SMET research experiences and into graduate school. Approximately 60 percent of former RCMS scholars have enrolled in graduate school immediately upon receiving a bachelor's degree. (See figure 11.) Many of the students who pursue employment immediately upon graduation, enter research fields and return later to graduate studies. (For a list of RCMS student success stories, see page 97.)

Non-NSF Support for RCMS Projects

While NSF provides the majority of the funds to support the RCMS program, national research laboratories and private industry provide additional funds and support that allow institutions to offer minority students more opportunities for

growth and learning. Corporations, such as IBM, Exxon, GTE, Xerox, and AT&T, and research facilities, such as those provided by the National Institutes of Health, the Los Alamos National Laboratory, the National Aeronautics and Space Administration, and Merck and Co., offer support in the form of stipends, scholarships, and internships; speakers for collegiate seminars; and counselors for career and graduate school guidance.

Most of these contributions are in the form of internships that give students practical research and business experience in SMET fields. Students have the opportunity to work in some of the finest laboratory facilities in the country while learning research techniques from experts. Although the majority of these internships are offered during the summer months, some students pursue internships that last throughout the academic year. These internships allow students to apply classroom knowledge to research problems.

Howard RCMS Students Are Key Players in a Global Laboratory Experience

During the summer of 1995, several Howard University undergraduates participated in research in leading laboratories in Europe and Ethiopia under the joint sponsorship of RCMS and the Fogarty International Program. One research team, led by professors Amha Asseffa and Theodore Bremner from the Departments of Biochemistry and Biology, respectively, implemented a molecular parasitology research program in Addis Ababa, Ethiopia. The RCMS undergraduate students who played key roles in the development of this program are biology majors Dawn Turner and Toni Turner, chemistry major Cori Scott, and mathematics major Carissa Baker. Working with Professor Getachew Tikubet of the International Centre of Insect Physiology-Ethiopia (ICIPE) Project were Professors Rose Nesbitt and Leon Dickson of Howard University and Dimitrus Culbreath, a Howard University graduate student in biology. The undergraduates conducted research on the molecular biology of trypanosomiasis and malaria—two of the major infectious diseases that compromise the health and productivity of Ethiopian farmers and their livestock. ■

The abundance of external support for RCMS students results from the relationships many universities have built with industry partners, laboratory facilities, and other institutions. Such contributions are not unusual—the SMET community realizes that it has a vested interest in assuring that the next generation of scientists and researchers is well trained and highly skilled. The following are examples of non-NSF support for RCMS universities.

■ RCMS students at Navajo Community College received advanced scientific calculators from Hewlett-Packard Corporation, toll-free phone access to the Internet from the American Indian Science and Engineering Society, and support from Johnson and Johnson;

■ Apple Computer, Inc., donated computer support to the University of Maryland Baltimore County;

■ The University of California, Davis, worked with the California Alliance for Minority Participation to send two students to the Third National Science Foundation Conference on Diversity in the Scientific and Technological Workforce;

■ Morehouse College students participated in internships at Johns Hopkins University, Hoffman LaRoche Laboratories, the National Institutes of Health, and Mt. Desert Biological Laboratory; and

■ For the 1993–94 school year, Jackson State University



University of Maryland Baltimore County

received an estimated \$91,000 contribution (in the form of internship opportunities) from seven national laboratories and organizations, two industrial partners, and six academic institutions.

The RCMS Mentoring Experience

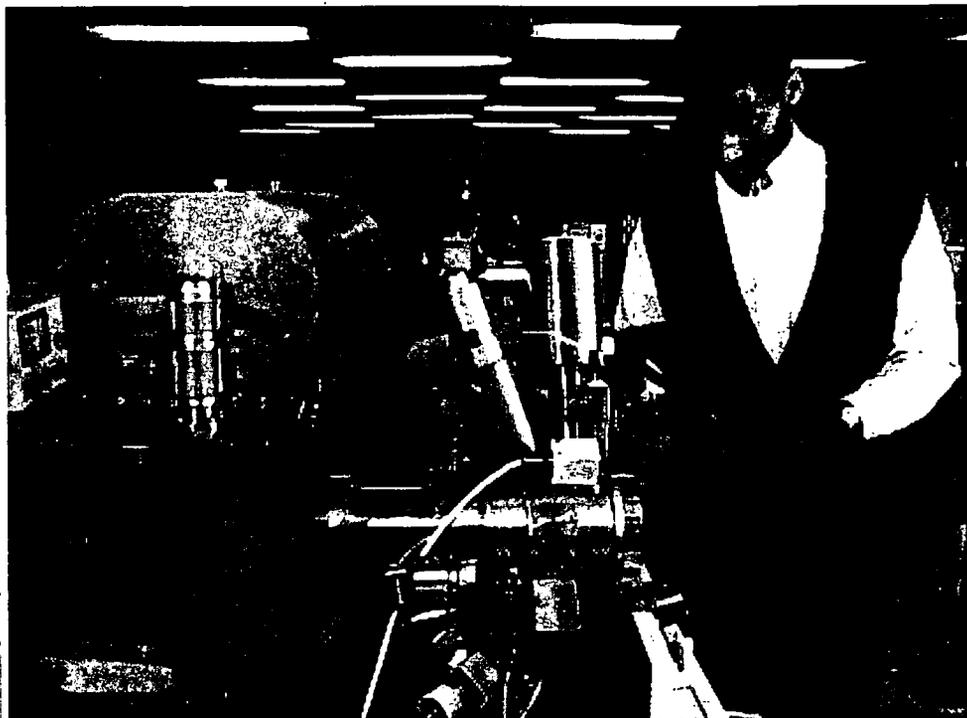
RCMS project directors and faculty mentors have served as advi-

sors for more than 2,300 minority undergraduate SMET scholars. The list of RCMS Student Publications and Presentations (see page 59) illustrates the effectiveness of involving undergraduates in faculty-directed research projects. Project directors report that scholars are doing research both on their campuses and on university campuses throughout the United States, Europe, Asia, and Africa. RCMS project directors report a scholar retention rate in SMET of more than 92 percent, with most RCMS graduates matriculating into prestigious graduate programs. The impact of the RCMS program will be felt for many years beyond the program's last award.

The RCMS program demonstrates how to effect fundamental change in the attitudes of administrators, faculty, and students regarding the involvement of undergraduates in SMET research projects and how to encourage the development of SMET student–faculty mentoring relationships. The fundamental component of productive RCMS projects is the establishment of an environment that supports developing mentoring rela-

Historic Origins of Mentoring

The word mentor originates from Homer's classic, *The Odyssey*. Ulysses, before embarking on his epic journey, left his son, Telemachus, in the care of his sagacious and venerable friend, Mentor, who was responsible for the boy's overall well-being from scholarship, to citizenship, to health and virtue. Mentor eased the transition that Telemachus would make from the private life of study to the activity of public life. As in *The Odyssey*, mentors today provide crucial advice and wisdom for students that eases the transition into the professional realm. The mentoring relationship helps students make well-informed decisions regarding the options the future holds. ■



University of Maryland Baltimore County

tionships between research faculty and undergraduates.

RCMS project directors report that student-faculty mentoring relationships develop best when individual research faculty and students

value their role in the relationships and commit their time to making the relationships work. Mentoring relationships require a large time commitment to be effective.

Student, faculty, and administrators must recognize and value the time commitment needed to develop a student-mentor relationship.

The mentoring relationship provides many benefits for both mentors and students. Benefits for campuses that support developing mentoring relationships include increased retention rates for undergraduates, better SMET learning environments, better classroom experiences for all students, increased research productivity, and increased attractiveness of SMET-related career goals. University and college administrators can foster the development of mentoring relationships by helping the faculty and students with aspects of effective mentoring that unnecessarily consume faculty and student time.

■ Administrators should set clear policies that support faculty working with students and ensure that all SMET students receive some research experience before receiving a baccalaureate degree.

■ Administrators should seek to intertwine mentoring activities with research experiences. In mentoring relationships, the distinctions among teaching, research, and service are blurred. Just as faculty members are recognized for the quality of their teaching, research, and service, so should they be recognized for the quality of their work as mentors.

Like a Mighty Ship

"When an undergraduate student enters a college or university for the first time, he or she is like a mighty ship which has just embarked on a midnight journey through very turbulent waters. Like the ship, the undergraduate student is in need of a lighthouse which will illuminate the environment, so that he or she will be aware of the potential dangers, which may appear. Without a lighthouse, both the student and the ship, regardless of how powerful they are, will simply struggle in the darkness making no progress toward their journey, or worse, crash against the rocks and be destroyed. A mentor serves in the capacity of a lighthouse for an undergraduate student. The knowledge, wisdom, and understanding of the mentor are the light that guides the undergraduate student through the times of darkness. Once the environment has been illuminated and the darkness yields to that light, the undergraduate student, like the ship, can safely follow his or her own course," says Reggie Parker, an RCMS scholar from the City College of the City University of New York. ■

Creating Supportive Research Student-Mentor Relationships

Campus Administrative Support

Administrative support for faculty and students involved in mentoring relationships is critical for institutionalizing mentoring strategies. Mentoring should be considered a relationship among students, faculty, and administrators. All parties should view research mentoring as integral to undergraduate SMET student development. Administrators can strengthen campus mentoring by offering support to faculty and students, creating realistic expectations, and emphasizing results. Each of these points is discussed below.

■ **Offering support to faculty.** Tangible administrative support for active faculty mentors is essential to successful mentoring programs. Administrators should ensure that faculty have the resources necessary to implement mentoring relationships. Common examples of administrative support include providing release time for faculty mentors, additional research resources, travel support, special recognition programs, mentorship training, and assistance in recruiting prospective mentors.

■ **Offering support to students.** Successful mentoring programs include making undergraduate research experiences part of the undergraduate SMET curriculum, providing resources for student par-

Rewards for Developing Research Mentoring Relationships

Research faculty and students receive many rewards for developing effective mentoring relationships. For example:

Research faculty
 elevates service to the profession
 increases research productivity
 assists faculty development
 connects research to classroom knowledge

Research student
 elevates awareness of SMET culture
 increases SMET research skills
 assists student development
 connects classroom knowledge to research experiences ■

ticipation in SMET research conferences, and providing training in SMET research techniques and presentations.

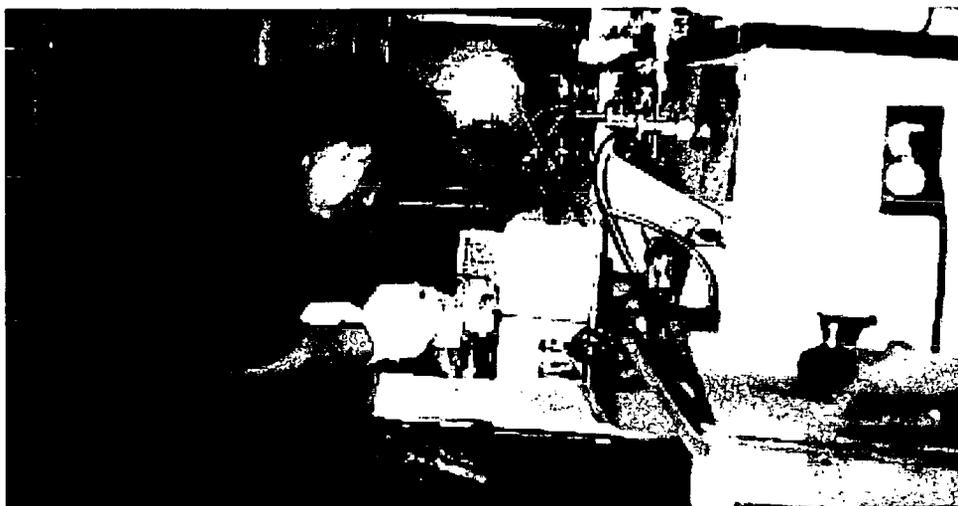
■ **Creating realistic expectations.** Not all faculty make good mentors at all points in their careers. Successful mentoring programs do not force faculty members into mentoring relationships that they do not value; nor do they include students who are not committed participants. No one can mentor a student who does not want to be mentored.

■ **Emphasizing results.** When a mentoring program achieves its short- or long-term goals, supportive institutions ensure that the

accomplishment is adequately recognized. They develop methods for both recognizing and rewarding faculty and students who participate in effective mentoring relationships. Nothing is more damaging to the development of a strong mentoring relationship than an indifferent response to goal attainment.

Mentoring Office Support

Some aspects of mentoring are not discipline dependent. A campus office may be useful in the early development of mentoring activities. The mentoring office should provide the administrative infrastructure sup-



Navajo Community College



University of Maryland Baltimore County

port and coordination to foster and monitor activities across the campus. In addition, the office should be responsible for developing a pool of experienced mentors, marketing the mentoring program, implementing an evaluation strategy, involving faculty and students in all key decision-making, assisting discipline units in analyzing their capacity to participate in a mentoring program, and securing tangible commitments from both faculty and students before mentor-student relationships are formed.

■ **Developing a pool of experienced mentors.** In successful mentoring programs, experienced mentors assist those who desire to become involved in mentoring relationships. They assist in student-faculty orientation activities by demonstrating how to build effective, supportive mentoring relationships. Experienced mentors also serve as role models for aspiring mentors.

■ **Marketing the mentoring program.** Mentoring offices can disseminate information to the fac-



City College of the City University of New York

ulty on the benefits of becoming involved in mentoring relationships. In addition, the mentoring office can serve as a source of information and training for both students and faculty interested in being participants in mentoring relationships.

■ **Implementing an evaluation strategy.** An acceptable evaluation strategy not only monitors the mentor-student relationship, but also reviews the policies of the administration to ensure that the program is receiving adequate attention from the administration.

■ **Involving faculty and students in all key decision-making.** This is particularly important for students. Being involved in decision-making helps students feel more in control of their careers. The more students feel invested in their future, the more motivated they are to perform well.

■ **Assisting academic discipline units in analyzing their capacity to participate in a mentoring program.** Successful mentoring programs do not rush unprepared departments into implementing mentoring programs.

■ **Securing tangible commitments from both faculty and students before mentor-student relationships are formed.** Both faculty and students benefit from the mentoring experience, but if faculty or students are over-committed to nonmentoring activities, the mentoring relationship suffers. Successful mentoring programs clearly define mentor and student roles and responsibilities.

Infrastructure Support

Successful mentoring programs pursue the development of institutional policies that support strengthening mentoring relationships. As

Faculty Roles and Responsibilities

Faculty should address two basic questions before committing to serve as mentors for undergraduate student participants.

- Am I at a place in my career development that will allow me to commit time and resources to working with undergraduates on my research projects?
- Do the rewards for serving as a mentor balance the challenges in fostering the development of a young scholar?

Additional considerations are the faculty member's ability to communicate with students in an open and honest manner; willingness to serve as a good listener; availability to students; capability of giving sound, constructive, and critical review of students' work; ability to hold students to high standards; and willingness to serve as an advocate for students. Faculty members must be willing to help combat the isolation that undergraduates—



especially minority and female science, mathematics, engineering, and technology students—often feel. They have to be capable of sponsoring and promoting students in the profession.

Faculty members who are considering a mentoring position should realize that mentor/student relationships provide them a better understanding of students' needs, goals, expectations, strengths, and weaknesses. Faculty members who have this understanding are more valuable to students, their departments, and the administration. Participation in a mentoring program can boost mentors' careers and their self-esteem. ■

standing of students' needs, goals, expectations, strengths, and weaknesses. Faculty members who have this understanding are more valuable to students, their departments, and the administration. Participation in a mentoring program can boost mentors' careers and their self-esteem. ■

Student Roles and Responsibilities

Students should address two basic concerns prior to establishing a student–faculty mentoring relationship—a self-evaluation of the reasons they should be involved in a mentoring relationship and the selection of an appropriate mentor.

A self-evaluation should consider whether the student is willing to be mentored, has a desire to learn a subject thoroughly, and is receptive to guidance and advising. Additional considerations should include whether the student projects a positive attitude, keeps an open mind, is mature and responsible, demonstrates commitment, and respects the work and advice of mentors.

Successful students are committed to being serious scholars; are willing to work with mentors to develop, establish, and carry out realistic research goals; and strive to become an integral part of the college or university community by networking.

If the evaluation determines that the student should pursue a mentoring relationship, the student needs to choose a mentor carefully. RCMS reports that, when the mentor/student match is a good one, the relationship can be very beneficial to a student's academic achievement and career. Students who are selecting faculty mentors should keep the following points in mind:

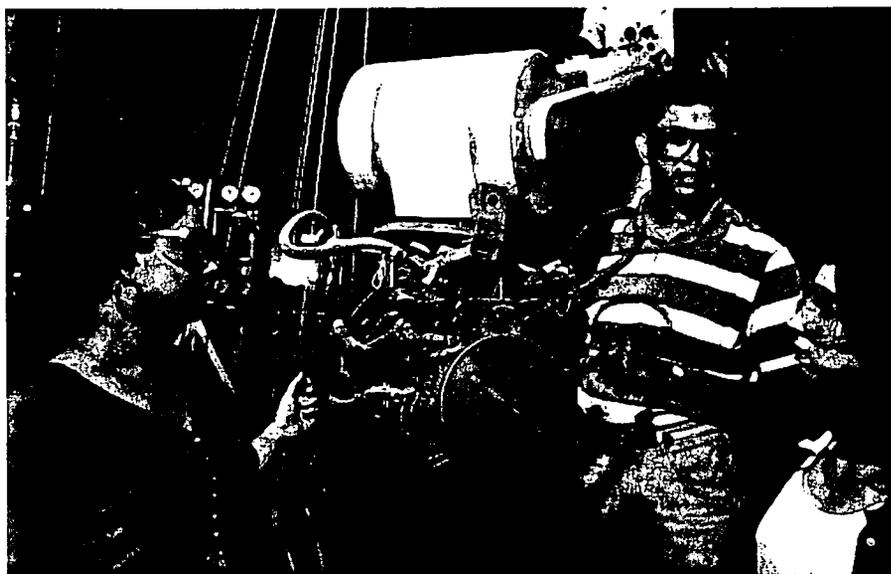
- Recognize that mentors and students do not have to share the same race, economic status, or gender to form a successful relationship.
- Take time to learn the styles, values, research areas, philosophies, and temperaments of potential mentors. Students should schedule meetings with faculty; take time to attend departmental lectures and seminars; sit in on research group meetings, discussions, and reviews; and read faculty-produced articles and research abstracts. In addition, students can talk with other graduate students, recent graduates of the department, and others outside the department to obtain feedback on potential mentors.
- Prepare a list of three possible mentors and conduct formal discussions pertaining to research interests with each potential mentor. ■

part of the policy, successful mentoring programs should include the following:

■ **Developing workshops.** Workshops for prospective mentors and students should be offered on a regular basis. This is an effective way of recruiting capable mentors and students into the program and of providing publicity for the program.

■ **Holding training seminars.** Training seminars for mentors should cover such topics as minority issues, the concept of mentoring, the purpose of the program, and what can be expected throughout the mentor/student relationship. Implementing appropriate training can help create a successful mentoring program that benefits mentors, students, and their institutions.

■ **Offering orientation sessions.** Orientation sessions should be required for mentors and students once they are accepted into the program. The time should be used to elaborate on the mission of the pro-



State University of New York at Stony Brook

gram, to develop and establish clear and realistic goals that define the parameters of the mentor–student relationship, and to define roles and responsibilities.

A supportive mentoring infrastructure should also include organizing and supporting social activities. Evaluation strategies should be used to improve all aspects of the mentoring program.

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Grambling State University

RCMS Institutional Models

The following pages describe some of the outstanding examples of RCMS institutions that have discovered what works for their students. All of these schools have increased student retention within the sciences and engineering and have provided a strong, supportive environment to encourage undergraduates to become research scientists and engineers. Many of the graduates from these programs have completed rigorous undergraduate research work, published papers, made presentations at national conferences, and entered graduate school.

City College of the City University of New York

Grambling State University

Howard University

Jackson State University

Navajo Community College

Oklahoma State University

Southern University and A. & M. College, Timbuktu Academy

State University of New York at Stony Brook

Texas A&M University

University of California, San Diego

University of Maryland Baltimore County

University of Puerto Rico

City College of the City University of New York

"Mentoring is not research supervision."

Program director:	Neville A. Parker
Total number of students in program*:	72
Total number of graduates:	32
Average GPA (1994):	3.25
Number of publications and presentations:	66

*Students who stayed in the program for more than 1 year are counted only once.

Since 1989, City College of the City University of New York's (CC of CUNY) RCMS program has cultivated a rich environment for students to practice their research presentation skills. Between 1992 and 1995, 46 students represented the program in the college-wide Scholars Day event, where they presented oral or poster presentations of their research. CC of CUNY's RCMS program has created a highly effective off-campus network involving industry and other research institutions.

"Often, the real challenge to a student's performance is not academics," says Neville Parker, a program director of the RCMS program at CC of CUNY. This belief is the reason Parker advises RCMS mentors to consider social pressures as they advise students. Apparently, this philosophy of encouraging both professional and personal development works, because the RCMS program at CC of CUNY has expanded from an initial enrollment of 12 students during 1989-90 to 54 students during 1993-94.

Parker and his team of faculty mentors have carefully crafted their relationships with students. "A mentor brings to the table the ability to work with students at their own pace—just having the opportunity to have a close relationship with someone in the sciences provides encouragement," he explained.

At CC of CUNY, the key to the RCMS program's success is the view that mentoring is not the same as research supervision. "There is a tendency to use the terms synonymously, but mentoring fully engages the student in what the mentor does and fully engages the mentor in what the student does," Parker says. Faculty

mentors offer advice not only on lab work and research, but also on family and social issues.

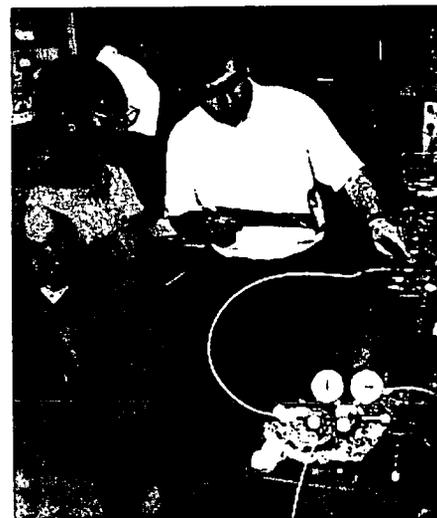
The RCMS program actively encourages students to develop research skills early in their undergraduate careers, but it also strives to help students develop other skills required to become well-rounded students and scientists. For instance, RCMS mentors at CC of CUNY, through a joint effort with the university's speech department, encourage students to improve their communication skills, particularly their ability to make oral presentations.

Tracy DeJesus, a mechanical engineering major who entered the program in 1990, says that RCMS students at CC of CUNY have been very fortunate. She says her involvement with RCMS has made her a better student and a better person. "Today, I am more motivated, more confident in what I can do, and more disciplined in dealing with problems and learning how to approach them," she says. DeJesus graduated in 1995.

When DeJesus entered the program, she was unsure of her career aspirations. She says she decided on mechanical engineering simply because of a high school class she had taken.

Her involvement with RCMS has motivated her to attend graduate school part-time next fall while working in industry. "To me, the RCMS program is like a family unit; we all know each other." She says her mentor was an integral piece of this family unit who offered guidance and helped set her academic life on track.

Parker says that this type of encouragement is what keeps students in the RCMS program and, more importantly, in the science and engineering pipeline. Of the 32 graduates, 22 have been, or are going, to graduate school. Three are currently pursuing their doctoral degrees. ■



Grambling State University

"Mentors fill resource gaps."

Program director:	A.N. Murty
Total number of students in program*:	39
Total number of graduates:	9
Average GPA (1989-1994):	3.6
Number of publications and presentations:	20

*Students who stayed in the program for more than 1 year are counted only once.

Grambling State University's (GSU) RCMS program has been crucial to the academic progress achieved by the school's physics and chemistry departments. With the program's help, both departments have increased enrollment and retention, and of the nine students who have graduated from the program, seven have enrolled in graduate school. In addition, GSU has established excellent undergraduate research facilities that have made it possible for students to present more than 60 research papers at local, regional, and national conferences. Physics major Ursula Donatto received first place at the NSF Diversity Conference.

"Diversity is an absolutely necessary and desirable component for any type of revolution, be it scientific or otherwise," says A.N. Murty, program director of the RCMS program at Grambling State University. A revolution is precisely what has occurred at GSU since the implementation of the RCMS program in 1989. Before the program's inception, GSU graduated an average of only four students per year in physics and chemistry combined. Today, that average has more than doubled to 10 per year. In addition, the total enrollment in both of these majors has nearly doubled since 1989.

Murty believes that the strength of the program lies with its faculty members. Their involvement and enthusiasm to motivate and sustain the zeal of the students plays a vital role. Mentors spend substantial individual time with students and attempt to be more than simply their research advisors. "Mentors don't only go through the academics, they must also address other concerns of the students and get involved in their personal lives if need be," Murty says.

Tanya Lewis, a senior who graduated in December 1995, says that her relationship with her mentor has helped her through both personal and academic chal-

lenges. Lewis, who began her involvement with RCMS during her freshman year, took a full semester off from school for personal reasons. During that time, she said her relationship with her mentor and the love of research she developed through RCMS helped her keep her resolve to return to school. "I remember sitting in my house and thinking about what it used to be like to get up and go to school everyday and do research. I realized then that I had a gift, and I missed it. I knew that I wanted to spend my time doing research." The next semester, she returned to school with a new determination and made plans to attend graduate school beginning in the fall of 1996.

The RCMS program at GSU emphasizes such personal involvement between mentors and students. Murty believes that the minority students that this program targets are in particular need of mentors and role models. "Of course, everyone needs mentors, not just minorities, but minorities are so often coming from environments that do not provide the necessary resources, and the mentor will fill that gap."

In addition to the heavy emphasis on the mentoring aspect of the RCMS program, students at GSU are also provided with ample research

opportunities in a variety of laboratories. Students are encouraged to work on independent endeavors and to support their research advisors' projects. The overall goal is to encourage students to develop the desire and discipline needed to make research a personal goal as well as an academic one. Lewis says that her involvement with the program helped her discover a love of research that she did not have before her college experience. Apparently, this attitude is prevalent because more than 50 percent of RCMS program participants go on to graduate school. This all adds up to the true measure of success for RCMS. ■



Howard University

"Mentor by example."

Program director:	Winston A. Anderson
Total number of students in program*:	69
Total number of graduates:	23
Average GPA (1991–1994):	3.23
Number of publications and presentations:	4

*Students who stayed in the program for more than 1 year are counted only once.

*Howard University's RCMS program, which began in 1989, trains undergraduates in research disciplines, such as engineering and the physical and natural sciences. Trainees apprentice at several Centers of Excellence, including Material Science Research Center of Excellence; Computational Sciences and Engineering Research Center; Center for the Study of Terrestrial and Extraterrestrial Atmospheres; Laser Chemistry Laboratory; and Particle Detector Research Center. Through an international exchange program, RCMS students have access to 7 leading European and Asian laboratories and 19 research universities sponsored by the Leadership Alliance. The university also sponsors the Distinguished Scientists Seminar series that enhances the university's intellectual environment. High school teachers attending the university's summer continuing education program have developed *Molecules in our Lives*, a manual designed to improve precollege chemistry education.*

The RCMS program at Howard University supports 20 to 30 undergraduates each year and maintains a retention rate of more than 95 percent. Most of the students who have participated in the program have gone on to graduate school in the science, engineering, and mathematics fields. One of the most important aspects of the university's success is mentoring, says Winston Anderson, program director. "The mentor is the first line of excellence and vision that the student observes. Mentors offer essential, one-to-one, direct counseling and career advice." Indeed, Anderson encourages faculty mentors to spend substantial time with their students because, without mentoring, many minority students would not be exposed to the best opportunities the school has to offer.

Faculty mentors say they gain both personal and professional fulfillment from their involvement in the RCMS program. "Working with students gives you the energy to keep going," says Folahan Ayorinde, an associate professor of chemistry. Ayorinde believes that the emphasis on mentoring as a relationship between peers is what makes the program at Howard so successful. "You can't just tell [students] what needs to be done, you have to mentor by example and realize that you learn as much from them as they learn from you."

Joseph Spence, a fourth-year electrical engineering student, said that he began participating in RCMS strictly because of the research opportunities it offered. Spence, who has been working with the RCMS program for 2 years, says

that the experience he has gained has been invaluable. "I have found the opportunity to be more creative and exercise muscles that I have not used in the classroom... The greatest accomplishment so far has been that I now feel comfortable expressing my opinions and ideas in a circle where everyone else has their Ph.D." Spence says mentoring is vital to the success of the program. "I couldn't see a program like this running without mentors... My relationship with my mentor is so personal that talking to him is almost like talking to myself."

The program at Howard has been immensely successful in building relationships like the one between Spence and his mentor. The combination of opportunity and dedication has facilitated these relationships that will remain important for years to come. ■



Jackson State University

"Mentoring requires ample time."

Program director:	Abdul K.A. Mohamed
Total number of students in program*:	47
Total number of graduates:	33
Average GPA (1993-1994):	3.42
Number of publications and presentations:	17

*Includes only students who were RCMS scholars in 1993-1994.

Jackson State University is one of the few Historically Minority Institutions in the Nation with an Environmental and Marine Sciences Program. The university also has outstanding meteorology and mathematics departments. RCMS students take special courses that consist of supervised research projects, laboratory experiments, and presentations of their findings. Students travel to at least one conference or meeting related to their research experiences. The retention rate has been 98 percent.

"RCMS is bigger than Jackson State," says 1994 program graduate, Christopher Hall. Hall, who is currently enrolled in graduate school studying molecular biology, means that the program at Jackson State is involved with students both on and off campus. RCMS at Jackson State requires all of its upperclass participants to tutor campus students 5 hours per week. In addition, RCMS sophomores take part in a program that provides tutorial services for local high school students. All of these efforts have not only helped countless students, but have also boosted the program's recruiting efforts. Participation in the RCMS program at Jackson State has more than doubled since its founding in 1991.

Program director Abdul K.A. Mohamed credits much of the program's success to the linkages established between RCMS and other programs designed to encourage minority participation. The financial support that supplements the NSF grant allows students to dedicate much of their time to research, rather than part-time jobs. Mohamed says that one of the most satisfying aspects of the program is having the ability to help students who might otherwise struggle through such rigorous work.

Faculty mentor Dan Course agrees. "There are some students that you know can succeed, but a little urging would help them. They need to be nudged onto higher ground to flourish," he says. Another faculty member, Arthur Jones, who has not served as a mentor but has taught many RCMS students in the classroom, says that faculty members throughout the university enjoy working with RCMS students. "We're excited about working with RCMS students; in them we have the opportunity to see the first real spark of success at the undergraduate level," he says.

Students who participate in RCMS at Jackson State have the opportunity to perform research at the undergraduate level during the school year and over the summer. Almost every RCMS student participates in summer research projects across the country. Involvement in this research is considered one of the most valuable aspects of the program by many of the students. When Hall entered the program, he was unsure whether he wanted to move on to medical school or to a doctoral program. Hall attributes his decision to pursue graduate studies in molecular biology to his involvement with RCMS.



The mentoring component of the program is also vitally important to its participants. Active faculty participation has enabled the program to keep its faculty mentor ratio at 2:1, providing each student with a mentor who has ample time to devote to his or her development. The strong relationships between mentors and their students have also boosted the program's retention rate, which stands at 98 percent. The combination of the efforts of the faculty, the program director, and the students at Jackson State has built an outstanding program. ■

Navajo Community College

"Mentors serve as guides, showing students how to balance a career and a social life."

Program director:	Mark C. Bauer
Total number of students in program*:	31
Total number of graduates:	17
Average GPA (1992–1994):	2.72
Number of publications and presentations:	8

*Students who stayed in the program for more than 1 year are counted only once.

Since 1992, Navajo Community College's (NCC) RCMS Program has assisted Navajo students in achieving a successful transition from reservation high schools to the university. The program has increased the number of science majors at the college by about 20 percent. NCC has developed collaborative academic ties with several science and technology institutions. In addition, NCC has placed all students in summer research experiences.

Eldon Blueyes is spending his summer vacation performing research at Ahmadubello University in Zaria, Nigeria. This is Blueyes' first trip outside the United States. He is looking forward to learning about biology in another country, learning about the Zarian culture, and forming professional contacts for the future. The research in Nigeria is Blueyes' summer placement, a major focus of the Navajo Scholars Program at NCC.

Each summer, NCC places students in university and industrial research programs at institutions such as New Mexico State University, the University of New Mexico, and the University of California's Lawrence Livermore National Laboratory. The placements offer many students their first opportunity to leave the reservation and serve as professional experiences that complement academic studies. During the past 3½ years, these placements have been extremely successful, says program director Mark Bauer. NCC has not only placed every one of the 20 students in the RCMS program, but has also placed 20 students outside the program. "The labs have been so hungry [for students] that we have more than doubled our original placement goal," Bauer says.

Professional experience is not the only benefit students receive from summer research opportunities. With each placement, students are assigned summer mentors to help guide them. These mentors typically spend more

than just a summer with their students. Blueyes is still in contact with Greg Lennon, a mentor from his first placement at the Lawrence Livermore National Laboratory. Blueyes credits Lennon with showing him that a balance between a career and a social life can be achieved.

The Navajo Scholars Program provides more mentoring support than most other mentoring programs; it assigns two mentors to each student. Blueyes' second and main mentor is Vama Robson, a biochemist who takes a personal interest in all her students at NCC. Robson teaches the Orientation to Research class that introduces students to statistics and research and helps them with applications for summer research positions. She teaches students specific skills about how to use research tools and to present papers. For example, Robson videotapes students as they present research findings to the class to help them improve their presentation. In addition, Robson invites guest researchers and encourages her students to question them about specific research projects and tools.

The Navajo Scholars Program is one of the most successful RCMS projects, with a retention rate of 85 percent and 70 applicants for the 32 positions. Its principal objective is to assist Navajo students with their transition from high school on the Navajo reservation to 4-year universities.

With this in mind, the program seeks to provide the necessary financial support and to strengthen students' communication, mathematics, and science skills, and their confidence and motivation. "Many of our students haven't been around people with advanced degrees. They come to the college to obtain a degree, but they don't really know what it takes. They haven't been exposed to scientists," Bauer says. ■



Oklahoma State University

“Mentor program directors must get to know mentors and students.”

Program director:	George Dixon
Total number of students in program*:	36
Total number of graduates:	7
Average GPA (1990–1994):	3.6
Number of publications and presentations:	38

*Students who stayed in the program for more than 1 year are counted only once.

Oklahoma State University (OSU) has increased the enrollment of students in the RCMS program since its beginning 4 years ago. Students have participated in a variety of original research efforts, including laser research, that continues into graduate school and future employment. The program has increased enrollment of minorities not only in science and technology fields, but also at the university.

In the past decade, OSU has awarded more science and engineering doctorates to Native American students than any other university in the United States. The RCMS program has helped OSU strengthen the university's dedication to undergraduate research and science, engineering, and mathematics education and has encouraged minority participation. Since its implementation in 1990, enrollment in the RCMS program has more than doubled, the retention has remained high, and participants have maintained a collective grade point average above 3.6.

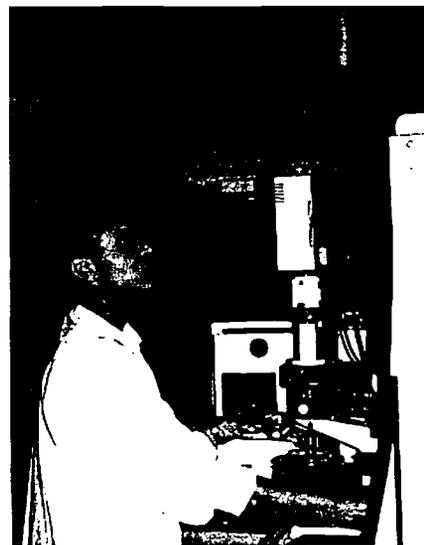
Program director George Dixon says that encouraging minorities, especially Native Americans, to study science is vitally important. For example, environmental science becomes particularly important to Native American students when Federal and tribal governments negotiate issues about tribal land. Dixon says. “American Indians want to be able to represent their people in these decisions.” The RCMS program at OSU is helping minority students meet many such personal goals.

Much of the program's success can be attributed to the early research opportunities it offers students. “Research is habit forming. It's addictive. By getting these students involved in research early in their careers, we hope to get them hooked. So far, all but two of the

RCMS participants at OSU have gone on to pursue advanced degrees.” Dixon says.

Michael Boone, a 24-year-old physics major, says his studies have been greatly enhanced by the RCMS program. Boone says the greatest advantage of the program “is the chance to work side by side with other minorities that have the same skills as I have.” Before he became involved with RCMS, Boone says he planned to get his bachelor's degree and enter the workforce; now he plans to pursue a master's degree in physics.

At the heart of this type of success is a careful mentoring relationship between students and faculty members. Dixon spends much of his time getting to know prospective mentors to ensure their dedication to the program. “You need to know your mentors and feel confident that they will actually spend time with the students,” he advises. This is a vital part of the RCMS program, and all of the time and hard work is well rewarded.



“Because of our program and others like it, we have seen an enormous growth in minority student enrollment in the sciences,” Dixon says. ■

Southern University and A. & M. College, Timbuktu Academy

"Mentors show overall concern for student development."

Program director:	Diola Bagayoko
Total number of students in program*:	40+
Total number of graduates (as of 5/31/95):	14
Total number of graduates (in 1995-1996):	8
Average GPA (1993-1994):	3.30
Number of publications and presentations (1994-1995):	19

*Students who stayed in the program for more than 1 year are counted only once.

Southern University's Timbuktu Academy has developed into a successful tool for encouraging and recruiting minorities into the science, mathematics, and technology fields. The school encourages students to attend and participate in conferences and research projects.

Since Southern University established its Timbuktu Academy in 1990, the RCMS program has compiled impressive statistics. For example, more than 80 percent of RCMS students go to graduate school, physics enrollment has increased from 20 to 70 students over 5 years, and more than 90 percent of the physics students are engaged in summer research at national laboratories. Integral to the program's prosperity is its philosophy that students and mentors alike are responsible for the success of the program. Program director Diola Bagayoko says that the "formula" for successful mentoring involves more than financial support. "Mentoring means providing other types of support from a variety of sources so that the student can have enough time to devote to conferences, research, etc. If students do not have support, then they will not have time to invest in the program."

These other types of support are evident in Southern's vigorous monitoring system, a regimen that includes a bimonthly review of transcripts, the updating of student curriculum vitae every semester, guidance on course selection and sequence, and personal counseling. Such vigilance is important in order to ensure that students are progressing in the program. It also allows mentors to encourage students who are doing well. "If I do not monitor, how am I going to be able to tell that [students] have done a great job?" Bagayoko says.

Although the program has a great deal of structure, the relationship between the mentor and the student is left to develop both on a personal and professional level. Wilson Sheppard, one of Bagayoko's research assistants since 1991, says Bagayoko showed overall concern for his development. "He made sure I was not only performing well academically but also in my private life. He commended me when I did well, and he was there to discipline me when I needed it."

A basic tenet of Southern's program is that participation in research should begin in the freshman year. Students "must do hands-on work...they should work in the lab rather than work at fast food restaurants," says Rambabu Bobba, associate professor in the physics department. Another tenet of the program is that all students should attend professional conferences. "Conferences are an important arena for learning and making professional contacts," Bobba says.

Sheppard, who graduated from the program in 1994 and is pursuing his master's degree in physics, found that conference participation was valuable in his professional development. "I had the opportunity to meet my peers and explore my knowledge. Knowing where you stand in the scientific community and presenting technical papers are important to your development as a scientist." ■



The objectives, paradigm, programs, activities, and selected results of the Timbuktu Academy are described in the following publications: D. Bagayoko and E. Kelley. The dynamics of student retention. Education 115 (1) 31-39, 1994; and W.E. Moore and D. Bagayoko. A paradigm of education: The model of the Timbuktu Academy. Education 115 (1), 11-18, 1994.

State University of New York at Stony Brook

"Mentoring is a sort of apprenticeship, a powerful form of learning."

Program directors: David L. Ferguson
Alan Tucker

Total number of students in program¹: 91
Total number of graduates²:
Average GPA (1993–1994): 3.21
Number of publications and presentations²:

¹Includes only 1993–1994 and 1994–1995. Students who stayed in the program for more than 1 year are counted only once.

²Not available.

State University of New York (SUNY) at Stony Brook has had great success with the RCMS program and its participating students. Prior to instituting the RCMS program in 1992, only about 15 minority students in science and engineering majors at Stony Brook had grade point averages of 3.0 or higher. Currently, there are 100 such students.

"I hadn't considered graduate school as an option...[my mentor] is probably one of the main reasons that I'm going to graduate school," exclaims mathematics scholar Cesar Mena, a 1995 graduate of SUNY at Stony Brook and a participant in the RCMS mentoring program. Mena currently plans to continue his study of mathematics in graduate school at Stony Brook. He says that the RCMS program not only has had obvious effects on his academic career, but also has helped him develop social relationships with other minorities his age. This type of comprehensive support and guidance is the goal of Stony Brook's RCMS program.

The role of a mentor is equivalent to the role of an athletic coach, says David Ferguson, a professor of technology and sociology, and applied mathematics and statistics at Stony Brook. Both use an experienced person to guide student development. "Mentoring is a sort of apprenticeship, a very powerful form of learning," Ferguson says. Mentoring offers students access to the wide "variety of human and material resources available on an academic campus."

Ferguson co-directs the RCMS program with Alan Tucker, a distinguished teaching professor in applied mathematics and statistics. Under their leadership, the

program has enjoyed tremendous success since its inception in 1992, beginning with 22 hard-working students and currently serving 120 students in mathematics, engineering, physics, and chemistry. Program coordinator Michele McTernan attributes part of this success to Stony Brook's extensive network of support for minority students. "We can offer students opportunities and resources that may not be available elsewhere," she says.

The program's rapid growth is also the result of a great deal of hard work and effort. For instance, Ferguson says that a successful mentoring program encourages strong faculty input in the planning and operation of the mentoring program. "It is critical...to publicize the success of the program to all science, mathematics, and engineering departments. When the faculty see the real impact that the program has, more of them will want to participate as mentors."

Stony Brook no longer has to recruit mentors into the program; instead, faculty members volunteer to be mentors, calling the program office to request students for research and training, Ferguson says. "It's a great situation, and it's good for both faculty and students."

A driving force behind the program is its emphasis on active learning and strong student participation in the education process. Ferguson directs calculus workshops and says he rarely sees "students sitting passively, waiting to be filled with knowledge."

Tucker agrees. He says that the academic activities engage students in cooperative learning and gives them a glimpse of the real world that awaits after graduation. "The academic support activities permit undergraduate students to work together, with the support of graduate students and university faculty, just the way they would work as part of a team in industry." ■



Texas A&M University

"[A mentor is a] person you can turn to when you want to make the critical decisions."

Program director:	Karan L. Watson
Total number of students in program*:	173
Total number of graduates:	70
Average GPA (1993–1994):	3.36
Number of publications and presentations:	59

*Students who stayed in the program for more than 1 year are counted only once.

Texas A&M University is making remarkable progress in the RCMS program. The enrollment of minorities has increased, along with the number of minorities entering the science, mathematics, and technology fields. Half of the students in the program have pursued their graduate degrees in science and technology fields. Those who have not gone to graduate school have taken positions at various research companies and government agencies. One student enrolled in the Navy as a Nuclear Power Officer, and two are pursuing teaching degrees. Oscar Serna won the NASA Graduate Student Researcher Program scholarship.

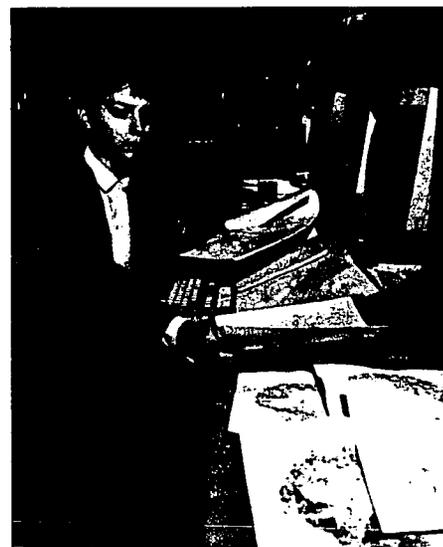
Karan Watson, director of the RCMS program at Texas A&M, knows firsthand what being a minority student in the sciences is like. "As a woman in engineering, I understand the need for programs like RCMS...It was difficult being a woman student because it was clear I wasn't getting the same information as male students were through their personal relationships with faculty." The RCMS program at Texas A&M attempts to build such personal relationships between minority students and faculty so that "there is someone there [for the students] with more experience to suggest options," Watson says.

The program at Texas A&M has more than tripled in size since its inception in 1989. A key factor in this substantial growth rate has been the emphasis on the mentor-student relationship. Participants have the opportunity to select their own mentors so that each student is matched with a faculty member with similar interests. The program strongly encourages students to meet and interview several research faculty members before selecting a mentor.

Enos Inniss, a 1995 civil engineering graduate, says that his mentoring experience was a maturing one. "I see a mentor as the first person you can turn to when you want to make the critical decisions that your life will be based on." Inniss, who plans to pursue his doctorate in environmental engineering at Notre Dame, became an RCMS participant to help learn what graduate school would be like. He says his research experience was invaluable for many reasons, but particularly because it helped him narrow his field of study.

Inniss says that another aspect of RCMS that contributed to his overall satisfaction with the program was the required outreach project. Texas A&M requires junior and senior participants to serve as positive role models through their involvement in two public school outreach experiences. These experiences are designed to encourage younger students to choose engineering and science as careers. Inniss found the outreach program so fulfilling that he always did more than the required two. "I enjoyed making younger students aware of what was available in engineering," he says.

Watson says that the combination of these aspects have made the RCMS program at Texas A&M successful for the entire university. "There is a large number of minority students who have visions of going on to graduate school and doing research. And that group has expanded beyond the RCMS program," she says. ■



University of California, San Diego

"Mentoring is a two-way street."

Program director:	David McDonald
Total number of students in program ¹ :	133
Total number of graduates:	49
Average GPA (1990–1995):	3.14
Number of publications and presentations ² :	

¹Students who stayed in the program for more than 1 year are counted only once.

²Information not available.

The University of California (UC), San Diego, RCMS program promotes science education among minorities of all ages—it has strengthened ongoing efforts to improve science education in San Diego high schools. As students move on to college, the program sponsors minority undergraduates in scientific research and encourages them to pursue graduate study in oceanography and other scientific fields. In addition, the Scripps Undergraduate Research Fellows (SURF) program offers a 10-week summer research experience for more than 20 minority undergraduates each year.

Every summer the coast of Southern California near San Diego faces an onslaught of eager undergraduates striving to learn more about oceanography and other science fields. These students spend 10 weeks working closely with a research supervisor and experiencing what one student calls "life as a graduate student." Students divide their time between individual research projects, weekly lectures, GRE preparatory classes, and graduate school application workshops. The SURF program strives to encourage undergraduates to pursue advanced studies in the sciences, and RCMS provides funds for an average of 20 such future scientists each year.

The program at UC, San Diego, is unusual because it involves precollege, undergraduate, and graduate education. At the precollege level, UC, San Diego, actively recruits minority students through local connections and the already established Scripps Aquarium, which aims to foster youth interest in marine science. The graduate program helps support up to three minority students each year in their study of marine science. UC, San Diego, which is one of the few institutions in the country that offers this pro-

gram at the graduate level, considers the RCMS support of graduate students crucial to the success of the program's goal to increase minority participation.

At the undergraduate level, the program encourages minority students to pursue their interest in marine science through the summer SURF program, a faculty mentor program, and participation in undergraduate research conferences. Kathleen Avina, a SURF student in 1991, says she values those experiences. "I left San Diego...knowing more about my own abilities to participate in science and be part of an academic community."

David McDonald, director of Graduate Student Affirmative Action Programs and the RCMS program, strongly believes in the mission of RCMS. His conviction carries over to the strength of the program. To McDonald, "diversity is important in science, engineering, and mathematics research because science is about diversity. We're talking about avoiding replication of flawed principles. Diversity encourages academic and research integrity."

Mentoring, McDonald says, remains one of the most crucial aspects of the program. It is one that he believes to be multifaceted in its benefits.

"Mentoring is a two-way street—it allows the student to have a link with lofty research goals, and it allows the mentor the opportunity to connect back with the students and learn from a new generation of young scholars."

The efforts of the RCMS program have been well rewarded. More than 80 percent of former participants have been admitted to graduate programs across the country, and minority applications to the UC, San Diego, Scripps Institution of Oceanography have more than tripled since the program began. At the same time, the number of enrolled minority students has more than doubled. ■



University of Maryland Baltimore County

"...mentoring provides students with a variety of role models and much-needed support."

Program director:	Freeman A. Hrabowski III
Total number of students in program*:	180
Total number of graduates:	47
Average GPA (1992–1994):	3.4
Number of publications and presentations:	40

*Students who stayed in the program for more than 1 year are counted only once.

The University of Maryland Baltimore County (UMBC) Meyerhoff Scholars Program, instituted in 1988 and partially funded by RCMS, is highly successful. The program enrolls 180 students and has a retention rate of nearly 100 percent. One of the program's key components is the opportunity students have to engage in summer research experiences at some of the Nation's leading universities and top scientific, computing, and technological companies. Forty-three of the program's graduates are currently enrolled in Ph.D., M.D., or M.D./Ph.D. programs.

In May 1993, the six young Black men who crossed the stage at graduation at UMBC had earned more than a bachelor's degree. They also had earned a feeling of personal accomplishment by defying the odds and had developed the ambition to have successful careers in scientific research. These young men were the first graduates of the Meyerhoff Scholars Program, which strives to increase the number of Black students earning doctoral degrees in science, engineering, and mathematics. The Meyerhoff Program is partially funded by RCMS.

Mentoring is an important component of the Meyerhoff Program. Freeman A. Hrabowski, UMBC's president and co-founder of the Meyerhoff Program, says, "Students need to know that others like themselves have succeeded in science and engineering—mentoring provides students with a variety of role models and much-needed support."

In addition to mentoring, the Meyerhoff Program's other key components make it one of the most comprehensive and distinctive programs of its kind in the Nation. These components include (1) recruitment of top students—UMBC received more than 700 applications for the 47 scholarships awarded to new freshmen enrolling in the fall of 1995; (2) financial support for the

scholars, including full tuition and fees, room and board, and a \$1,000 book allowance each year; (3) a 6-week, residential, summer bridge program for all new students before their freshman year that gives the students a solid foundation for success in the fall by orienting them to university-level work and by encouraging them to develop special bonds with each other; (4) emphasis on the value of study groups and tutoring; (5) encouragement of a strong sense of community and of programmatic values among the scholars; (6) summer research internships in university and corporate labs leading to research presentations and publications; (7) the faculty and administration's active involvement and strong support; and (8) family involvement, especially through the Meyerhoff Program Parents Association.

Since its inception in 1988, the Meyerhoff Scholars Program has been highly successful, graduating 47 students. Forty-three are currently enrolled in Ph.D., M.D., or M.D./Ph.D. programs at nationally recognized universities (and other graduates intend to enroll). In the 1995–96 academic year, UMBC projects the highest

number of Meyerhoff graduates to date—41. Dr. Hrabowski says that the Meyerhoff Program's success in recruiting and graduating talented Blacks in science, engineering, and mathematics (SEM)

is vital. "Diversity in SEM research is important to the economic well-being of our Nation. Because an increasing proportion of the workforce will be minorities, we need to make sure the workforce is scientifically and technologically prepared." With funding from the National Science Foundation's RCMS Program, UMBC is addressing the critical shortage of minority students who enter doctoral programs and have research careers in the sciences. ■



University of Puerto Rico

"When it [mentoring] works, it's something that lasts forever."

Program director:	Brad R. Weiner
Total number of students in program*:	45
Total number of graduates:	21
Average GPA (1991-1994):	3.53
Number of publications and presentations:	22

*Students who stayed in the program for more than 1 year are counted only once.

The University of Puerto Rico (UPR) has had enormous success with the RCMS program. During 1993-94, 10 of 11 students who graduated enrolled in or sought admission to graduate programs in science. No students dropped out, and the minimum GPA was 2.68. Two Puerto Rico-RCMS meetings were organized during 1993-94 with the participation of faculty members and RCMS students. During these meetings, students presented their research results and attended a conference given by young local scientists.

When Felipe Acosta joined the RCMS program at UPR in January 1992, he knew he wanted to go to graduate school someday, but he was unsure if he was ready to commit himself to the extensive time involved. His involvement with the RCMS program has encouraged him to accept the challenge of a doctoral program in civil engineering. Acosta is currently in his third year of graduate school at the Georgia Institute of Technology. Many UPR RCMS students are following along a similar path; 96 percent of all of the program's graduates are pursuing graduate studies in scientific fields.

Mentoring, says program director Brad Weiner, is the key to UPR's success. Weiner recruited faculty mentors who were involved in intensive research programs and willing to take the time to form meaningful relationships with undergraduates. Weiner said that he feels mentoring is essential in the sciences. "Science is not something you learn in the classroom, it's a way of life, and most scientists who are involved in it understand that explicitly. It takes a lot of time to teach students that, and the mentoring relationship helps this process. When it works, it's something that lasts forever."

Stephan Gomez, who began a graduate program in

chemistry in the fall of 1995 at Cornell University, says that her mentoring relationship has been integral to her success. "I could go to [my mentor] for advice or if I needed information and wanted to see where I stood." This type of interaction is exactly what the program strives for.

The program also strives to prepare students to perform research projects and presentations. Every RCMS participant is required to present research to faculty and peers on a regular basis. Acosta says he found this type of practice and training to be very useful. "I liked the challenge and the fact that we all had to share what we were doing and give our ideas." Some UPR students are even given the opportunity to present their findings to a broader audience by attending national and regional conferences.

Gomez also found the opportunity to attend these national and regional conferences quite helpful. She says that her attendance at such conferences heightened her interests in interdisciplinary research. "They gave me the opportunity to meet with my peers and share different kinds of knowledge," she says. That interaction with her peers was the most positive RCMS experience for Gomez. "When I first started the program, I wasn't sure what field I wanted to pursue my Ph.D. in. But sharing with people in other majors and seeing how what they were doing related to what I was doing was very helpful." ■



Directory of RCMS Projects*

Allegheny College

Program director Dr. John Reynders
 Address Allegheny College
 Meadville, PA 16335

Phone 800-835-7780
 Fax 814-337-0431
 Email jreynder@admin.alleg.edu

Disciplines involved Natural and Behavioral Sciences
 Program years 1991–1993

Total number of students	22
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	4
Students in 1992–93	7
Students in 1993–94	11
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	4
Student/faculty ratio	1.8:1
Number of student mentors	3
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	0
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	1

Bennett College

Program director Dr. Michael Cotton
 Address Bennett College
 Biology Department
 900 E. Washington Street
 Greensboro, NC 27401

Phone 910-273-4431
 Fax 910-378-0511
 Email

Disciplines involved Biology, Chemistry, Mathematics,
 and Engineering
 Program years 1993–1994

Total number of students ¹	28
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	
Students in 1993–94	12
Students in 1994–95	16
Number of individual scholars ²	
Number of faculty mentors ³	5
Student/faculty ratio	3:1
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	0
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	5

*See notes on page 57.

California State University, Hayward

Program director Dr. Charlie Harper
 Address California State University,
 Hayward
 Department of Physics
 Hayward, CA 94542
 Phone 510-885-3401
 Fax 510-885-4803
 Email

Disciplines involved Physics
 Program years 1992-1994

Total number of students ¹	43
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	10
Students in 1993-94	17
Students in 1994-95	16
Number of individual scholars ²	
Number of faculty mentors ³	17
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	

Chicago State University

Program director Dr. Joseph G. Young
 Address Chicago State University
 Chemistry and Physics Department
 95th Street at King Drive
 Chicago, IL 60628
 Phone 312-995-2299
 Fax 312-995-3767
 Email bij1jgy@bgu.edu

Disciplines involved Chemistry and Physics
 Program years 1992-1994

Total number of students ¹	36
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	10
Students in 1993-94	11
Students in 1994-95	15
Number of individual scholars ²	
Number of faculty mentors ³	8
Student/faculty ratio	1.4:1
Number of student mentors	3
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	15
Number of graduates from RCMS	1
Graduates enrolled in graduate or medical school	1
Number of pubs or presentations reported	3

City College of the City University of New York

Program director Dr. Daniel L. Akins
Address City College of CUNY
 Department of Chemistry
 Convent Avenue at 138th Street
 New York, NY 10031

Phone 212-650-6953
Fax 212-650-6848
Email dkins@scisuh.cuny.cuny.edu

Disciplines involved Chemistry, Engineering, and
 Physics

Program years 1991–1994

Total number of students ¹	83
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	19
Students in 1992–93	19
Students in 1993–94	26
Students in 1994–95	19
Number of individual scholars ²	
Number of faculty mentors ³	14
Student/faculty ratio	1.4:1
Number of student mentors	0
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	13
Number of graduates from RCMS	13
Graduates enrolled in graduate or medical school	10
Number of pubs or presentations reported	10

City College of the City University of New York

Program director Dr. Neville A. Parker
Address City College of CUNY
 Convent Avenue at 138th Street
 New York, NY 10031

Phone 212-650-8050
Fax 212-650-8374
Email parker@tid1c7.engr.cuny.cuny.edu

Disciplines involved Mathematics, Science, and
 Engineering

Program years 1989–1993

Total number of students ¹	161
Students in 1989–90	12
Students in 1990–91	23
Students in 1991–92	30
Students in 1992–93	42
Students in 1993–94	54
Students in 1994–95	
Number of individual scholars ²	72
Number of faculty mentors ³	45
Student/faculty ratio	1.2:1
Number of student mentors	2
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	30
Number of graduates from RCMS	16
Graduates enrolled in graduate or medical school	10
Number of pubs or presentations reported	24

Clark Atlanta University

Program director Dr. Isabella N. Finkelstein
 Address Clark Atlanta University
 Department of Biology
 Atlanta, GA 30314

Phone 404-880-8131
 Fax 404-880-6181
 Email

Disciplines involved Geology, Biology, Chemistry, and
 Mathematics

Program years 1989–1994

Total number of students ¹	49
Students in 1989–90	2
Students in 1990–91	6
Students in 1991–92	11
Students in 1992–93	14
Students in 1993–94	16
Students in 1994–95	
Number of individual scholars ²	21
Number of faculty mentors ^{3,5}	12
Student/faculty ratio	2:1
Number of student mentors	0
Number of dropouts from RCMS	4
Length of dropout enrollment ⁴	26
Number of graduates from RCMS	8
Graduates enrolled in graduate or medical school	6
Number of pubs or presentations reported	7

Florida A. & M. University

Program director Dr. Soronnadi Nnaji
 Address Florida A. & M. University
 Civil Engineering Department
 2525 Pottsdamer Street
 Tallahassee, FL 32310

Phone 904-487-6127
 Fax 904-487-6142
 Email

Disciplines involved Chemical, Electrical, Civil,
 Mechanical, and Industrial
 Engineering

Program years 1992–1993

Total number of students ¹	158
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	80
Students in 1993–94	78
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	33
Student/faculty ratio	2.4:1
Number of student mentors	9
Number of dropouts from RCMS	7
Length of dropout enrollment ⁴	12
Number of graduates from RCMS	20
Graduates enrolled in graduate or medical school	10
Number of pubs or presentations reported	9

Fordham University

Program director	Dr. Grace M. Vernon
Address	Fordham University Division of Science and Mathematics 113 W. 60th Street New York, NY 10023
Phone	212-636-6310
Fax	718-817-3645
Email	
Disciplines involved	Biology, Chemistry, Physics, Mathematics, and Computer Science
Program years	1992–1994
Total number of students ¹	40
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	10
Students in 1993–94	14
Students in 1994–95	16
Number of individual scholars ²	
Number of faculty mentors ³	10
Student/faculty ratio	1.5:1
Number of student mentors	4
Number of dropouts from RCMS	3
Length of dropout enrollment ⁴	24
Number of graduates from RCMS	2
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	6

Fort Lewis College

Program director	Dr. Omnia El-Hakim
Address	Fort Lewis College Department of Engineering and Physics Durango, CO 80523
Phone	970-247-7160
Fax	970-247-7206
Email	elhakim_0@flc.colorado.edu
Disciplines involved	Engineering, Environmental Management, Engineering Management, Chemistry, Agriculture, Biology, Computer Science, Mathematics, Surveying, Global Positioning Systems, and Geographic Information Systems
Program years	1992–1994
Total number of students ¹	47
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	9
Students in 1993–94	16
Students in 1994–95	22
Number of individual scholars ²	
Number of faculty mentors ³	10
Student/faculty ratio	2:1
Number of student mentors	10
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	8
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	16

Grambling State University

Program director Dr. A.N. Murty
 Address Grambling State University
 Physics Department
 Grambling, LA 71245
 Phone 318-274-2258
 Fax 318-274-3281
 Email murtyan@vax0.gram.edu

Disciplines involved Physics and Chemistry
 Program years 1989-1994

Total number of students ¹	81
Students in 1989-90	9
Students in 1990-91	13
Students in 1991-92	14
Students in 1992-93	14
Students in 1993-94	16
Students in 1994-95	15
Number of individual scholars ²	
Number of faculty mentors ³	8
Student/faculty ratio	2:1
Number of student mentors	0
Number of dropouts from RCMS	12
Length of dropout enrollment ⁴	11.5
Number of graduates from RCMS	9
Graduates enrolled in graduate or medical school	7
Number of pubs or presentations reported	20

Hampton University

Program director Dr. Isai T. Urasa
 Address Hampton University
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 Fax 804-727-5084
 Email urasa@hamptonu.edu

Disciplines involved Biology, Chemistry, Engineering,
 Mathematics, and Physics
 Program years 1991-1994

Total number of students ¹	34
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	8
Students in 1992-93	12
Students in 1993-94	8
Students in 1994-95	6
Number of individual scholars ²	
Number of faculty mentors ³	11
Student/faculty ratio	2:1
Number of student mentors	0
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	12
Number of graduates from RCMS	12
Graduates enrolled in graduate or medical school	7
Number of pubs or presentations reported	10

Harvey Mudd College

Program director	Dr. Bill Daub
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Phone	909-621-8527
Fax	909-621-8967
Email	
Disciplines involved	Computer Science, Mathematics, Physics, Chemistry, Engineering, and Biology
Program years	1990–1994
Total number of students ¹	105
Students in 1989–90	
Students in 1990–91	8
Students in 1991–92	15
Students in 1992–93	21
Students in 1993–94	29
Students in 1994–95	32
Number of individual scholars ²	
Number of faculty mentors ³	14
Student/faculty ratio	1.7:1
Number of student mentors	4
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	21
Number of graduates from RCMS	4
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	4

Howard University

Program director	Dr. Winston A. Anderson
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Phone	202-806-6950
Fax	202-806-4564
Email	
Program years	1991–1994
Total number of students ^{1,6}	71 (22)
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	3 (7)
Students in 1992–93	18 (9)
Students in 1993–94	30 (6)
Students in 1994–95	20
Number of individual scholars ²	56
Number of faculty mentors ³	14
Student/faculty ratio	2:1
Number of student mentors	4
Number of dropouts from RCMS	5
Length of dropout enrollment ⁴	8.25
Number of graduates from RCMS	21
Graduates enrolled in graduate or medical school	12
Number of pubs or presentations reported	4

Iowa State University

Program director Dr. Lauren Zachary
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 Department of Aerospace
 Engineering and Engineering
 Mechanics
 2019 Black Engineering Building
 Ames, IA 50011
 Phone 515-294-0093
 Fax 515-294-8584
 Email
 Disciplines involved Aerospace, Materials Science,
 Electrical, Computer, Mechanical,
 Chemical, Industrial, Civil, and
 Construction Engineering
 Program years 1990–1994
 Total number of students¹ 76
 Students in 1989–90
 Students in 1990–91 12
 Students in 1991–92 15
 Students in 1992–93 12
 Students in 1993–94 18
 Students in 1994–95 19
 Number of individual scholars²
 Number of faculty mentors³ 17
 Student/faculty ratio 1.1:1
 Number of student mentors 0
 Number of dropouts from RCMS 5
 Length of dropout enrollment⁴ 12.6
 Number of graduates from RCMS 11
 Graduates enrolled in graduate or medical school 8
 Number of pubs or presentations reported 3

Jackson State University

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 Biology Department
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 Jackson, MS 39217
 Phone 601-968-2153
 Fax 601-968-2058
 Email
 Disciplines involved Physics, Meteorology,
 Mathematics, and Marine and
 Environmental Sciences
 Program years 1991–1993
 Total number of students¹ 102
 Students in 1989–90
 Students in 1990–91
 Students in 1991–92 20
 Students in 1992–93 35
 Students in 1993–94 47
 Students in 1994–95
 Number of individual scholars²
 Number of faculty mentors³ 22
 Student/faculty ratio 2:1
 Number of student mentors 16
 Number of dropouts from RCMS 1
 Length of dropout enrollment⁴ 9
 Number of graduates from RCMS 30
 Graduates enrolled in graduate or medical school 23
 Number of pubs or presentations reported 16

Marquette University

Program director Dr. Jon K. Jensen
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 College of Engineering
 Milwaukee, WI 53233
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 Email 6570jensen@vax.csd.mu.edu

Disciplines involved Biomedical, Civil, Electrical,
 Industrial, and Mechanical
 Engineering

Program years 1989–1993

Total number of students ¹	50
Students in 1989–90	11
Students in 1990–91	12
Students in 1991–92	11
Students in 1992–93	9
Students in 1993–94	7
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	
Student/faculty ratio	1.5:1
Number of student mentors	0
Number of dropouts from RCMS	
Length of dropout enrollment ⁴	0
Number of graduates from RCMS	7
Graduates enrolled in graduate or medical school	5
Number of pubs or presentations reported	8

**Massachusetts
Institute of Technology**

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 Technology
 Department of Physics
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 Cambridge, MA 02139–4307

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 Fax 617-253-8554
 Email

Disciplines involved Physics, Biology, Chemistry, Earth
 Science, Atmospheric Science,
 Planetary Sciences, Mathematics,
 and Brain and Cognitive Sciences

Program years 1991–1993

Total number of students ¹	68
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	3
Students in 1992–93	31
Students in 1993–94	34
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	26
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	
Length of dropout enrollment ⁴	
Number of graduates from RCMS	7
Graduates enrolled in graduate or medical school	4
Number of pubs or presentations reported	

Morehouse College

Program director Dr. Rosalyn M. Patterson
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 Biology Department
 830 Westview Drive, SW
 Atlanta, GA 30314

Phone 404-681-2800
 Fax 404-522-9564
 Email

Disciplines involved Biology, Chemistry, Physics, and
 Psychology

Program years 1991–1994

Total number of students ¹	52
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	12
Students in 1992–93	13
Students in 1993–94	14
Students in 1994–95	13
Number of individual scholars ²	
Number of faculty mentors ³	10
Student/faculty ratio	1.3:1
Number of student mentors	2
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	13.5
Number of graduates from RCMS	9
Graduates enrolled in graduate or medical school	7
Number of pubs or presentations reported	23

Navajo Community College

Program director Dr. Mark C. Bauer
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 Mathematics Department
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 Shiprock, NM 87420

Phone 505-368-5164
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Disciplines involved Biology, Chemistry, Computer
 Science, Drafting, Engineering,
 English, Environmental Science,
 Geology, Mathematics, Navajo
 Culture, Navajo Language, and
 Physics

Program years 1992–1994

Total number of students ¹	66
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	11
Students in 1993–94	21
Students in 1994–95	34
Number of individual scholars ²	
Number of faculty mentors ³	15
Student/faculty ratio	2.5:1
Number of student mentors	
Number of dropouts from RCMS	6
Length of dropout enrollment ⁴	
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	8

Northern Arizona University

Program director	Dr. Ronald L. Trosper
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Phone	602-523-6653
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Email	rt@a1.ucc.nau.edu
Disciplines involved	Forest Management, Silviculture, Forest and Range Ecology, Wildlife Management, Forest Hydrology, Entomology, Economics, and Hydrology
Program years	1991-1994
Total number of students ¹	104
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	21
Students in 1992-93	23
Students in 1993-94	28
Students in 1994-95	32
Number of individual scholars ²	
Number of faculty mentors ³	7
Student/faculty ratio	
Number of student mentors	0
Number of dropouts from RCMS	6
Length of dropout enrollment ⁴	10
Number of graduates from RCMS	12
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	4

Oklahoma State University

Program director	Dr. George Dixon
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Fax	405-744-6811
Email	
Disciplines involved	Physics, Engineering, and Biological Sciences
Program years	1990-1993
Total number of students ¹	47
Students in 1989-90	
Students in 1990-91	7
Students in 1991-92	11
Students in 1992-93	14
Students in 1993-94	15
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ³	17
Student/faculty ratio	2.8:1
Number of student mentors	0
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	10
Number of graduates from RCMS	7
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	38

Pennsylvania State University

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 College of Engineering
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 University Park, PA 16802

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 Email

Disciplines involved Natural Sciences and Engineering
 Program years 1991–1993

Total number of students ¹	74
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	25
Students in 1992–93	24
Students in 1993–94	25
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	25
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	10
Length of dropout enrollment ⁴	4.8
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	2

Polytechnic University

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 Brooklyn, NY 11201

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 Email ntooney@duke.poly.edu

Disciplines involved Chemistry, Chemical Engineering,
 Physics, Mechanical Engineering,
 and Aerospace Engineering
 Program years 1992–1993

Total number of students ¹	47
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	15
Students in 1993–94	32
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	9
Student/faculty ratio	3:1
Number of student mentors	9
Number of dropouts from RCMS	4
Length of dropout enrollment ⁴	12
Number of graduates from RCMS	4
Graduates enrolled in graduate or medical school	3
Number of pubs or presentations reported	6

Prairie View A. & M. University

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Princeton University

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 Electrical Engineering Department
 Princeton, NJ 08544-5263

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 Email

Disciplines involved Engineering and Computer Science
 Program years 1992-1993

Total number of students ¹	13
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	2
Students in 1993-94	11
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ^{3,7}	9
Student/faculty ratio	1.2:1
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	1
Graduates enrolled in graduate or medical school	1
Number of pubs or presentations reported	

San Diego State University

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Disciplines involved Astronomy, Chemistry, Computer
 Science, Geological Sciences,
 Mathematical Sciences, and
 Physics

Program years 1991-1994

Total number of students ¹	42
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	9
Students in 1992-93	10
Students in 1993-94	11
Students in 1994-95	12
Number of individual scholars ²	
Number of faculty mentors ³	8
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	6
Number of graduates from RCMS	13
Graduates enrolled in graduate or medical school	6
Number of pubs or presentations reported	

South Carolina State University

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 Email

Disciplines involved Biology, Chemistry, Physics,
 Computer Science, and
 Mathematics
 Program years 1992–1994

Total number of students ¹	57
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	10
Students in 1993–94	20
Students in 1994–95	27
Number of individual scholars ²	
Number of faculty mentors ³	15
Student/faculty ratio	2:1
Number of student mentors	14
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	
Number of graduates from RCMS	2
Graduates enrolled in graduate or medical school	1
Number of pubs or presentations reported	7

Southern Illinois University at Edwardsville

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 Email

Disciplines involved Biology, Chemistry, Engineering,
 and Physics
 Program years 1991–1994

Total number of students ¹	84
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	16
Students in 1992–93	17
Students in 1993–94	24
Students in 1994–95	27
Number of individual scholars ²	
Number of faculty mentors ³	8
Student/faculty ratio	3.4:1
Number of student mentors	12
Number of dropouts from RCMS	6
Length of dropout enrollment ⁴	9
Number of graduates from RCMS	5
Graduates enrolled in graduate or medical school	4
Number of pubs or presentations reported	14

Southern University and A. & M. College

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Disciplines involved Physics
 Program years 1991–1994

Total number of students ¹	100
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	14
Students in 1992–93	25
Students in 1993–94	30
Students in 1994–95	31
Number of individual scholars ²	
Number of faculty mentors ³	17
Student/faculty ratio	2.3:1
Number of student mentors	5
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	9
Number of graduates from RCMS	15
Graduates enrolled in graduate or medical school	10
Number of pubs or presentations reported	14

Spelman College

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 Mathematics Department
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 Atlanta, GA 30314
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 Email

Disciplines involved Mathematics
 Program years 1991–1994

Total number of students ¹	39
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	7
Students in 1992–93	16
Students in 1993–94	9
Students in 1994–95	7
Number of individual scholars ²	
Number of faculty mentors ³	4
Student/faculty ratio	2.3:1
Number of student mentors	0
Number of dropouts from RCMS	2
Length of dropout enrollment ⁴	18
Number of graduates from RCMS	7
Graduates enrolled in graduate or medical school	6
Number of pubs or presentations reported ⁵	11*

Spelman College

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 Atlanta, GA 30314

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 Email

Disciplines involved Chemistry
 Program years 1993–1994

Total number of students ¹	21
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	
Students in 1993–94	10
Students in 1994–95	11
Number of individual scholars ²	11
Number of faculty mentors ³	9
Student/faculty ratio	1.3:1
Number of student mentors	8
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	18
Number of graduates from RCMS	1
Graduates enrolled in graduate or medical school	1
Number of pubs or presentations reported ⁵	10

State University of New York at Old Westbury

Program director Dr. Henry Teoh
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 Chemistry and Physics Department
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 Albany, NY 12246–0009

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 Email

Disciplines involved Biology, Chemistry, Mathematics,
 and Computer Science
 Program years 1992–1994

Total number of students ¹	82
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	22
Students in 1993–94	29
Students in 1994–95	31
Number of individual scholars ²	48
Number of faculty mentors ³	8
Student/faculty ratio	2:1
Number of student mentors	5
Number of dropouts from RCMS	5
Length of dropout enrollment ⁴	15
Number of graduates from RCMS	10
Graduates enrolled in graduate or medical school	6
Number of pubs or presentations reported	9

State University of New York at Stony Brook

Program director Dr. David L. Ferguson
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Disciplines involved Applied Mathematics,
Mathematics, Engineering,
Computer Science, Physics, and
Chemistry

Program years 1992-1994

Total number of students ¹	155
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	22
Students in 1993-94	61
Students in 1994-95	72
Number of individual scholars ²	
Number of faculty mentors ³	15
Student/faculty ratio	5:1
Number of student mentors	32
Number of dropouts from RCMS	11
Length of dropout enrollment ⁴	16
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	9

Stevens Institute of Technology

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Disciplines involved Chemistry and Biology
Program years 1994-1995

Total number of students ¹	17
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	
Students in 1993-94	
Students in 1994-95	17
Number of individual scholars ²	17
Number of faculty mentors ³	
Student/faculty ratio	
Number of student mentors	
Number of dropouts from RCMS	
Length of dropout enrollment ⁴	
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	

Talladega College

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 Talladega, AL 35160

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 Fax 205-362-1090
 Email

Disciplines involved Biology, Chemistry, Mathematics,
 Physics, and Computer Science

Program years 1991-1994

Total number of students ¹	44
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	10
Students in 1992-93	12
Students in 1993-94	11
Students in 1994-95	11
Number of individual scholars ²	
Number of faculty mentors ³	7
Student/faculty ratio	1.6:1
Number of student mentors	15
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	10
Graduates enrolled in graduate or medical school	4
Number of pubs or presentations reported	5

Texas A&M University

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 204 Zachry Engineering Center
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 Email watson@ee.tamu.edu

Disciplines involved Natural Sciences, Mathematics,
 and Engineering

Program years 1989-1993

Total number of students ¹	249
Students in 1989-90	25
Students in 1990-91	36
Students in 1991-92	47
Students in 1992-93	54
Students in 1993-94	87
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ³	62
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	14
Length of dropout enrollment ⁴	19
Number of graduates from RCMS	70
Graduates enrolled in graduate or medical school	32
Number of pubs or presentations reported	59

Texas A&M University

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Tuskegee University

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Disciplines involved Chemistry
 Program years 1991–1993

Total number of students ¹	21
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	11
Students in 1993–94	10
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	10
Student/faculty ratio	1:1
Number of student mentors	3
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	2
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	5

University of California, Davis

Program director Dr. William M. Jackson
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 Department of Chemistry
 Davis, CA 95616
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 Fax 916-752-8995
 Email

Disciplines involved Chemistry, Computer Science,
 Geology, Mathematics, Physics,
 and Statistics
 Program years 1993–1994

Total number of students ¹	74
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	
Students in 1993–94	29
Students in 1994–95	45
Number of individual scholars ²	
Number of faculty mentors ³	42
Student/faculty ratio	1:1
Number of student mentors	25
Number of dropouts from RCMS	4
Length of dropout enrollment ⁴	11.25
Number of graduates from RCMS	1
Graduates enrolled in graduate or medical school	1
Number of pubs or presentations reported	22

University of California, Irvine

Program director Dr. Lubomir Bic
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 Computer Science
 Irvine, CA 92717
 Phone 714-856-5248
 Fax 714-856-4056
 Email bic@ics.uci.edu

Disciplines involved Computer Science
 Program years 1993

Total number of students ¹	49
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	
Students in 1993-94	49
Students in 1994-95	
Number of individual scholars ²	49
Number of faculty mentors ³	
Student/faculty ratio	
Number of student mentors	
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	

University of California, Riverside

Program director Dr. John Ashe
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 Riverside, CA 92521
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 Email

Disciplines involved Psychology, Physics, Botany,
 Genetics, Mathematics, and
 Biology
 Program years 1991-1992

Total number of students ¹	12
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	3
Students in 1992-93	9
Students in 1993-94	
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ³	9
Student/faculty ratio	1:1
Number of student mentors	3
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	10
Graduates enrolled in graduate or medical school	10
Number of pubs or presentations reported	39

University of California, San Diego

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Disciplines involved Oceanography
Program years 1990-1994

Total number of students ¹	148
Students in 1989-90	
Students in 1990-91	23
Students in 1991-92	38
Students in 1992-93	28
Students in 1993-94	34
Students in 1994-95	25
Number of individual scholars ²	
Number of faculty mentors ³	28
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	1
Length of dropout enrollment ⁴	1
Number of graduates from RCMS	16
Graduates enrolled in graduate or medical school	14
Number of pubs or presentations reported	

University of Guam

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 Mangilao, GU 96923
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Disciplines involved Biology, Geology, and
 Environmental Science
Program years 1992-1993

Total number of students ¹	22
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	8
Students in 1993-94	14
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ³	9
Student/faculty ratio	1.6:1
Number of student mentors	0
Number of dropouts from RCMS	3
Length of dropout enrollment ⁴	9
Number of graduates from RCMS	2
Graduates enrolled in graduate or medical school	2
Number of pubs or presentations reported	

University of Maryland Baltimore County

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Email

Disciplines involved Engineering, Mathematics,
Computer Science, Chemistry,
Biology, and Physics

Program years 1991–1993

Total number of students ¹	70
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	20
Students in 1992–93	20
Students in 1993–94	30
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	15
Student/faculty ratio	2:1
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	22
Graduates enrolled in graduate or medical school	20
Number of pubs or presentations reported	40

University of Maryland Eastern Shore

Program director Dr. Livingston Marshall
Address University of Maryland Eastern
Shore
Natural Sciences Department
Princess Anne, MD 21853
Phone 410-651-6013
Fax 410-651-7739
Email

Disciplines involved Environmental Science and Biology
Program years 1991–1992

Total number of students ¹	9
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	9
Students in 1992–93	
Students in 1993–94	
Students in 1994–95	
Number of individual scholars ²	9
Number of faculty mentors ³	5
Student/faculty ratio	1.8:1
Number of student mentors	4
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	0
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	4

University of Michigan at Ann Arbor

Program director Dr. Warren C. Whatley
Address University of Michigan at Ann Arbor
475 E. Jefferson
Ann Arbor, MI 48109-1070
Phone 313-747-4548
Fax 313-763-2447
Email Warren.C.Whatley@um.cc.umich.edu

Disciplines involved Sciences, Engineering, and
Mathematics

Program years 1992-1994

Total number of students ¹	83
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	25
Students in 1993-94	31
Students in 1994-95	27
Number of individual scholars ²	
Number of faculty mentors ³	21
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	19
Graduates enrolled in graduate or medical school	15
Number of pubs or presentations reported	

University of Missouri at Rolla

Program director Dr. Daopu T. Numbere
Address University of Missouri at Rolla
119 McNutt Hall
Rolla, MO 65401
Phone 314-341-4758
Fax 314-341-6935
Email

Disciplines involved Science, Engineering, and
Mathematics

Program years 1994

Total number of students ¹	14
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	
Students in 1992-93	
Students in 1993-94	
Students in 1994-95	14
Number of individual scholars ²	
Number of faculty mentors ³	14
Student/faculty ratio	1:1
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	0
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	

University of Oklahoma

Program director Dr. Wayne Steen
 Address University of Oklahoma
 College of Engineering
 Felgar Hall 221
 Norman, OK 73019
 Phone 405-325-5362
 Fax 405-325-7508
 Email
 Disciplines involved Engineering
 Program years 1989-1994

Total number of students ¹	134
Students in 1989-90	15
Students in 1990-91	14
Students in 1991-92	15
Students in 1992-93	
Students in 1993-94	25
Students in 1994-95	65
Number of individual scholars ²	
Number of faculty mentors ³	7
Student/faculty ratio ³	1:1
Number of student mentors	0
Number of dropouts from RCMS	12
Length of dropout enrollment ⁴	7
Number of graduates from RCMS	15
Graduates enrolled in graduate or medical school	5
Number of pubs or presentations reported	

University of Puerto Rico

Program director Dr. Brad R. Weiner
 Address University of Puerto Rico
 Research Center for Science &
 Engineering
 Box 23334, University Station
 San Juan, PR 00931-3334
 Phone 809-765-5170
 Fax 809-751-0625
 Email evelyn@adam.uprr.pr

Disciplines involved Chemistry
 Program years 1991-1993

Total number of students ¹	72
Students in 1989-90	
Students in 1990-91	
Students in 1991-92	24
Students in 1992-93	24
Students in 1993-94	24
Students in 1994-95	
Number of individual scholars ²	
Number of faculty mentors ³	27
Student/faculty ratio	1:1.2
Number of student mentors	0
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	21
Graduates enrolled in graduate or medical school	18
Number of pubs or presentations reported	23

University of Texas at Austin

Program director Dr. Christine M. Maziar
 Address University of Texas at Austin
 Department of Electrical &
 Computer Engineering
 Austin, TX 78712

Phone 512-471-3674
 Fax 512-471-8575
 Email

Disciplines involved Engineering
 Program years 1990–1993

Total number of students ¹	100
Students in 1989–90	
Students in 1990–91	24
Students in 1991–92	24
Students in 1992–93	21
Students in 1993–94	31
Students in 1994–95	
Number of individual scholars ²	
Number of faculty mentors ³	21
Student/faculty ratio	1:1
Number of student mentors	25
Number of dropouts from RCMS	
Length of dropout enrollment ⁴	
Number of graduates from RCMS	15
Graduates enrolled in graduate or medical school	5
Number of pubs or presentations reported	3

University of Texas at El Paso

Program director Dr. Arturo Bronson
 Address University of Texas at El Paso
 College of Engineering
 El Paso, TX 79968

Phone 915-747-5501
 Fax 915-747-5073
 Email

Disciplines involved Chemistry; Geological Sciences;
 Mathematics; Physics; and Civil,
 Electrical, and Materials
 Engineering
 Program years 1990–1994

Total number of students ¹	99
Students in 1989–90	
Students in 1990–91	18
Students in 1991–92	21
Students in 1992–93	18
Students in 1993–94	23
Students in 1994–95	19
Number of individual scholars ²	
Number of faculty mentors ³	13
Student/faculty ratio	1.5:1
Number of student mentors	0
Number of dropouts from RCMS	7
Length of dropout enrollment ⁴	
Number of graduates from RCMS	7
Graduates enrolled in graduate or medical school	4
Number of pubs or presentations reported	13

University of Texas at San Antonio

Program director Dr. Betty Travis
 Address University of Texas at San Antonio
 College of Science and Engineering
 San Antonio, TX 78285
 Phone 210-691-5556
 Fax 210-691-4439
 Email Btravis@utsa.edu

Disciplines involved Mathematics, Computer Science,
 and Statistics
 Program years 1991–1994

Total number of students ¹	35
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	6
Students in 1992–93	9
Students in 1993–94	10
Students in 1994–95	10
Number of individual scholars ²	
Number of faculty mentors ³	10
Student/faculty ratio	1:1
Number of student mentors	12
Number of dropouts from RCMS	0
Length of dropout enrollment ⁴	
Number of graduates from RCMS	10
Graduates enrolled in graduate or medical school	9
Number of pubs or presentations reported	16

Wayne State University

Program director Dr. William B. Rolnick
 Address Wayne State University
 Department of Physics and
 Astronomy
 Detroit, MI 48202
 Phone 313-577-2734
 Fax 313-577-3932
 Email wrolnick@hal.physics.wayne.edu

Disciplines involved Biology, Chemistry, Computer
 Science, Geology, Mathematics,
 Physics, and Engineering
 Program years 1991–1994

Total number of students ¹	67
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	11
Students in 1992–93	20
Students in 1993–94	18
Students in 1994–95	18
Number of individual scholars ²	
Number of faculty mentors ³	8
Student/faculty ratio	1:1
Number of student mentors	10
Number of dropouts from RCMS	13
Length of dropout enrollment ⁴	23
Number of graduates from RCMS	
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	10

Xavier University of Louisiana

Program director Dr. Akundi A. Murty
 Address Xavier University of Louisiana
 Physics and Engineering
 Department
 7325 Palmeto Street
 New Orleans, LA 70125
 Phone 504-483-7647
 Fax 504-482-1561
 Email

Disciplines involved Chemistry, Computer Science,
 Engineering, Mathematics, and
 Physics

Program years 1992–1994

Total number of students ¹	74
Students in 1989–90	
Students in 1990–91	
Students in 1991–92	
Students in 1992–93	13
Students in 1993–94	27
Students in 1994–95	34
Number of individual scholars ²	
Number of faculty mentors ³	17
Student/faculty ratio	2:1
Number of student mentors	0
Number of dropouts from RCMS	8
Length of dropout enrollment ⁴	17
Number of graduates from RCMS	0
Graduates enrolled in graduate or medical school	
Number of pubs or presentations reported	6

Notes

¹This number counts students once for each year they are in the program.

²This number counts students in the program for more than 1 year only once.

³Faculty mentors who were in the program during the 1993–94 academic year.

⁴Average number of months students participated in the RCMS program before they dropped out.

⁵Faculty mentors in the program during the 1991–92 academic year.

⁶The number in parenthesis is the number of students who participated as part of High School Teacher Support or Mathematics Graduate Student Support.

⁷Number of faculty mentors for the 1992–93 academic year.

⁸Submitted presentations did not specify the program director; therefore, half of the submissions are listed under each program director.

⁹Student/faculty ratio is for the 1991–92 academic year.

RCMS Student Publications and Presentations

RCMS students have published many scientific articles and have made numerous presentations. The following is a list of publications and presentations, as reported by RCMS project directors. Published materials are marked with an asterisk (*).

RCMS Institutions	Publications	Presentations	Total	RCMS Institutions	Publications	Presentations	Total
Allegheny College	0	1	1	So Illinois U	0	14	14
Bennett College	0	5	5	Southern U	4	12	16
Chicago St U	0	3	3	Spelman College	4	17	21
CC of CUNY	2	8	10	Stevens Inst of Tech	0	6	6
CC of CUNY	0	43	43	SUNY at Old Westbury	0	9	9
Clark Atlanta U	0	7	7	SUNY at Stony Brook	1	8	9
California St U, Hayward	—	—	—	Talladega College	0	5	5
Florida A. & M. U	1	8	9	Texas A&M U	1	60	61
Fordham U	0	6	6	Tuskegee U	1	4	5
Fort Lewis College	1	14	15	U of California, Davis	1	21	22
Grambling State U	1	19	20	U of California, Irvine	—	—	—
Hampton U	0	10	10	U of California, Riverside	7	33	40
Harvey Mudd College	1	3	4	U of California, San Diego	—	—	—
Howard U	3	1	4	U of Guam	—	—	—
Iowa St U	0	3	3	U of Maryland Balt. County	9	31	40
Jackson St U	1	15	16	U of Maryland Eastern Shore	0	4	4
Marquette U	1	7	8	U of Michigan	—	—	—
Massachusetts Inst of Tech	—	—	—	U of Missouri at Rolla	—	—	—
Morehouse College	1	22	23	U of Oklahoma	—	—	—
Navajo Comm College	0	8	8	U of Puerto Rico	0	21	21
Northern Arizona U	0	4	4	U of Texas at El Paso	3	10	13
Oklahoma St U	7	30	37	U of Texas at San Antonio	0	16	16
Pennsylvania St U	0	2	2	U of Texas at Austin	0	3	3
Polytechnic U	2	4	6	Wayne St U	4	6	10
San Diego St U	—	—	—	Xavier U of Louisiana	1	5	6
South Carolina St College	0	6	6				
				Total	57	514	571

Allegheny College

Marc Montalvo. **Computations in enveloping algebras.** Presented at the (1) Mathematical Association of America, Spring 1993; (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Bennett College

Tiffany Nichole Bailey. **Neutralizing stomach acid.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Marsha A. Hawkins. **Heritability of blood pressure in white carneau pigeons.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Makia S. Moore. **The euler characteristic and some of its applications.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

B.P.C. Sekhara Rao, W.D. Wagner, and Keisha N. Blair. **Diet-aggravated atherosclerosis in white carneau pigeons.** Presented at the second annual Historically Black Colleges and Universities/Private Sector Energy Research and Development Technology Transfer Symposium, Apr. 18–22, 1994, Birmingham, AL.

B.P.C. Sekhara Rao, W.D. Wagner, and Marsha Hawkins. **Measurement of heritability estimates of blood pressure in white carneau pigeons.** Presented at the second annual Historically Black Colleges and Universities/Private Sector Energy Research and Development Technology Transfer Symposium, Apr. 18–22, 1994, Birmingham, AL.

Chicago State University

Lachandra B. Finley and Okemah N. Wheat. **Solubility of selected strontium compounds.** Poster presented at the Illinois Board of Governors Universities sixth annual Student Research Conference, Apr. 7–8, 1995, Chicago State University, Chicago, IL.

Cecilia A. Hernandez. **High yield synthesis of tribromochloromethane.** Poster presented at the Illinois Board of Governors Universities sixth annual Student Research Conference, Apr. 7–8, 1995, Chicago State University, Chicago, IL.

Traci Herny. **The use of the DIPPR database to study the CAChe worksystem software in its ability to predict the physical properties of industrially important compounds.** Poster presented at the Illinois Board of Governors Universities sixth annual Student Research Conference, Apr. 7–8, 1995, Chicago State University, Chicago, IL.

City College of the City University of New York (Daniel L. Akins)

Yuddy Almonte. **Study of surface phase transitions in surfactant monolayers.** Presented at the Scholars Day 1995, May 12, 1995, City College of the City University of New York, New York, NY.

Sandra Avila. **Data clustering.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Ooma Cutler. **New biomimetic materials for simultaneous polymerization and mineralization.** Presented at Scholars Day 1995, May 12, 1995, City College of the City University of New York, New York, NY.

Max Innocent. **Steady-state and time-resolved fluorescence spectroscopy of benzimidazolocarboyanine.** Presented at (1) Scholars Day 1995, May 12, 1995, City College of the City University of New York, NY; (2) the NARCE Conference, Mar. 16, 1995, Hampton, VA.

Alphie Mullings. **Measurements of stratospheric ozone thickness by means of the Brewer spectroradiometer.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Wilmert Pereyra. **Characterization of semi-conductor materials.** Presented at the NARCE Conference, Mar. 16, 1995, Hampton, VA.

Wilmert Pereyra. **Determination of the lower limits of detection of oxygenated additives in gasoline using FTMS.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Betelhem Shewarigid. **Defects density measurements on II-VI semiconductor epitaxial layers.** Presented at the Scholars Day 1995, May 12, 1995, City College of the City University of New York, New York, NY.

*Michelle Wright. **Effective dipole moment changes of cresyl violet in various amorphous hosts.** *Journal of Physics and Chemistry* [accepted].

*Michelle Wright. **Effective dipole moment changes as a probe of guest-host interactions in amorphous materials at low temperature.** *Journal of Physics and Chemistry* 97, 32.

City College of the City University of New York (Neville A. Parker)

NOTE: Informal presentations, local presentations, presentations at other universities as part of internships, and presentations at the NARCE Annual Conference at Hampton University, VA, are not included in this list.

Verrol Adams. **The promise of high accelerating field through unique pulse shapes.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Westin Bent. **Dynamic surface tension of a polyethoxylated surfactant.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Westin Bent. **Measurement of dynamic interfacial tensions.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Westin Bent. **Modeling composite microstructures using a finite element model.** Presented at the (1) RCMS/CASI dry-run 1994 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 22, 1994, New York, NY; and (2) City College of New York Professional Opportunities in Research and Teaching/Scholar's Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Mark Brathwaite. **Structural changes in the eye during blinking.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Kirk Campbell. **Distribution of linear antigenic sites in sibling clones of a novel NY HIV-I subtype.** Poster presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Frantz Camulaire. **Measuring and analyzing exhaust emissions from automobiles.** Presented at (1) the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY; and (2) at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Frantz Camulaire. **Measuring and analyzing exhaust gas emissions.** Presented at the RCMS/CASI dry-run 1993 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 14, 1993, New York, NY.

Frantz Camulaire. **Optical methods for visualizing compressed flow.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Tracy DeJesus. **Analysis of implant surface response to mechanical wear: bead blasted surface.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Tracy DeJesus. **Analysis of implant surface response to mechanical wear: bead blasted surfaces.** Presented (1) at the RCMS/CASI dry-run 1993 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 14, 1993, New York, NY; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Tracy DeJesus. **Monitoring exhaust gases from alternative fuel vehicles.** Poster presented at Scholars Day 1992, May 8, 1992, City College of the City University of New York, New York, NY.

Tracy DeJesus and Kester Thompson. **Statistical error analysis of turbulent flows.** Poster presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Julie Dike. **Application of Mathematica to solutions of flow simulations and solutions of electron-molecule scattering of H₂⁺.** Presented at (1) the RCMS/CASI dry-run 1992 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 10, 1992, New York, NY; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Julie Dike. **Electron impact dissociation of CF₄.** Poster presented at Scholars Day 1992, May 8, 1992, City College of the City University of New York, New York, NY.

Carl Dorestant. **Thin film optical waveguide.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Carl Dorestant. **Thin film optical waveguides.** Poster presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Michel Ducrepin. **Chemical sensors based on semiconductors.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Michel Ducrepin. **Optical emissions from electron impact excited teos.** Poster presented at Scholars Day 1993, May 7, 1993, the City College of the City University of New York, New York, NY.

Michel Ducrepin. **Shadowgraph of free heat convection.** Presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Michel Ducrepin. **Survey of an air gap flash-shadowgraph of free heat convection from a soldering iron.** Presented at (1) the RCMS/CASI dry-run 1993 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 14, 1993, New York, NY; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Tracy Edwards. **Desiccation resistance in natural populations of two siblings in the genus *drosophila* from Laguna Verde, Veracruz, Mexico.** Presented at (1) the RCMS/CASI dry-run 1992 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 10, 1992, New York, NY; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC; and poster presented at Scholars Day 1992, May 8, 1992, City College of the City University of New York, New York, NY.

Rudolph Frampton. **Contaminants in ground water.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Evans Francois. **Monoclonal antibody specific for IgD receptors on human T lymphocyte.** Poster presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Jacquelin Guiteau. **Interactive visualization for teaching of signal and systems concepts.** Presented at (1) the RCMS/CASI dry-run 1992 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 10, 1992, New York, NY; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Frantz Jules. **Computer-aided manufacture using PC-based CNC.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Jose Lorenzo. **Fast fluidized bed radial pressure distribution.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Hector Minero. **Color mapping in acoustic daylight.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Kenroy Noicely. **An optical adsorbance technique for measuring the wetting layer thickness.** Presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY; and poster presented at (1) the seventy-fifth anniversary of the City College of New York School of Engineering, Apr. 26, 1995, New York, NY; and at (2) City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Julio Paredes. **Models of artificial life.** Presented at the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Gary Pestano. **Distribution of linear antigenic peptides in the GP120 sequences in divergent HIV-I isolates.** Poster presented at (1) Scholars Day 1993, May 7, 1993, the City College of the City University of New York, New York, NY; and (2) Scholars Day 1992, May 8, 1992, the City College of the City University of New York, New York, NY.

Andres Racines. **Duffing oscillator.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Kevin Reid. **Gaussian derivative model for edge enhancement.** Poster presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Kevin Reid and Kevin Barrow. **Multiscale edge detection.** Poster presented at (1) the City College of New York Professional Opportunities in Research and Teaching/Scholars Day 1994, Apr. 29, 1994, the City College of the City University of New York, New York, NY; (2) the seventy-fifth anniversary of the City College of New York School of Engineering, Apr. 26, 1995, New York, NY.

Pedro Santos. **Computing eigenvalues of the discrete time matrices of a Markov chain.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Pedro Santos. **Population projection.** Presented at the (1) RCMS/CASI dry-run 1994 for the NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 22, 1994, New York, NY; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) City College of New York Professional Opportunities in Research and Teaching/Scholars Day, Apr. 29, 1994, City College of the City University of New York, New York, NY.

Livingston Smith. **Erosion control: Stabilizing the soil by mulching.** Poster presented at (1) City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY; and (2) the 75th anniversary of the City College of New York School of Engineering, Apr. 26, 1995, New York, NY.

Kester Thompson, Tracy DeJesus, and Frantz Camulaire. **Development of a measurement technique for the concentration of pollutants emitted from exhaust pipes in motor vehicles.** Poster presented at Scholars Day 1993, May 7, 1993, the City College of the City University of New York, New York, NY.

Pablo Valle. **Use of construction and demolition debris as a substitute for aggregate in asphalt pavement.** Presented at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY.

Trenea Williams. **Analyzing the aggregate modules of cartilage.** Poster presented (1) at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY; and (2) at the seventy-fifth anniversary of the City College of New York School of Engineering, Apr. 26, 1995, New York, NY.

Trenea Williams and Pablo Valle. **Use of construction and demolition debris as a substitute for aggregate in asphalt pavement.** Poster presented at the City College of New York Professional Opportunities in Research and Teaching, Apr. 29, 1994, the City College of the City University of New York, New York, NY.

Melody Zevallos-Quintana. **Use of construction and demolition debris as a substitute for aggregate in asphalt pavements.** Presented (1) at City Lights 1995/Scholars Day 1995, May 12, 1995, the City College of the City University of New York, New York, NY; and (2) at the seventy-fifth anniversary of the City College of New York School of Engineering, Apr. 26, 1995, New York, NY.

Clark Atlanta University

Ejinkonye Anekwe. **Determination of manganese uptake from soil by microbial mats.** Presented at the fiftieth Joint Annual meeting of Beta Kappa Chi Scientific Honor Society, National Institute of Science, Brookhaven Semester Program, Mar. 31–Apr. 4, 1993, Baltimore, MD.

Neysa Foy. **Comparison of Tilapia (*Oreochromis niloticus*) growth feeding on a cyanobacterial mat plus detrital deposits versus a commercial feed.** Presented at the World Aquaculture Society Conference, May 21–25, 1992, Orlando, FL.

Olafemi Gibson. **The analysis of LIDAR measurements at the High Altitude Observatory.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Gina L. McKinney. **Toxicity testing of sediments from a port and from port-derived dredge soil using the amphipod, *Neohaustorius schmitzi*.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC; and (2) National Minority Research Symposium, Dec. 14–18, 1994, Hilton Head, SC.

Crystal Moffett. **Isolation of extracellular polysaccharide flocculents from cyanobacteria mats.** Presented at the (1) first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC; and (2) 1993 National Congress for the Advancement of Minorities in the Environmental Professions, February 1993, Washington, DC.

Tamika R. Speed. **Evaluation of putative regulators on programmed cell death in premeiotic spermatocysts.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Paul Thomas. **Infrared spectroscopy of drub/DNA complexes.** Presented at the (1) first National Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC; (2) Forum on Undergraduate Research Experiences of Minority Science, Mathematics, and Engineering Students and Workshop on Graduate School Opportunities, October 1992, Atlanta, GA; (3) 1992 MARC/MBRS Symposium, Oct. 22–24, 1992, Dorado, PR; and (4) fiftieth Joint Annual Meeting of Beta Kappa Chi Scientific Honor Society, National Institute of Science, Brookhaven Semester Program, Mar. 31–Apr. 4, 1993, Baltimore, MD.

Florida A. & M. University

Samuel Awoniyi, C. Zang, B. Wang, and Kevin Brison. **A combinatorial procedure for selecting production processes satisfying given tolerance conditions.** Presented at the fifteenth International Symposium on Mathematical Programming, Aug. 15–19, 1994, University of Michigan, Ann Arbor, MI.

Kevin Brison. **Numerical experimentation with a greedy algorithm for allocating manufacturing tolerance.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Michael Davie. **Performance of high strength concrete bridge girders.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Stephanie Fearson. **Sample preparation and microstructure in superconductors for magnets.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Oudane Foster. **Characterization experiments with ceramic slips.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Thomas Montgomery. **Convective/diffusive transport with non-linear chemical reactions in multilayer composite domains.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Edwin Navarro. **Micro-characterization and residual stress measurement of composite materials.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

*S.G. Sauer, B.R. Locke, and P. Acre. **Effects of axial and orthogonal applied electric fields on solute transport in poiseuille flows: an averaging approach.** *Industry of Engineering and Chemical Research* 34, 3, 886–894.

Robert Wider. **Use of integral-spectral methods in solving catalytic wall packed-bed reactor models.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Fordham University

I. Azcona. **Carbonic anhydrase activity in the oyster, *Crassostrea virginica*.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

M. Botton, T. Gonzalez, and M. Tezen. **Effects of copper and zinc on embryos and larvae of the horseshoe crab, *Limulus polyphemus*.** Presented at the Atlantic Estuarine Research Society Meeting, March 1994, Atlantic City, NJ.

M.L. Botton, K. Johnson, T. Gonzalez, and L. Helleby. **Acute toxicity of copper and zinc to embryos and larvae of the horseshoe crab, *Limulus polyphemus*.** Presented at the Marine Benthic Ecology Meeting, Institute of Marine and Coastal Sciences, Rutgers University, March 1995, New Brunswick, NJ.

T. Gonzalez. **Copper and zinc in embryos and larvae of the horseshoe crab, *Limulus polyphemus*.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

M.G. Hamilton, I. Azcona, and J. Wall. **STEM mass measurements of the high molecular weight carbonic anhydrase in the hemocyanin of oysters.** Presented at the Gordon Conference on Respiratory Proteins, August 1994, Salem, NH.

E. Serrano. **Seasonal variation in metal content of *Asellus aquaticus*.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Fort Lewis College/Colorado State University

Vale Adakai and Henry Dodge. **Development of a power order system for NAPI.** Presented at the second NSF National Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Ryan Briggs. **American Indian science and engineering program at Fort Lewis College.** Presented at the SUN (Spanish Ute Navajo) Conference, Spring 1995, Cortez, CO.

Omnia El-Hakim. **Educational model for Native Americans.** Presented at the thirty-sixth Mountain Plain Conference, Fort Lewis College, October 1994, Durango, CO.

Omnia El-Hakim. **Education, research, and training model for Native Americans.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Omnia El-Hakim. **Summer engineering outreach program for Native Americans.** Presented at the twenty-first Annual Water Resources Planning and Management Division Conference, May 1994, Denver, CO.

Melinda Fowler, Aaron Benally, Ryan Briggs, Don May, and Omnia El-Hakim. **Development of a geographical information system for farm management.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Melinda Fowler, John Blueeyes, and Omnia El-Hakim. **Minority engineering and science program model for Native Americans.** Presented at the Value Added Agriculture Conference, Spring 1995, San Juan College, Farmington, NM.

Melinda Fowler, Don May, and Omnia El-Hakim. **Development of geographical information system for the management of groundwater resources.** Presented at the twenty-first annual Water Resources Planning and Management Division Conference, May 1994, Denver, CO.

Dulce Garcia and Ferdinando Mata. **Management of large scale irrigation systems using a geographical information system approach.** Master's thesis, Summer 1994, University of Southern Colorado, Pueblo, CO.

Saul Jimenez, Filfred Tahy, Evans Adams, Sherell Byrd, and Hailin Zhang. **Nitrate movement beneath a northwestern New Mexico multiple crop farm.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Jovita Naize, Hailin Zhang, Doreen Mays, and Philip Shuler. **The fate of atrazine in the environment.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Tulley Nakai, Vale Adakai, Rick Huskie, Evans Adams, and Omnia El-Hakim. **Development of neutron probe interface software.** Presented at NAPI (Navajo Agricultural Products Industry) headquarters for the Minority and Engineering and Science Program, Summer 1994, Farmington, NM.

*Tulley Nakai, Omnia El-Hakim, Don May, and Timothy Gates. **Education, research, and training model for minority students in irrigated agriculture.** *Proceedings of the American Society of Civil Engineers*, Summer 1993.

Jan Tompko, Saul Jimenez, Erikson Barry, Delorio Chapeo, Aaron Benally, Vernon Willie, and Carol Begay. Six presentations on irrigated agriculture. Presented at the 1993 American Indian Student Research Opportunities Conference, Bozeman, MT.

Vernon Willie, Ferdinand Notah, and Rich Podlesnik. **The potential for production of cucumbers at NAPI.** Presented at AISES (American Indian Science and Engineering Society), February 1994, Fort Lewis College, Durango, CO.

Grambling State University

M.A. Akundi, C. Harris, L. Williams, G. Lampkin, C. Reed, and A.N. Murty. **Magnetic character studies of Cu/Co/Cr catalysts: Effect of method of preparation.** Presented at the U.S. DOE Second-Annual HBCU/Private Sector/Fossil Energy Research and Development Technology Transfer Symposium, Apr. 18–22, 1994, Birmingham, AL.

Deborah Clark and P. R. Sharma. **Nucleate pool boiling heat transfer correlations for cryogenic liquids at atmospheric pressure.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

T. Evans, Y. Johnson, and H.C. Chen. **Oxidation of lignite for coal pelletization.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting. Feb. 4, 1994, Lake Charles, LA.

T. Ford, T. Seacrest, and P.R. Sharma. **Bubble emission frequency determination for nucleate pool boiling of liquids at subatmospheric pressures.** Presented at the sixty-ninth Louisiana Academy of Sciences Conference, Feb. 2–3, 1995, Ruston, LA.

Vinson Freddie and Y.B. Reddy. **Software reusability using object oriented programming.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

D. Harrison, W. Turner, and Y.B. Reddy. **Preparing specifications for software reusable components.** Presented at the sixty-ninth Louisiana Academy of Sciences Conference, Feb. 2–3, 1995, Ruston, LA.

G. Lampkin, C. Reed, A.N. Murty, M.A. Akundi, C. Harris, and L. Williams. **Magnetic character studies of Cu/Co/Cr catalysts: Effect of method of preparation.** Presented at the HBCU Workshop on the Physics of Materials and Material Science, Oct. 13–15, 1994, Washington, DC.

T. Lewis, C. Puckett, and S.V. Naidu. **Positron lifetime measurements on Fe, Zn coated Fe, and He diffused Fe.** Presented at sixty-ninth Louisiana Academy of Sciences Conference, Feb. 2–3, 1995, Ruston, LA.

Tanya M. Lewis and S.V. Naidu. **Positron lifetime, resistivity, magnetization studies of indium and germanium doped antimony.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Corey Mack, J. Cobb, B. Waters, and J. Terrel. **Resistivity and magnetization studies of $\text{ErBa}_2\text{Cu}_3\text{O}$ and $\text{GdBa}_2\text{Cu}_3\text{O}$ HtSC.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

*A.N. Murty, U. Donatto, J.W. Washington, T. Hoard, M.A. Akundi, and C. Harris. **Magneto chemical characteristics of higher alcohol synthesis Cu-Co-Cr catalysts.** *IEEE Transactions on Magnetics* 30, 4722, 1994.

A.N. Murty, U. Donatto, J.W. Washington, T. Hoard, M.A. Akundi, and C. Harris. **Magneto chemical characteristics of higher alcohol synthesis Cu-Co-Cr catalysts.** Presented at the sixth Joint MMM Intermag Conference, June 20–24, 1994, Albuquerque, NM.

A.N. Murty, C. Reed, G. Lampkin, J. White, and M. White. **XRD and magnetic character investigation of syngas conversion catalysts.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

Lashawn Prudhomme, Seetala V. Naidu, and Roderick Seals. **Resistivity and magnetization studies of antimony doped with indium and germanium.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

Tracie Reed and B.C.N. Rao. **Changes in the thermal and energetic plasma distributions in the plasmasphere during geomagnetic storm periods.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

Yolanda Rhone and F. Ohene. **Polymers as rheology modifiers of coal water slurries.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

Stephanie Sezer, J. Bennet, and H.C. Chen. **The stability of Colorado shale oil.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

F. Vinson, S. Rugege, and Y.B. Reddy. **Extracting reusable software components.** Presented at the sixty-ninth Louisiana Academy of Sciences Conference, Feb. 2-3, 1995, Ruston, LA.

J. White, M. White, G. Lampkin, and A.N. Murty. **Investigation of magnetic properties of syngas conversion Cu-Co-Cr catalyst composites.** Presented at the sixty-ninth Louisiana Academy of Sciences Conference, Feb. 2-3, 1995, Ruston, LA.

Anthony Willis and F. Ohene. **Viscosity of solutions of cetyltrimethylammonium bromide (CATB) in KBr/H₂O system.** Presented at the sixty-eighth Louisiana Academy of Sciences meeting, Feb. 4, 1994, Lake Charles, LA.

Hampton University

Andrea Booth and Isai T. Urasa. **Use of chitosan as solid phase extraction material for lead.** Presented at the March Research Meeting, Spring 1994, Hampton University, Hampton, VA.

Warren Quinton Foster and Barbara Abraham. **The effects of mating disruption on spiders in apple orchards.** Presented at the Entomological Society meeting, Spring 1994, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Gloria Hill and Barbara Shipes. **The effects of copper and zinc on germination and growth.** Presented at the third annual Mid-Atlantic HBCU Science Research Day, Spring 1995, University of Maryland, Eastern Shore, Princess Anne, MD.

Gloria Hill and Barbara Shipes. **Effects of heavy metals on plant germination and growth.** Presented at the March Research meeting, Spring 1994, Hampton University, Hampton, VA.

Donald Hurts and Doyle Temple. **Czocharski process: Crystal growth method.** Presented at the Physics Research Group meeting, Spring 1995, Hampton University, Hampton, VA.

Kimani Kimbrough, Isai T. Urasa, and John G. Dillard. **Surface characterization of plasma-sprayed coatings on aluminum and titanium.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28-30, 1993, Washington, DC.

Henri K. Parson and Willie L. Darby. **Synthesis and characterization of transition metal C60 complexes.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28-30, 1993, Washington, DC.

Sonya Snedecor and William Marable. **Determining the nature of linear systems.** Presented at the Mathematics Research Group meeting, Spring 1995, Department of Mathematics, Hampton University, Hampton, VA.

Michelle Walker, Godson Nowkogu, and John G. Dillard. **Surface characterization of plasma-sprayed adhesives and durability studies.** Presented at the Summer Research Symposium, National Science and Technology Center, Summer 1995, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Kandace Watson, Vanere Goodwin, and Fred Hamilton. **Time course evaluation of go alfa protein subunits in postnatal heart.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Harvey Mudd College

R.C. Haskell, L.O. Svaasand, S.J. Madsen, F.E. Rojas, T.C. Feng, and B.J. Trombert. **Phase velocity limit of high-frequency photon density waves.** Presented at the International Symposium on Biomedical Optics, Feb. 4–10, 1995.

*R.C. Haskell, L.O. Svaasand, S.J. Madsen, F.E. Rojas, T.C. Feng, and B.J. Trombert. **Phase velocity limit of high-frequency photon density waves.** *Proceedings of the SPIE* 2389, 1995.

Fernando Rojas. **Electrochemical treatment: A new method of cancer therapy.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Fabio Enrique Rojas. **A portable, high-bandwidth frequency-domain photon migration instrument for tissue diagnostics.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Howard University

*Gordon M. MacAlphine, Stephen S. Lawrence, Beth A. Brown, Alan Uomoto, Bruce Woodgate, Larry Brown, Ronald J. Oliverson, James D. Lowenthal, and Charles Liu. **Extraordinary line-emitting knots in the Crab nebula.** *The Astrophysical Journal* 432, L131–134, 1994.

*Chukwuma P. Nwaonicha, Pete D. Nicely, Anthony Woods, Gary Hamilton, and Folahan Ayorinde. **Synthesis of 11-aminoundecanoic acid from 12-oxododecanoic acid oxime.** *Journal of the American Oil Chemical Society* (1995) [submitted].

*Chukwuma P. Nwaonicha, Kent Bryant, Erick Y. Nana, Melissa A. Anderson, Mahmoud Hassan, and Folahan Ayorinde. **Synthesis of 12-aminododecanoic acid from vernolic acid.** *Journal of the American Oil Chemical Society* (1995) [submitted].

Lyndia D. Sims, Ivan O. Edafiogho, Jacqueline Moore, and Kenneth Scott. **Synthesis and anticonvulsant evaluation of enamines by use of the Craig Plot.** Presented at the fifteenth Annual Undergraduate Research Seminar, Oct. 18, 1993. West Virginia University.

Iowa State University

Stephanie M. Lyke. **Experimental study of pressures in the recirculation regions of a mock arterial bifurcation.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Stephanie M. Lyke, Becky B. Brittle, Alison B. Flatau, and Raymond Kudej. **Pressure measurements in the recirculation regions of a mock arterial bifurcation.** Presented at ASME International Mechanical Engineering Congress and Exposition, Advances in Bioengineering 1994, BED-Vol.28, Nov. 6–11, 1994, Chicago, IL.

Ricardo Menendez. **Graphically interactive geometric modeling software package.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) AIAA Region V Student Conference, Apr. 20–21, 1995, St. Louis, MO.

Jackson State University

Cherita Coppedge. **Mathematical games.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Ako Emanuel. **Chaos in a dripping faucet.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Preston Heard. **An evaluation of in-situ precipitation data analysis methods.** Presented at the (1) National Center for Atmospheric Research, Summer 1994, (2) Meteorology 209 class, Fall 1994, Jackson State University; and (3) ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Preston Heard. **The use of oxygen isotopes as hydrogeologic tracers.** Presented at the National Conference on Undergraduate Research 1994, Western Michigan University, Kalamazoo, MI.

Traci Howard and R.S. Reddy. **A study of Mississippi tornado on November 21, 1992, and associated thunderstorm cells.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Alicia Kendrick. **An examination of a three dimensional groundwater model.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Jabari Lee and Wilbur Walters. **Analysis of physical and computational systems with spectral representation formalism.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Mahalia Miller and D. Wolfe. **A method to integrate atmospheric soundings into profiles.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Robin Miller, Mahalia Miller, and R.S. Reddy. **A study of heaviest rainfall over Mississippi during October 1994.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Charlotte Smith. **Computational simulations of fluid dynamics through a porous medium.** Presented at the (1) Army High Performance Computing Research Center, University of Minnesota, Summer 1994; and (2) Meteorology 209 class, Fall 1994, Jackson State University.

Vicky Veals. **Flattened images that are produced by a charged device camera.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Ursula Y. Washington. **Electric field structure of multiple charged wires.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Kesha L. Williams. **Alloy solidification and hardening using the Cahn-Hilliard equation.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Kesha L. Williams. **The distribution of magnetic field lines of sunspots.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Kesha L. Williams. **The distribution of magnetic field lines of sunspots: Unipolar sunspots.** Presented at the Jackson State University Special Projects Office Seminar, Mar. 6, 1995.

*Kesha L. Williams. **The total and effective color indices of 501 galaxies in the cousins photometric system.** *Astronomical Journal*, February 1995.

Marquette University

R. Aguinaga. **Boundary element analysis: A quick examination of elastic design.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

R. Aguinaga. **Boundary element analysis for mechanical design: An investigation of viable alternatives.** Presented at the RCMS Student Conference and Planning Meeting, Sept. 2–5, 1994, Marquette University, Egg Harbor, WI.

C. Chacon. **An examination of part prototyping and processing using various resins in stereolithography.** Presented at the RCMS Student Conference and Planning Meeting, Marquette University, Sept. 2–5, 1994, Egg Harbor, WI.

Bartley R. Christian. **Stereolithography tolerance testing and test standardization.** Presented at the RCMS Student Conference and Planning Meeting, Marquette University, Sept. 2–5, 1994, Egg Harbor, WI.

R. Cordova. **Effect of handle shape and exertion level of musculoskeletal performance.** Presented at the (1) Institute of Industrial Engineers Midwest Regional Conference, April 1995, University of Iowa, Iowa City, IA; and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*R.W. Marklin and R. Cordova. **Ergonomical handtools: Effect of handle shape and exertion level of musculoskeletal performance.** *Ergonomics*, May 1995.

R.W. Marklin and R. Cordova. **Ergonomical handtools: Effect of handle shapes and exertion level of musculoskeletal performance.** Presented at the American Industrial Hygiene Conference, May 22–26, 1995, Kansas City, MO.

D. Rodriguez. **An investigation of dynamic mechanism analysis using finite element analysis.** Presented at the RCMS Student Conference and Planning Meeting, Marquette University, Sept. 2–5, 1994, Egg Harbor, WI.

Morehouse College

Andrew Bennett III. **Derivation of Bode's law for planetary distances from Kepler's laws of planetary motion.** Presented at the Summer Science Symposium, July 1993, Morehouse College, Atlanta, GA.

Andrew Bennett III and Robert Dixon. **Modified Bucher diagrams for representing thermodynamic cycles.** Presented at the F.E. Mapp Symposium, 1994.

William J. Calhoun and Henry C. McBay. **The rearrangement of the alpha styrene epoxidyl free radical.** Presented at the F.E. Mapp Symposium, 1994.

Mark Cheltenham. **The determination of a point mutation on the first and second position of Codon 12 in the Ki-ras gene using the Dunning R-3327 rat dorsal prostate adenocarcinoma system.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Mark Cheltenham and David B. Cooke III. **Determination of point mutations at Codon 12 in the Dunning R-3327 prostatic adenocarcinoma system.** Presented at the F.E. Mapp Symposium, 1994.

Juanez Deloney, Jr. **Measurement of the universal gravitational constant.** Presented at the Summer Science Symposium, July 1993, Morehouse College, Atlanta, GA.

Juanez K. Deloney, Jr., Augustine Smith, and Robert Dixon. **The measurement of the universal gravitational constant.** Presented at the F.E. Mapp Symposium, 1994.

A. Farmer and H. Braithwaite. **The temporal relationship between crack cocaine, addiction, and homelessness amongst African-American males.** Presented at the proceedings of the Southeastern Psychological Association Regional Conference, 1993, Atlanta, GA.

Ali Gordon. **Analysis of experimental dichroism data using Brown's polarization formula.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Ali Gordon, Floyd Keels, and Fuad Muhammad. **Numerical computation of a birefringence matrix.** Presented at the F.E. Mapp Symposium, 1994.

Derrick Hines and Lawrence Blumer. **Small scale population genetics study of *Uca pugnator*.** Presented at the F.E. Mapp Symposium, 1994.

Shawn Lottier and Troy Story. **Fluorescent lifetime analysis with nitrogen-pumped laser and oscilloscope.** Presented at the F.E. Mapp Symposium, 1994.

Bryant Marks. **Physiological responses to racist stressors.** Presented at the Southeastern Psychological Association Conference, 1993, Atlanta, GA.

Bryant Marks and Vernessa R. Clark. **The effect of laboratory stressors on physiological responses.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Bryant Marks and Vernessa R. Clark. **Physiological responses to viewed and imagined stressors.** Presented at the (1) 1994 Southeastern Psychological Association Conference, New Orleans, LA; and (2) F.E. Mapp Symposium, 1994.

*B.T. Marks and V.R. Clark. **The effects of viewed and imagined stressors on physiological responses.** *Proceedings from the Southeastern Psychological Association Conference*, Atlanta, GA, 1993.

Michael Penn. **Characterization of the Spinocerebellar Ataxia 1 gene in affected Siberian families.** Presented at the National Institutes of Health Poster Day, Summer 1993, Bethesda, MD.

Michael Penn and Joseph McCray. **Production and characterization of anti-peptide antibodies to human rhinovirus.** Presented at the F.E. Mapp Symposium, 1994.

Thomas Shaw and Henry C. McBay. **Study of the free radical chemistry of 1-phenyl-1, 4 epoxycyclohexane.** Presented at the (1) F.E. Mapp Symposium, 1994; and (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Alduan Tartt and Duane Jackson. **Sexual competition and mate selection in milkweed bugs.** Presented at the (1) National Conference on Undergraduate Research, Kalamazoo, 1994, and the (2) F.E. Mapp Symposium, 1994.

Harry Taylor and Joseph McCray. **Study of a schistosome neutralizing epitope using anti-peptide antibodies and synthetic peptides.** Presented at the (1) F.E. Mapp Symposium, 1994; and (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Frederick Toomer and David B. Cooke III. **The effect of differentiating agents on MatLyLu cellular viability, biometry, and mobility.** Presented at the F.E. Mapp Symposium, 1994.

Kareem Weaver. **Maze learning discrimination and memory in Death's Head cockroaches (*Blaberus craniifer*).** Presented at the National Conference on Undergraduate Research, April 1993, Salt Lake City, UT.

Navajo Community College

Justin Benally. **Solving for voltages in system of equations.** Presented at the American Indian Science and Engineering Society, Fall 1994.

Shannon Beyale. **Characterization of UV-resistance-stages in yeast *Saccharomyces cerevisiae***. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Kathy Lowe. **Optimized adventive shoot regeneration of cotyledon explant from *Capsicum annuum***. Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) American Indian Science and Engineering Society, Fall 1994.

Lusandra Mike. **Comparison pungency related transcripts-chili**. Presented at the American Indian Science and Engineering Society, Fall 1994.

Eric Murphy. **Reuse of EDTA in soil remediation**. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Will Silversmith. **Clusia-CAM, transition**. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce. Oct. 28–30, 1993, Washington, DC.

Alberta Yazzie. **Chemistry/evaporation of paper mill waste water**. Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Ryan Yellowman. ***Trichonomas vaginalis***. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Northern Arizona University

Darryl Martinez. **Influence of vegetation structure on selection of foraging habitat by northern goshawks in a ponderosa pine forest**. Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Vern Nozie. **The effects of slash size on moisture content and ips infestation in ponderosa pine**. Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Andrew Quam. **The effects of mistletoe infestation on the growth of juniper**. Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Carl Seweyestewa. **Temperature effects on germination and initial growth of New Mexico locust**. Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Oklahoma State University

NOTE: This list does not include presentations given at Oklahoma State University, unless there was no corresponding presentation at a recognized scientific conference. All students present locally as part of the project.

*W. Allen, D. Bromwell, T. Doyle, L. Devlin, R. Snider, P. Watson, and G. Dixon. **Thermal transport in silicate glasses II: Extended phonons**. *Physics Review B* 49, 265, 1994.

Whitney P. Allen, Jr., and G. Dixon. **A pulse method for studying the thermal diffusivity of glasses**. Presented at the sixth National Conference on Undergraduate Research, March 1992, University of Minnesota, Minneapolis, MN.

Whitney P. Allen, Jr., and G. Dixon. **Thermal transport by localized and extended phonons in complex silicate glasses**. Presented at the seventh National Conference on Undergraduate Research, March 1993, University of Utah, Salt Lake City, UT.

Michael F. Boone. **Thermal diffusivities of lead oxide-silica glasses.** Presented at the (1) ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY; and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Michael F. Boone and George Dixon. **Thermal transport in silicate glasses II.** Presented at the eighth National Conference on Undergraduate Research, Apr. 14–16, 1994, Western Michigan University, Kalamazoo, MI.

Michael F. Boone, Lowell Mathews, and Edward T. Knobbe. **Luminescence of rare earth metalorganic complexes in sol-gel materials.** Presented at the seventh National Conference on Undergraduate Research, March 1993, University of Utah, Salt Lake City, UT.

Darren S. Bromwell, Michael D. Furlough, and George Dixon. **Energy transfer in EU3+ -doped glasses.** Presented at the eighth National Conference on Undergraduate Research, Apr. 14–16, 1994, Western Michigan University, Kalamazoo, MI.

Jacob Click. **Assessing the toxicity of wastewater treatment plant sludges using the microtox toxicity assay.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Siegfried C. Coleman. **The effects of annealing temperature on light induced fading of the TL signal from α -Al₂O₃:C.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Siegfried C. Coleman and Stephen W.S. McKeever. **The effect of gamma radiation on thermoluminescence in quartz.** Presented at the eighth National Conference on Undergraduate Research, Apr. 14–16, 1994, Western Michigan University, Kalamazoo, MI.

Siegfried C. Coleman and Stephen W.S. McKeever. **The effects of annealing temperature on light induced fading of the TL signal from α -Al₂O₃:C.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*G. Dixon, D. Bromwell, P. Watson, and J. Wicksted. **Optical probes of phonon-localization in glass.** *Journal of Luminescence* 60 and 61, 430, 1994.

*G. Dixon, T. Doyle, P.A. Watson, W.P. Allen, B.D. Gault, S. Shi, P. Dixon, R. Snider, and E. Knobbe. **Thermal transport by localized and extended phonons in glass.** *Chemika Chronika* 23, 245, 1994.

*G. Dixon, B. Gault, S. Shi, P. Watson, and J. Wicksted. **Thermal transport in silicate glasses I: localized phonons.** *Physics Review B* 49, 257, 1994.

LaShondria B. Dixon. **Low temperature thermal diffusivity of Ormosil glass.** Presented at Oklahoma State University, August 1993, Stillwater, OK.

LaShondria B. Dixon. **A metropolis Monte Carlo method for simulating three-dimensional off-lattice ballistic deposition with limited surface diffusion.** Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

LaShondria B. Dixon and H.L. Scott. **Metropolis Monte Carlo methods for stimulating three-dimensional off-lattice ballistic deposition with limited surface diffusion.** Presented at the National Society of Black Physicists, September 1994, Newark, NJ.

LaShondria B. Dixon and H.L. Scott. **A Monte Carlo study of simulated three-dimensional off-lattice ballistic deposition with limited surface diffusion.** Presented at the seventh National Conference on Undergraduate Research, March 1993, University of Utah, Salt Lake City, UT.

LaShondria B. Dixon and H.L. Scott. **Numerical methods in diffusion limited aggregation.** Presented at the sixth National Conference on Undergraduate Research, March 1992, University of Minnesota, Minneapolis, MN.

Arnold Estrada, James Murray, and Roger Reeves. **Second harmonic generation in KTP**. Presented at the seventh National Conference on Undergraduate Research, March 1993, University of Utah, Salt Lake City, UT.

Joy E. Ferris. **A study of the etch-channel concentration in quartz as a function of electrodiffusion time**. Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

*Joy E. Ferris, D.W. Hart, and J.J. Martin. **A study of the time-dependence of electrodiffusion in quartz**. *Proceedings of the 1993 IEEE International Frequency Control Symposium* 371 (1993).

*Joy E. Ferris and J.J. Martin. **High-temperature acoustic loss of AT-cut quartz crystals**. *Proceedings of the 1994 IEEE International Frequency Control Symposium* 115 (1994).

Michael D. Furlough. **Energy transfer in Eu³⁺-doped silicate glasses**. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Angella M. Johnson and Roger J. Reeves. **Laser-induced gratings in a Tm³⁺:Cr³⁺+GGG crystal**. Presented at the eighth National Conference on Undergraduate Research, Apr. 14–16, 1994, Western Michigan University, Kalamazoo, MI.

*J. McKeever, F.D. Walker, and S.W.S. McKeever. **Properties of the thermoluminescence emission from LiF (Mg, Cu, P)**. *Nuclear Tracks and Radiation Measurements* 21, 179, 1993.

Robert Morris and Donna Kay Bandy. **Laser amplifiers with fast relaxation time of the polarization**. Presented at the sixth National Conference on Undergraduate Research, March 1992, Minneapolis, MN.

Shawnita L. Sterett. **Design and analysis of ultra-lightweight structural concrete mixes**. Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Jami A. Striegel. **Determination of EC50 values with the microtox toxicity analyzer**. Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Felicia D. Walker. **Dependence of the thermoluminescence properties of LiF: Mg, Cu, P on impurity concentration**. Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Felicia D. Walker and S.W.S. McKeever. **Thermoluminescence properties of LiF: Mg, Cu, P—Dependence on impurity concentration**. Presented at the tenth International Conference on Solid State Dosimetry, July 13–17, 1992, Washington, DC.

*S.Y. Wang, C.E. Hasty, P.A. Watson, J.P. Wicksted, R.D. Stith, and W.F. March. **Analysis of metabolites in aqueous solutions using laser Raman scattering**. *Applied Optics* 32, 925 (1993).

Patricia A. Watson. **Determination of the vibrational density of states (VDOS) from several alkali modified silicate glasses using laser Raman spectroscopy**. Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Patricia A. Watson. **Normal and resonant Raman scattering from Eu³⁺-doped alkali silicate glasses**. Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Patricia A. Watson, C.E. Hasty, and J.P. Wicksted. **Raman spectroscopy study of LiCAF and LiSAF crystals**. Presented at the annual meeting of the Oklahoma Academy of Sciences, November 1991, Durant, OK.

Patricia A. Watson, Z. Pan, and J.P. Wicksted. **Raman spectroscopy study of LiCaAlF₆ crystal**. Presented at the meeting of the American Physical Society, Jan. 21–24, 1991, San Antonio, TX.

Patricia A. Watson and J.P. Wicksted. **Raman spectra of Eu³⁺ doped alkali silicate glasses**. Presented at the seventh National Conference on Undergraduate Research, March 1993, University of Utah, Salt Lake City, UT.

Patricia A. Watson, J.P. Wicksted, and G.S. Dixon. **Preliminary Raman analysis of the nature of the silica tetrahedral bond in the presence of alkali-earth modifying cations.** Presented at the eighth National Conference on Undergraduate Research, Apr. 14–16, 1994, Western Michigan University, Kalamazoo, MI.

Pennsylvania State University

Carl Gray. **Platinum (II) mediated oxidation of remote C–H bonds in functionalized organic molecules.** Presented to the Center for Minority Graduate Opportunities and Faculty Development, Committee on Institutional Cooperation Center for Undergraduate Research Opportunities, Aug. 3, 1995, The Pennsylvania State University, University Park, PA.

Glorimar Sepulveda. **Structural analysis of the nave of Ste. Madeleine of Vezelay.** Presented to the Center for Minority Graduate Opportunities and Faculty Development, Committee on Institutional Cooperation Center for Undergraduate Research Opportunities, Aug. 3, 1995, The Pennsylvania State University, University Park, PA.

Polytechnic University

Lyndon Charles and H. Karan. **Amperometric glucose sensors based on poly(quinone)s as electron relay systems.** Presented at the Northeast Regional Research Conference at Hunter College, February 1995.

Lyndon Charles, H. Karan, T. Kaku, and Y. Okamoto. **Amperometric glucose sensors based on poly(quinone)s.** Presented at the forty-third Annual Research Symposium, New York Chemistry Student's Association, New York Section, American Chemical Society, May 6, 1995, Barnard College.

*Lyndon Charles, Wilfred Holness, T. Kaku, H. Karan, and Y. Okamoto. **The effect of structures of poly(quinone)s systems for amperometric glucose sensors.** *Polymer* 36, 2813–2818, 1995.

Charles Harewood. **Modification of hydrophilic polymers.** Presented at the National Association of Black Engineers (NBE) Undergraduate Student Technological Research Competition, April 1995, Detroit, MI.

Lisa Griffith. **Some factors affecting polymer conformation: Transesterification.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*Koi Morris. **Synthesis of new types of polyethers that may have complexing abilities comparable to crown ethers.** Bachelor's thesis, June 1994.

South Carolina State University

Ivy Badger and Nirmalendu Datta-Gupta. **Metal complexes of tetraphenyl porphyrin.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Kievers Cunningham and Nirmalendu Datta-Gupta. **Synthesis and characterization of iron (+3) porphyrins.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Marcellina Fugate. **The molecular cloning of recombinant DNA.** Presented at The State University of New York, Stony Brook, June 13–Aug. 7, 1993.

Afusat Nesbitt, Valerie Lott, and David Scott. **Analysis of reduced male mating speed due to the yellow mutation in *Drosophila melanogaster*.** Presented at the National Institute of General Medical Sciences, National Institutes of Health, Nov. 3–6, 1993, Atlanta, GA.

Matesa Simmons and Inderjit Singh. **Regulation of peroxisomal cytochrome P450 2E1 gene expression.** Presented at the (1) Medical University of South Carolina, Summer 1994, Charleston, SC, and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Michelle Stevens and Nirmalendu Datta-Gupta. **Porphyrins as mercury (+2) sensor.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Antoinette Williams and JoEllyn McMillian. **Galactosamine hepatocyte toxicity: Effect on nitric oxide levels.** Presented at the Medical University of South Carolina, Summer 1994, Charleston, SC.

Southern Illinois University at Edwardsville

R. Bailey, Jr., D.S. Morris, R.L. Hickman, N. Shabestary, and S. Khazaeli. **Application of layered silicate clays in triphase catalysis.** Presented at the third Annual Undergraduate Research Symposium, American Chemical Society, February 1995, Southern Illinois University at Edwardsville, Edwardsville, IL.

R. Bailey, Jr., N. Shabestary, and S. Khazaeli. **Nucleophilic displacement reactions in triphase catalytic systems using swelling clays.** Presented at the Undergraduate Academy of Science Meeting, April 1995, Southern Illinois University at Edwardsville, Edwardsville, IL.

R. Bailey, Jr., R.L. Willis, N. Shabestary, and S. Khazaeli. **Phase transfer catalysis of nucleophilic displacement reactions.** Presented at the eighty-seventh Annual Meeting, Illinois Academy of Science, October 1994, Knox College, Galesburg, IL.

Proteon Boutte. **Increasing the expression levels of recombinant cerato-ulmin.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) NSF Scholars Group, April 1995, Department of Chemistry, Southern Illinois University at Edwardsville, Edwardsville, IL.

Leslee Davis. **Exploratory studies for fireblight control in apples.** Presented at the NSF Scholars Group, April 1993, Southern Illinois University at Edwardsville, Edwardsville, IL.

Leslee Davis. **Peroxidase-mediated oxidation of phloridzin-A model for apple antibacterial defense.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

R.L. Hickman, J.E. Robinson, D.S. Morris, N. Shabestary, and S. Khazaeli. **Nucleophilic displacement reactions in triphase catalytic systems.** Presented at the eighty-seventh Annual Meeting, Illinois State Academy of Science, October 1994, Knox College, Galesburg, IL.

Carma Hodge. **Non-aqueous route to $[B_{11}H_{13}]^2$.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Derrick Kidd. **An approach to fireblight control.** Presented to the NSF Scholars Group, Department of Chemistry, Southern Illinois University at Edwardsville, Edwardsville, IL.

Derrick Kidd. **Phloretin analogs as potential fireblight control agents.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

J.E. Robinson. **Guanine nucleotide regulatory subunit expression in various membrane preparations.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) Meharry Medical College, August 1994, Nashville, TN.

Sandra Thorpe. ***Erwinia amylovora* extra-cellular polysaccharide (EPS) derivatized microbeads as probes for apple lectin activity.** Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Shawn Turner. **Effects of soil moisture and nutrient status on germination and growth of *Boltonia decurrens*.** Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Aundrea Warren. **Recombinant plasmid detection by lac gene activity.** Presented at the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Southern University and A. & M. College

NOTE: Local technical presentations, an average of 15 to 20 per year, are not included in this list.

Melvin Briscoe III. **Based radiochromic dosimeter.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Melvin Briscoe III. **Fiber optic-based radiochromic dosimeter with gamma-ray and electron beam radiation.** Presented at the NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC.

LaShondria Dixon. **Metropolis Monte Carlo method of simulating three-dimensional off-lattice ballistic deposition with limited surface diffusion.** Presented at the seventeenth annual meeting of the National Society of Black Physicists, Apr. 20–23, 1994, Newark, NJ.

LaShondria Dixon. **Visualization of the physics inside the electron beam ion trap.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

LaKindra Francis. **Structural and compositional analysis of WSix films using XRD, TEM, and RBS.** Presented at the seventeenth annual meeting of the National Society of Black Physicists, Apr. 20–23, 1994, Newark, NJ.

*LaKindra Francis. **Structural and compositional analysis of WSix films using XRD, TEM, and RBS.** *Proceedings, National Society of Black Physicists, Newark, NJ, April 1994.*

Kaiana Franklin. **Frustration in triangular lattices: Kagome and Delafossite compounds.** Presented at the NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC.

*Carl Grant, LaKindra Francis, Pui-Man Lam, and D. Bagayoko. **Ward identities for surface-growth models with diffusion.** *Physical Review E* 50, 2488, October 1994.

Bonique C. Pillot. **Creating centromeric probes using polymeric chain reaction (PCR).** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Bonique C. Pillot. **Producing centromeric probes using polymeric chain reaction (PCR).** Presented at the NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC.

Ebonique D. Pillot. **A numerical experiment with the coded aperture mask of a gamma ray imaging spectrometer (GRIS).** Presented at the (1) NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC; and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

*Donald Prier. **Design of acoustic delay line for the advanced light source at Lawrence Berkeley Laboratory.** Extended abstract in volume II of Proceedings, ASEE Centennial Meeting, Mar. 24–25, 1995, page 946. Gulf-Southwest Section, Baton Rouge, LA.

Donald Prier. **Propagation of pressure waves in a synchrotron radiation beam line.** Presented at the seventeenth annual meeting of the National Society of Black Physicists, Apr. 20–23, 1994, Newark, NJ.

*Wilson Shepard. **Electronic density of states of iron impurities in aluminum.** B.S. honors thesis, 1994.

Robert J. Smith, Jr. **Effects of thermally induced stress on Inp based lasers.** Presented at the NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC.

Watasha Wade. **An analysis of polystyrene film wavelength standard reference material for infrared spectral calibration.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.; and (2) NAFEO twentieth National Conference on Blacks in Higher Education, Mar. 15–19, 1995, Washington, DC.

Troy D. Williams. **OH emission spectroscopy and modeling.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

*Troy D. Williams, R.J. Smith, Carl Grant, Nathan Brener, and D. Bagayoko. **Electronic structure and Fermi surface of MnO_2 .** *Physical Review* 1995 [submitted].

Spelman College

Leona Harris. **Applications of Fourier theory.** Presented to the Spelman Mathematics Department, 1994.

Leona Harris. **Classical Banach spaces and their dual space representation.** Presented to the Spelman Mathematics Department, 1994.

Leona Harris. **Fourier analysis of sound.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Tanya Henneman. **Blood Pb levels of factory workers.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Jill A. Kelly. **The bioremediation of TNT by microbial mats.** Presented to the Department of Chemistry, Clark Atlanta University, Atlanta, GA.

Jill A. Kelly, O. Ortiz, J. Bender, and C. Parker. **Kinetics and degradation of TNT by microbial mat.** Presented at the Department of Energy Conference, April 1995, Atlanta, GA.

*E. Darlene McGhee. **The purification of mushroom tyrosinase.** RCMS senior thesis, Spelman College, May 1994.

E. Darlene McGhee and Gladys S. Bayse. **The purification of mushroom tyrosinase.** Presented at the National Meeting of the Sigma Xi, April 1994, Atlanta, GA.

Ragin Monteith and Lisa B. Hibbard. **Electrolyte effects on the UV-photolysis of B-crystallin.** Presented at the Georgia Academy of Sciences, May 1995, Augusta, GA.

Renee T. Page. **Synthesis of o-bromoindanone.** Presented to the Department of Chemistry, Morehouse College/Clark Atlanta University, Atlanta, GA.

*Renee T. Page. **Synthesis of o-bromoindanone and bromoindane.** RCMS senior thesis, Spelman College, May 1995.

Binta Robinson. **Pyrene probe characterization of the SDS micelle.** Presented to the Department of Chemistry, University of California, Riverside, Riverside, CA.

Melanie C. Saizan and Peter Chen. **The construction and diagnostics of an ultrafast Ti:sapphire laser.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Michelle E. Tarver. **Impact of a mutation in the cyclin-dependent kinase, CDC 28-4.** Presented to the Department of Microbiology, New York University, New York, NY.

*Michelle E. Tarver. **A study of the effects of quenching on fluorescence of ocular lens proteins.** RCMS senior thesis, Spelman College, May 1995.

Michelle E. Tarver and Lisa B. Hibbard. **Effects of uv photolysis on the ocular lens proteins.** Presented at the National Meeting of the Sigma Xi, April 1994, Atlanta GA.

Michelle E. Tarver and Lisa B. Hibbard. **A study of the effects of quenching on fluorescence of ocular lens proteins.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Tia Troutman. **Composites.** Presented at the School of Textile and Fiber Engineering, Georgia Institute of Technology, Atlanta. GA.

*Jenene R. Washington. **Investigation of the effects of uv light and electrolytes on enzymes.** RCMS senior thesis, Spelman College, May 1995.

Jenene R. Washington and Lisa B. Hibbard. **Investigation of the effects of ultraviolet light and electrolytes on enzymes.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Nikki Williams. **Minimal inversions for a tree.** Presented at the National Conference on Undergraduate Research, Apr. 20, 1995, Schenectady, NY.

State University of New York at Old Westbury

Folake Adebayo, Karl Auguste, and Robert M. Hoyte. **Further studies on the synthesis of seven alpha-iodo derivatives of five alpha dihydrotestosterone and 17alpha-methyl-5alpha dihydrotestosterone.** Presented at the 1995 Northeast Regional Research Conference, February 25, 1995, Hunter College, NY.

Tunizia Ahmed, Nathaly Isidore, and Mirta Mulhare. **The chemistry of mating of Mongolian gerbils.** Presented at the 1994 Collegiate Science and Technology Entry Program (CSTEP) Conference, Oct. 28–30, 1994, Lake George, NY.

Ralph Destin, Pierre Maignan, Cassandra Cean, and Mirta Mulhare. **Electrophysiological effects of violence in films.** Presented at the (1) ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY; and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Natalie Dowell, Kenol Oscar, Darline Dieudonne, and Michael K. Leung. **Processing of the oploid heptapeptide, Met-Enkephalin-Arg-Phe, in human serum.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Athena M. Jones and Alireza Ebrahimi. **Visual plan construct language.** Presented at the 1994 Collegiate Science and Technology Entry Program (CSTEP) Conference, Oct. 28–30, 1994, Lake George, NY.

Claudia Maldonado and Maureen Dolan. **Do you overheat easily? I've got a survey for you!!** Presented at the session on Energy and Pollution at the ORSA/TIMS National Meeting, Oct. 23–26, 1994, Detroit, MI.

Claudia Maldonado and Maureen Dolan. **An operational model for thermal discomfort in residential energy systems.** Presented at the ninth National Conference on Undergraduate Research, Apr. 20–22, 1995, Union College, Schenectady, NY.

Mario Mendoza and Robert M. Hoyte. **Synthesis of 17beta-hydroxy-17alpha-(E-2'iodovinyl)-4,9,11-estratrien-3-one. A potential radioligand for androgen and glucocorticoid receptors.** Presented at the 1995 Northeast Regional Research Conference, Feb. 25, 1995, Hunter College, NY.

Brian Moses, Shivpreet Uppal, and Lan Zhao. **Network formalism and algorithm for traffic transportation.** Presented at the 1994 Collegiate Science and Technology Entry Program (CSTEP) Conference, Oct. 28–30, 1994, Lake George, NY.

State University of New York at Stony Brook

Kevin Beckles. **Perfluorocarbon tracer leak detention truck.** Presented at Consolidated Edison Corp., August 1995, New York City, NY.

Dereje Belachew. **Using visual basic graphic interface to control electric load.** Presented at the College of Engineering and Applied Sciences, May 14, 1995. State University of New York, Stony Brook, Stony Brook, NY.

Sharnett Findley. **Infrared spectroscopy and near-infrared spectroscopy.** Presented at CYTEC, Chemical Research Division, August 1994, Stamford, CT.

Carmine Henry. **Electronic money.** Presented at the Department of Technology and Society, Aug. 1, 1995, State University of New York at Stony Brook, Stony Brook, NY.

Carmine Henry. **Writing business home page.** Presented at Long Island Research Institute, July 1995, Nesconset, NY.

Dexter S. McLean. **Database for the ATT network management operating system.** Presented at ATT, Aug. 4, 1995, Middletown, NJ.

Dexter S. McLean. **Pattern recognition and image processing.** Presented to the College of Engineering and Applied Sciences, May 8, 1995, State University of New York at Stony Brook, Stony Brook, NY.

*Anita Ristorucci. **Nano project.** *Journal of Undergraduate Research*, Office of Undergraduate Studies, State University of New York at Stony Brook, Stony Brook, NY, Fall 1995 [submitted].

Toni Sylvester. **Identification of gene structure in sea urchin egg receptor for sperm based on HSP homology.** Presented to the Biochemistry Department, July 25, 1995, State University of New York at Stony Brook, Stony Brook, NY.

Stevens Institute of Technology

Mary Alonso. **Stereocontrol in microwave assisted reactions.** Poster presented at the two hundred and tenth American Chemical Society National Meeting, Aug. 20–24, 1995, Chicago, IL.

Lawrence Chinn. **Substituted beta-lactams from cinnamaldehyde.** Presented at the UPTAM Biomedical Symposium, Aug. 12, 1995, Stevens Institute of Technology, Hoboken, NJ.

Ruby Cruz. **Synthesis of the taxol side chain.** Presented at the fourth NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 21–23, 1995, Washington, DC.

Yoanny Gervacio. **Comparison of analytical methods for determination of aspirin in commercial analgesics.** UPTAM Biomedical Symposium, Aug. 12, 1995, Stevens Institute of Technology, Hoboken, NJ.

Elvia Medina. **Simplified atmospheric pressure conditions for catalytic hydrogenation.** Presented at the fourth NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 21–23, 1995, Washington, DC.

Melissa Rodriguez. **Synthesis of cephamycin analogs.** UPTAM Biomedical Symposium, Aug. 12, 1995, Stevens Institute of Technology, Hoboken, NJ.

Talladega College

Keith Blanks. **A comparison of life-history characteristics in mosquitofish (*Gambusia affinis*) from two different environments.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

TaJuana Martin and Raymond Hiramoto. **Use of immunotherapy in the treatment of the brain T-cell lymphoma.** Presented at the National Minority Research Symposium, Dec. 14–19, 1994, Hilton Head, SC.

Beverly Reynolds. **The designing of electronic forms in WordPerfect in forums.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Lee Seltzer. **Video interface for the ATM switch fabric.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Natarcia Wilson and Allen Clarkston. **Effective lysis for isolation of mitochondria from *Trypanosoma brucei* brucei.** Presented at the National Minority Research Symposium, Dec. 14–19, 1994, Hilton Head, SC.

Texas A&M University

Vincent Aguilar. **Experimental study of non-linear aeroelastic behavior.** Presented at (1) Prairie View A&M University, Jan. 30, 1995; and (2) Texas A&M, May 4, 1994 and Dec. 8, 1994.

James Alexander. **Internal dissipation of energy in structural beams.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Coleman Ammerman. **Program and debug a Motorola 68000 assembler.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Laura Arthur. **Genetic suppressers of mutants in *Myxococcus xanthus*.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Jamita J. Barnett. **Computer–human interaction.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Erica Bell. **Familiarizing with research topic.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Zulema Belyeu. **Neural filters in power systems.** Presented at (1) Texas A&M, May 4, 1994 and Dec. 8, 1994; (2) Prairie View A. & M., Jan. 30, 1995; (3) Oklahoma University, Feb. 24, 1995; (4) Detroit, MI, March 23, 1995; and (5) Austin, TX, April 6, 1995.

Fernando Camarillo. **Settling column for particle transport studies.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Michael W. Cantu. **Effects of seawater on polymeric composites.** Presented at (1) Texas A&M, May 4, 1994 and Dec. 8, 1994; and (2) Austin, TX, April 6, 1995.

Marco Carbajal. **Minority policy preferences.** Presented at Texas A&M, May 5, 1994 and Dec. 8, 1994.

Kenneth Chinchilla. **Virtual reality.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

William Citizen. **American poverty.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Meridith Y. Felix. **Modeling and detection of cracks in rotors.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Esmeralda Garcia. **Politics of urban education in Houston, TX.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Melissa A. Garcia. **Neuro epithelial removal.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Patricia Garcia. **Developmental and gender differences in self-esteem in a Hispanic population.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Andres Gonzalez. **Trading blocs and multilateral trade.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Octavio Gonzalez. **Circuit simulation.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

- Christopher J. Govea. **Smart catalysts in homogenous catalysis.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Kellie Gray. **Sex differences in best friendship characteristics among African American adolescents.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Hugo Guerrero. **New generation gas turbine engines.** Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) Texas A&M, Dec. 8, 1994.
- Antonio Guevara. **Transponder technology in CVO/IVHS.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Lisa Hernandez. **Ethnic differences in parenting.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Maria I. Hernandez. **Natural salt spring in the Dove Creek area.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Teresa Y. Hinojosa. **Bay Area Rapid Transit (BART) system study.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Teresa Y. Hinojosa. **Entrance notification system to EE instrument room.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Enos C. Inniss. **Petroleum bioremediation.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Tracy Jones. **Black women in the southern justice system.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Richard D. King. **MRI brain scans.** Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) Texas A&M, Dec. 8, 1994.
- Michael Lacey. **Structural, synthetic and mechanistic investigations of Curac.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Katherine M. Larson. **Helicopters: Flight mechanic.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Keith A. Leroy. **Computer modeling weight/volume distribution of horse hoofs.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Melissa K. Mahoney. **Mechanical testing of TI/SIC composites.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Karin McCullough. **Challenges to black middle class studies.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Juan M. Medrano. **Knowledge acquisition using the vector space model.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Lorena Molina. **Two-dimensional wing model.** Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) Texas A&M, Dec. 8, 1994.
- Mario Morales. **Fiber-optic frequency shifter.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Anna Morena. **Father–daughter incest.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.
- Mark S. Morrell. **Use of the laser light sheet in the study of wave motion.** Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Jennifer S. Payne. **Gametophyte competition in cucurbita**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Nicholas Peffley. **Computer analysis and acoustical theory of violins**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Michael S. Perez. **Ammonia fiber expansion (AFEX) and the study of sugar evolution for the production of ethanol**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Michael S. Perez. **Investigation on several waste stream remediation**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Shannon E. Prevø. **DBase IV: CLEN scholarship database**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Frank Pyrtle. **Cross injecting sprays using a laser diffraction**. Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; (3) Texas A&M, Dec. 8, 1994; and (4) Austin, TX, April 6, 1995.

Samuel Reason. **Standing fatigue**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Phillip Rittmuller. **Study of combustion of charcoal particles using digital imaging technologies**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Phillip Rittmuller. **Vehicular feedback control**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Patricia Rivera. **Finalizing project specifics**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Edwardo Rodriguez. **Automatic generation of a fuzzy model**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Farche Thomas. **Petroleum bioremediation**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Rachel L. Thomas. **Reducing sugar sensor/detector**. Presented at Texas A&M, May 4 1994 and Dec. 8, 1994.

Cassandra Tijerina. **Capillary pressure**. Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) Texas A&M, Dec. 8, 1994.

Patricia Valdez. **Tobacco etch virus**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Raymond Vale. **Economics of education**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Lamonica Whittaker. **Video display terminal ergonomic program**. Presented at (1) Texas A&M, May 4, 1994; (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (3) Texas A&M, Dec. 8, 1994.

Kenneth Woolridge. **Transformation of biomass into useful organic solvents**. Presented at (1) Texas A&M, May 4, 1994 and Dec. 8, 1994; and (2) Austin, TX, April 6, 1995.

Vanessa Wright. **Biomass production**. Presented at Texas A&M, May 4, 1994 and Dec. 8, 1994.

Deborah Yetman. **Root construction**. Presented at Texas A&M, May 6, 1994 and Dec. 8, 1994.

Tuskegee University

James Jackson and Himansu Gajiwala. **Synthesis and characterization of model diimide for polyimide synthesis**. Poster presented at the (1) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 17–20, 1993, Washington, DC; and (2) Sigma Xi Student Research Symposium, Spring 1994, Tuskegee University, Tuskegee, AL.

Calvin P. Monroe and Adriane G. Ludwick. **Graft copolymer from reaction of 2-ethyl-2-oxazoline with polyalkyl α -chloromethylacrylate.** Poster presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 17–20, 1993, Washington, DC.

Calvin P. Monroe and Adriane G. Ludwick. **Hydrolysis of 2-ethyl-2-oxazoline/ethyl α -chloromethylacrylate.** Poster presented at the National American Chemical Society Meeting, March/April 1993, Denver, CO.

*Rahul D. Patil, James Jackson, and Himansu M. Gajiwala. **Synthesis and characterization of polyimides using 3,5-diamino-2,7-dimethylacridine.** *Polymer Preprints* 35(1), 507, 1994.

Rahul D. Patil, James Jackson, and Himansu M. Gajiwala. **Synthesis and characterization of polyimides using 3,5-diamino-2,7-dimethylacridine.** Poster presented at the National American Chemical Society Meeting, March 13–18, 1994, San Diego, CA.

University of California, Davis

Michael Anderson. **Coulomb bounce-off for relativistic nuclear collisions.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Michael G. Anderson. **Coulomb bounce-off for relativistic collisions.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Alejandro G. Duran, J. Jones, and J. Montierth. **Substituted pyridines via polymer-linked substrates.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Marleni Figueroa. **Microearthquakes associated with CO₂ emissions on Mammoth Mountain, California.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Alfonso Garcia. **Burch's problem: Cutting a plane region.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Ramiro Garcia. **A stable isotopic study of fog in San Francisco peninsula.** Presented at the sixth annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Sara L. Isbell. **The effects of dietary GLA-enriched primrose oil on bleomycin-induced inflammation/fibrosis in hamsters.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Sara L. Isbell. **To determine the characteristic of polyunsaturated fatty acids in human platelet phospholipids.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Chad Leidy. **Infrared reflection-absorption spectroscopy of dipalmitoyl phosphatidylcholine (DPPC) and DPPC solid solutions in polyethylene oxide.** Presented at the annual conference of the Society for Advancement of Chicanos and Native Americans in Science, Jan. 5–8, 1995, University of Texas at El Paso, El Paso, TX.

Gregory Olivera. **Potential energy surfaces of the C₂H radical.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Claudia P. Pena. **Computer model of degassing of the Earth's mantle.** Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Edward Picciotto. **FT-ICR mass spectrometry in the study of methyl cyclohexane on Pd (111).** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Edward Picciotto, N. Thornberg, and E. Delgado. **The desorption of methyl cyclohexane on Pd (111)**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Cindy Quezada. **Polynucleotide transfection as a function of cationic lipid structure**. Presented at the Annual Conference of the Society for Advancement of Chicanos and Native Americans in Science, Jan. 5–8, 1995, University of Texas at El Paso, El Paso, TX.

Ramey Rayos. **Quantitative analysis of calcium oxalates through x-ray diffraction**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Gregory Roa. **Solvent induced vibrational changes of dimethylsulfoxide as a dilute solute**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Veronica Saldate. **Conformational energies of glycoprotein residues**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Johari Sloan. **Studies of thiophene formation with laser-induced thermal desorption/FTMS**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

Leo Suh. **The remote teaching assistant project**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

*Lynette Valdry, Vernon R. Morris, Fida Mohammad, and William M. Jackson. **Steric effects on nascent vibrational distributions of the HCN product produced in CN radical reactions with ethane, propane, and chloroform**. *Chemical Physics Letters* 220, 448–454, 1994.

Lynette Valdry, Vernon R. Morris, Fida Mohammad, and William M. Jackson. **Dynamics of energy deposition in the HCN product channel of the CN + CHCl₃ and CH₂Cl₂ reactions**. Presented at the twenty-first national conference of the National Organization of Black Chemists and Chemical Engineers, Apr. 4–9, 1994, Atlantic City, NJ.

Salvador Zepeda and Alan Young. **A Monte-Carlo study of absorbed hydrogen on Ni(111)**. Presented at the sixth Annual Undergraduate Research Conference, Apr. 8, 1995, University of California, Davis, Davis, CA.

University of California, Riverside

Steve Alas, T. Peavy, and E. Carrol. **Gene identification and DNA cloning via *Lepidobatrachus laevis* oviduct processing**. Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

*V.B. Aramaklis, J.H. Ashe, J. Juranek, L.M. Lomeli, A. Taneja, and B.G. Stanley. **Differential action of neuropeptide Y and subtype agonists on single unit activity in the paraventricular hypothalamus**. *Society for Neuroscience Abstracts* 18, 988, 1992.

*L.J. Bridges, S.A. Palmer, M. Morales, Maria T. Hurtado, and D. Tsai. **Agreement between affectively based observational and parent-report measures of temperament at infant-age 6 months**. *Infant Behavior and Development* [in press].

Joel Carbonell, R. Cupp, and R. Parke. **Children's social acceptance: The role of parents' perceptions of the neighborhood**. Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 12, 1993, Riverside, CA.

Stevan Correa, P.T. Tuazon, and J.A. Traugh. **Substrate determination and mechanism of autophosphorylation for protease activated kinase I**. Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

*E.J. Carrol and M. Perchez. **Oviduct histochemistry and site of synthesis of a 29.7 kD jelly coat glycoprotein in the anuran *Lepidobatrachus laevis*.** *Development, Growth, and Differentiation*.

Mercy Cruz, R. Cupp, and R. Parke. **Family-peer relationships: The role of social networks in Latino and Anglo families.** Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 12, 1993, Riverside, CA.

Philip Evans, B. Cooper, and J.A. Dodds. **The measurement and quantification of virus in plants that restrict virus movement.** Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

Philip Evans and J.A. Dodds. **Characterization of citrus tristeza virus in the central valley of California.** Presented to the Department of Plant Pathology, University of California, Riverside, March 1995, Riverside, CA.

Philip Evans and J.A. Dodds. **Soil transmission of satellite tobacco mosaic virus.** Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

*M. Gauvain and Maria T. Hurtado. **The development of skill at planning in advance of action.** *Developmental Psychology* [in press].

Maria T. Hurtado. **Acculturation, cognitive development, and academic aspiration among Latino youth.** Presented at (1) the Department of Psychology, University of California, Riverside, May 1994, Riverside, CA; (2) California State University, February 1995, San Bernardino, CA; and (3) the University of California, Riverside, May 1995, Riverside, CA.

Maria T. Hurtado. **Infant temperament and its relationship to gender and birth order.** Poster presented at the annual meeting of the UCLA conference, May 1992, Los Angeles, CA.

Maria T. Hurtado. **Relations among observed and parent report measures of infant temperament.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Maria T. Hurtado and L. Bridges. **Infant temperament and its relationship to gender and birth order.** Presented at the 1991 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 14, 1991, Riverside, CA.

Maria T. Hurtado and M. Gauvain. **What do children do when they have nothing to do? A study of children's planning in everyday life.** Poster presented at the (1) biennial meeting of the Society for Research in Child Development, Mar. 25–28, 1993, New Orleans, LA; and (2) Department of Psychology, University of California, Riverside, Spring 1993, Riverside, CA.

Maria T. Hurtado, M. Morales, and E. Torres. **Children's tolerance for frustration as a function of day care experience.** Poster presented at the (1) 1992 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 12, 1992, Riverside, CA; and (2) biennial meeting of the Society for Research in Child Development, Mar. 25–28, 1993, New Orleans, LA.

Maria T. Hurtado, M. Morales, D. Tsai, and S.A. Palmer. **Relations among observed and parent report measures of infant temperament at infant-age 6 months.** Poster presented at the eighth International Conference of Infant Studies, May 6–10, 1992, Miami Beach, FL.

Maria T. Hurtado, J. de la Ossa, and M. Gauvain. **Social influences on the development of children's skill at reading plans.** Poster presented at the biennial meeting of the Society for Research in Child Development, March 1995, Indianapolis, IN.

Patrick F. Joyce and E. Bray. **Investigation of drought-stress-induced genes of tomato.** Presented at the (1) 1992 Research Careers for Minority Scholars summer internship program at the University of California, Riverside, Aug. 12, 1992, Riverside, CA; (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Launa M. Lomeli, V.B. Aramakis, and J.H. Ashe. **Complex action of neuropeptide Y in hypothalamus role of neuropeptide Y receptor subtypes in modifying neuronal discharge rate.** Presented at the 1993 Research Careers for Minority Scholars summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

Launa M. Lomeli and J.H. Ashe. **Investigation of extracellular field potentials in auditory neocortex.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

J. Norbeck, K. Weckwerth, and R. Sloan. **Remote sensing of vehicle emissions in the Sequoia and Yosemite National Parks.** College of Engineering and Center for Environmental Research and Technology, University of California, Riverside, Riverside, CA.

Michele Perchez and R. Ruibal. **Histochemistry of the oviduct in the frog, *Lepidobatrachus laevis*.** Presented at the (1) 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

Michele Perchez and R. Ruibal. **Kin selection in the frog, *Lepidobatrachus laevis*.** Presented at the (1) 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA; and (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

*K.A. Platt, W.W. Thomson, and B. Rangel. **Ultrastructural aspects of the cytoplasmic origin and accumulation of oil bodies in olive (*Olea europaea L.*) fruit.** Manuscript [in press].

Benjamin Rangel and R.G. Shaw. **Maternal effects on morphology of *Nemophila menziesii* in two competitive regimes.** Presented at the 1992 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1992, Riverside, CA.

Benjamin Rangel and R.G. Shaw. **Ultrastructural study of olive (*Olea europaea*) fruit.** Presented at the (1) 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA; and (2) second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Eric L. Reese and R.A. Cardullo. **Role of calcium in acrosomal exocytosis.** Presented at the 1994 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1994, Riverside, CA.

Michael Robles, L. Hawell III, and C.V. Byus. **Cloning of transporter protein(s) involved in the export of putrescine from reuber H35 rat hepatoma cells.** Presented at the 1994 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1994, Riverside, CA.

Benjamin Sandoval and R.A. Cardullo. **Developing an assay to monitor the acrosome reaction.** Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

Gregory M. Sena and S. Wells. **An investigation of surface creep processes and desert pavement formation in the northern piedmont of the Providence Mountains, east Mojave Desert, CA.** Presented at the 1993 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1993, Riverside, CA.

August L. Smith III and R. Seto. **The accept end of phi particle and heavy ion collision.** Presented to the Physics Department, University of California, Riverside, September 1992, Riverside, CA.

August L. Smith III and R. Seto. **The facts of humidity and temperature on robacell.** Presented to the Physics Department, University of California, Riverside, May 1992, Riverside, CA.

August L. Smith III and R. Seto. **Optimization of event detection in phi-particle decay.** Presented at (1) the 1992 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1992, Riverside, CA; and (2) the first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

August L. Smith III and R. Seto. **The response of silicon detectors to subatomic particles.** Presented to the Physics Department, University of California, Riverside, August 1993, Riverside, CA.

August L. Smith III and R. Seto. **The study of silicon detectors and their response to minimum ionizing particles.** Presented at (1) the 1993 Research Careers for Minority Scholars (RCMS) summer internship program, University of California, Riverside, Aug. 11, 1993, Riverside, CA; and (2) the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Alexander O. Walker III and R.A. Cardullo. **The role of intracellular pH and viscosity in fertilized mouse eggs as it is measured by BCECF-AM.** Presented at the (1) 1994 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1994, Riverside, CA; and (2) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Karl Weckworth, J. Norbeck, and W. Carter. **Global sensitivity analysis of atmospheric models.** Presented at the (1) 1992 Research Careers for Minority Scholars (RCMS) summer internship program at the University of California, Riverside, Aug. 11, 1992, Riverside, CA; and (2) first NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

*T. Younglove and K. Weckwerth. **Using remote sensing and multivariate discriminate analysis.** Proposal submitted to the Bureau of Automotive Repair, January 1995.

University of Maryland Baltimore County

Jerome Adams. **Muscle regulation via MyoD and Myogenin.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Training Program, Student Research Forum, August 1993, Baltimore, MD.

Andrew Atiemo. **The positive electrocardiogram as a predictor of male coronary events.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1993, Baltimore, MD.

*Julian Berrain, M.G. Snyder, L. Distefano, and J. Berrain. **GMI ganglioside treatment partially reverses the nigrostriatal dopamine effect in the Weaver mutant mouse.** *Brain Research* 636, 353–356.

Stephanie Boykin. **The effects of lipopolysaccharides compared to live bacteria on hemodynamic variables in rats.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Training Program, Student Research Forum, August 1993, Baltimore, MD.

Ron Brathwaite. **Single L-type calcium channel conductance reduced by amiodarone in rat ventricular cells.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Training Program, Student Research Forum, August 1993, Baltimore, MD.

Takisha Cannon. **Hydroxylamine mutagenesis of the OPII gene.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

*K.D. Cole and S.L. Cousin, Jr. **Use of size exclusion chromatography for profiling soybean proteins and isoflavones.** *Journal of Agriculture and Food Chemistry* 42, 2713–2720.

Sydney Cousin, Jr. **Use of size exclusion chromatography for profiling soybean proteins and isoflavones.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*Sydney Cousin, Jr., and Kenneth D. Cole. **Size exclusion chromatography of soybean proteins and isoflavones.** *Journal of Agriculture and Food Chemistry* 42, 2713–2722.

Tanika Day. **Assessing the National Science Foundation's achievements in science and mathematical education reforms.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Tanika Day. **Project Discover: The impact of being a Meyerhoff scholar and a peer.** Presented at the National Black Graduate Student Conference, May 1995, Gainesville, FL.

*N. Grier, W.A. Massey, T. McKoy, and W. Whitt. **The time-dependent Erlang loss model with retrials,** 1994 [journal article submitted for publication].

Nefertiti Harmon. **Hypertension as a risk factor for gout.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1993, Baltimore, MD.

Michael Haywood. **Computer simulation of plasma processing: Implementation of computer-aided design in scientific visualization techniques.** Presented at the Michigan State University, Developing Research Expertise at Michigan State (DREAMS) and the General Electric Summer Research Program, Presentation Day, August 1994, East Lansing, MI.

Angela Hodge. **VLSI chaos generation hysteresis and the neural type cell.** Presented at the World Congress on Neural Networks, July 1995, Washington, DC.

Lekelia Jenkins. **Larval development and metamorphosis of a select strain of the oyster—*Crassostrea virginica*.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1994, Baltimore, MD.

F. Jensen, Crystal Watkins, *et al.* **The putative essential nutrient pyroquinoline quinone is neuroprotective in a rodent model of hypoxic/ischemic brain injury.** Journal article acknowledgment, 1994 [in press].

Sheryl Jones. **The deformability of salicylate treated erythrocytes.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1994, Baltimore, MD.

Sheryl Jones. **Video analysis of tracheal intubations.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1993, Baltimore, MD.

Tyrone McKoy. **The time-dependent Erlang loss model with retrials.** Presented at the Conference on Telecommunications, March 1995, Boca Raton, FL.

Oletha Minto. **Classified information.** Presented at DuPont-Merck Pharmaceutical, Student Research Day, August 1993, Wilmington, DE.

Sandra Moore. **Purifying an enzyme from *Pyrococcus suriosus* responsible for the digestion of hydrolyzed mustard gas.** Presented at the Johns Hopkins University, Summer Research Program for Minority Students, Student Research Day, August 1993, Baltimore, MD.

Chiana Paschall. **Determining the 3-D structure of the human immunodeficiency virus type 1 matrix protein.** Presented at the National Black Graduate Student Conference, May 1995, Gainesville, FL.

*Chiana Paschall, Michael A. Massiah, Mary R. Starich, Michael F. Summers, Allyson M. Christensen, and Wesley I. Sundquist. **Three dimensional structure of the human immunodeficiency virus type 1 matrix.** *Journal of Molecular Biology* 244, 198–233.

*R. Schwalbe, D. Allmond, R. Jufer, and M. Fullem. **Heterogeneity of vancomycin-resistant enterococci of the non-VANA phenotype.** Abstract published in proceedings of the ninety-third General Meeting of the American Society for Microbiology, June 1993, Atlanta, GA.

*R. Schwalbe, S. Qaiyumi, T. Harrison, Y. Smith, Z. Li, and R. Johnson. **Heterogeneity of vancomycin-resistant enterococci in an endemic setting.** Abstract published in the proceedings of the annual meeting of the American Society for Microbiology, June 1995, Washington, DC.

Jattu Senesie. **The Fc receptor as a means of transport of immunoglobulin G.** Presented at the Brandeis University, Howard Hughes Summer Fellowship Program, Mini-Symposium, August 1995, Waltham, MA.

W.N. Sharpe, H. Zeng, B. Yuan, and S. Wallace. **A technique for microsample testing of weldments.** The fourth National Conference on Fracture, November 1994, Johannesburg, South Africa.

Stephanie Slaughter. **Vortex flow filtration for down stream water processing.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Melanie Smith. **Serial single photon emission computed tomography analysis after head injury.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*J.S. Snyder, M.G. Smith, L. Distefano, and J. Berrian. **GMI ganglioside treatment partially reverses the nigrostriatal dopamine effect in the Weaver mutant mouse.** *Brain Research* 636, 353–356.

Kimani Stancil. **The study of stochastic motion of a charge particle in an electromagnetic field.** Presented at the Massachusetts Institute of Technology, Minority Summer Research Program, Student Research Day, August 1993, Boston, MA.

Jamokay Taylor. **Determining the pre- and postsynaptic effects of lead on rat hippocampal neurons in culture.** Presented at the University of Maryland at Baltimore School of Medicine, Minority Short-Term Research Program, Student Research Forum, August 1994, Baltimore, MD.

Joseph Towles. **The frictional properties of the human finger pad.** Presented at the Massachusetts Institute of Technology, Minority Summer Research Program, Student Research Day, August 1994, Boston, MA.

Joseph Towles. **Survey of finite element, finite volume, and three-dimensional time dependent graphics software packages.** Presented at the University of Maryland at Baltimore County College of Engineering faculty members, June 1993, Baltimore, MD.

*P. Verma, J.G. Morris, J. Hebdeb, Y. Smith, O. Osiyemi, M. Fullem, and R. Schwalbe. **Epidemiologic characterization of vancomycin-resistant enterococci recovered from a university hospital.** Abstract published in the proceedings of the annual meeting of the American Society for Microbiology, June 1994, Las Vegas, NV.

Kia Williams. **Assessing the National Science Foundation's achievements in science and mathematical education reforms.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

Gary Young. **Developing simulation environments.** Presented at the University of Maryland Baltimore County to Apple Computer, Inc., Management, September 1994, Baltimore, MD.

Gary Young. **A direct manipulation interface for a circuit simulation.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Gary Young. **Diversity in the workplace.** Presented at Apple Computer, Inc., February 1995, Cupertino, CA.

University of Maryland Eastern Shore

Alyssa Beckwith. **What is the carbon source of the holothurian *Parastichopus californicus*?** Presented at the (1) third NSF National Diversity Conference, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) East Coast Benthic Ecology Meeting, Mar. 17–19, 1995, Rutgers University, New Brunswick, NJ.

Walton Cephas. **A survey of the fish fauna of the Chesapeake Bay National Estuarine Research Reserves in Virginia.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) Atlantic Estuarine Society Meeting, Mar. 23–25, 1995, Chesapeake Biological Laboratory, Solomons Island, MD.

Erik Davenport. **Differential length to weight relationships of the pumpkinseed fish, *Lepomis gibosus*.** Presented at the Atlantic Estuarine Society Meeting, Mar. 23–25, 1995, Chesapeake Biological Laboratory, Solomons Island, MD.

Erik Davenport. **The effects of temperature on the fertilization of *Strongylocentrotus droebachiensis*.** Presented at the (1) third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) East Coast Benthic Ecology Meeting, Mar. 17–19, 1995, Rutgers University, New Brunswick, NJ.

University of Puerto Rico

Nilangely Arzon. **Laminar boundary layer profile in external flows.** Presented at the fifth biannual PR-RCMS Meeting, April 1994, Guanica, PR.

Hugo Badillo. **Implementation and study of texture analysis method called texture spectrum under Khoros environment.** Presented at the sixth biannual PR-RCMS Meeting, November 1994, Ponce, PR.

Edgar Cruz. **Implementation and evaluation of different hurricane wind models.** Presented at the fifth biannual PR-RCMS Meeting, April 1994, Guanica, PR.

Ruben Delgado. **American Chemical Society student chapters: A broad spectrum of possibilities.** Presented at the two hundred and ninth American Chemical Society National Meeting, Anaheim, California, April 1994.

Ruben Delgado. **American Chemical Society student chapters as promoters of chemistry awareness and agents to attract students to the field.** Presented at the two hundred and seventh National American Chemical Society Meeting, March 1994, San Diego, CA.

Ruben Delgado. **The laser photochemistry of thionylimide.** Presented at the (1) fifth biannual PR-RCMS Meeting, April 1994, Guanica, PR; (2) two hundred and ninth American Chemical Society National Meeting, April 1994, Anaheim, CA; (3) forty-sixth American Chemical Society Southeast Regional Meeting, October 1994, Birmingham, AL; (4) eighteenth American Chemical Society Senior Technical Meeting, November 1994, Aguadilla, PR; (5) sixth biannual PR-RCMS Meeting, November 1994, Ponce, PR; (6) thirtieth American Chemical Society Junior Technical Meeting, Pontifical Catholic University, March 1995, Ponce, PR; and (7) fiftieth Ohio State University International Symposium on Molecular Spectroscopy, June 1995, Columbus, OH.

Ruben Delgado. **Reaction dynamics of O (1D) + CH₄.** Presented at the twenty-ninth American Chemical Society Junior Technical Meeting, March 1994, Mayaguez, PR.

Enectali Figueroa. **Analysis of fatigue damage on aluminum lithium alloys using Raman spectroscopy.** Presented at the sixth biannual PR-RCMS Meeting, November 1994, Ponce, PR.

Jose Garcia. **Design and construction of a high vacuum metals deposition systems.** Presented at the fifth biannual PR-RCMS Meeting, April 1994, Guanica, PR.

Nyleen Iglesias. **Isolation and characterization of *Halobacterium halobium*.** Presented at the sixth biannual PR-RCMS Meeting, November 1994, Ponce, PR.

Nyleen Iglesias. **Isolation of hemoglobin from *Lucina pectinata***. Presented at the twenty-ninth American Chemical Society Junior Technical Meeting, March 1995, Mayaguez, PR.

Yernan Marrero. **The organo-metallic approach to the synthesis of a methoxy unsaturated fatty acid derivatives**. Presented at the thirtieth American Chemical Society Junior Technical Meeting, Pontifical Catholic University, March 1995, Ponce, PR.

Sylvia Perez. **Hydrogen embrittlement of aluminum-lithium alloys**. Presented at the sixth biannual PR-RCMS Meeting, November 1994, Ponce PR.

Yanira Rivera. **Statistical thermodynamics of phase transitions in adsorbed clusters**. Presented at the thirtieth American Chemical Society Junior Technical Meeting, Pontifical Catholic University, March 1995, Ponce, PR.

Gisela Rodriguez. **Triisopropylsilanol: A new phase transfer catalyst for dehydrohalogenation**. Presented at the (1) twenty-ninth American Chemical Society Junior Technical Meeting, March 1994, Mayaguez, PR; (2) NSF Conference on Diversity in the Scientific and Technological Workplace, October 1994, Washington, DC; (3) sixth Biannual PR-RCMS Meeting, November 1994, Ponce, PR; and (4) thirtieth American Chemical Society Junior Technical Meeting, Pontifical Catholic University, March 1995, Ponce, PR.

*Gisela Rodriguez and John Soderquist. **Triisopropylsilanol: A new phase transfer catalyst for dehydrohalogenation**. *NSF Conference Proceedings* [submitted].

Sandra I. Rodriguez. **Analysis of gaseous organic pollutants in the Cata Region of Puerto Rico**. Presented at the twenty-eighth American Chemical Society Junior Technical Meeting, March 1993, Rio Piedras, PR.

Sandra I. Rodriguez. **A study to isolate and identify the chemical substance preventing the complete development of males in *Macrobrachium rosenbergii***. Presented at the (1) fifth biannual PR-RCMS Meeting, April 1994, Guanica, PR; and (2) twenty-ninth American Chemical Society Junior Technical Meeting, March 1995, Ponce, PR.

Juan Romero. **Non quasianalytic vectors and C-semigroups generators**. Presented at the sixth biannual PR-RCMS Meeting, March 30, 1995, Ponce Pontifical Catholic University, Ponce, PR.

Mariano Velazquez. **El efecto de agregacion de las purinas substituidas en la posicion C6 observado a traves de medidas de fluorimetria y espectrofotometria ultravioleta**. Presented at the fifth biannual PR-RCMS Meeting, April 16, 1994, Copamarina Beach Resort, Guanica, PR.

Mariano Velazquez. **Spectrophotometanalysis to observe the distribution of absorbed dose by a radiochromic dye 92,3,5-riplenyl-2H-tetrazolium chloride in acidic gelatin=meida**. Presented at the (1) NIST Serfing Seminar, August 9, 1994, Gaithersburg, MD; and (2) National Minority Research Symposium, December 15, 1994, Hilton Head Island, SC.

Mariano Velazquez. **Surface enhanced Raman scattering (SERS) spectra of pyridine and azurin on gold electrode**. Presented at the twenty-ninth American Chemical Society Junior Technical Meeting, 14th Interdisciplinary Scientific Meeting of Puerto Rico, March 5, 1994, UPR-Mayaguez, PR.

University of Texas at Austin

Andrea Perez. **A study of alternative media for pollutant removal in highway stormwater runoff**. Presented at the (1) National Conference on Diversity in the Scientific and Technical Workforce, October 1994, Washington, DC; and (2) Society of Hispanic Professional Engineers, February 1995, Denver, CO.

Vladimar Sierra. **Cometary mission design using low-thrust spacecraft**. Presented at the American Institute of Astronautics and Aeronautics, April 1995.

Chadwin Young. **Negative output resistance voltage source for testing microelectronic devices**. Presented at the National Conference on Diversity in the Scientific and Technical Workforce, October 1994, Washington, DC.

University of Texas at El Paso

Veronica Alvarado. **Stimulation of Chile-Langmuir law.** Presented at the (1) third National Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; and (2) University of Texas at El Paso, September 1994.

Mario Cuen. **Phase equilibria of the Zr-Si-O.** Presented at the one hundred and twenty-fourth Minerals, Metals, and Materials Society Annual Meeting and Exhibition, February 1995, Las Vegas, NV.

*Mario Cuen. **Phase relations of a silicide/silica reaction couple at 2273°K.** *Metallurgical and Materials Transactions* [accepted for publication].

Mario Cuen. **Phase relations of a Zr-SiO₂ reaction couple at 1800° C.** Presented at the third National Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC.

*Alex Garcia and David Parker. **Effects of some processing parameters on Zn A; Mn ACTFEL device performance.** *Conference Records of the 1994 International Display Research Conference 1994*, 452–455.

Alex Garcia and David Parker. **Effects of some processing parameters on Zn A; Mn ACTFEL device performance.** Presented at the 1994 International Display Research Conference, Oct. 10–13, 1994, Monterey, CA.

Diana Garcia. **Litho sphere velocity structure of western U.S. from surface waves.** Poster presented in April 1995.

Paulo Jimenez. **A novel technique for measuring interface state energies in A.C. thin film electroluminescent display devices.** Presented at the Engineering and Architectural Symposium, March 21–22, 1994.

*Paulo Jimenez. **A novel technique for measuring interface state energies in A.C. thin film electroluminescent display devices.** [Published].

Michael McKay. **Morphological evolution during Ge/Si “1, 0, 0” heteroepitaxy.** University of Texas at El Paso, April 1995, El Paso, TX.

Mauricio Portillo. **A Monte Carlo simulation of F/H center recombination in electron irradiated alkali halides.** Presented at the third NSF Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 2, 1994, Washington, DC.

Mauricio Portillo. **The role of surface defect traps in alkali halides.** Presented at the thirtieth annual Symposium of the American Vacuum Society, New Mexico Chapter, April 1994, New Mexico.

Annette Veilleux. **Body wave form modeling studies of South-Central Alaskan earthquakes.** Presented at the Seismological Society of America Meeting, March 22–24, 1994.

University of Texas at San Antonio

Robert Alvarez. **Sturmian theory for ordinary linear differential equations.** Presented at (1) the third National Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Washington, DC; (2) the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX; and (3) San Francisco, CA, January 4, 1995.

Daniel Ayala. **Hydraulic analysis.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

April Brown. **Linear functions.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

George Correa. **The classical inequalities.** Presented at the NSF National Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Dina Estrada. **Computer recognition of cell creation in premixed flames.** Presented at the (1) third National Conference on Diversity in the Scientific and Technological Workforce, Sept. 29–Oct. 1, 1994, Omni Shoreham Hotel, Washington, DC; and (2) Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

Willis Hansen. **Perimeter estimation techniques for the two perimeter Weibull distribution.** Presented at the Honors Research Seminar for Fall 1994, Dec. 2, 1994, University of Texas at San Antonio, San Antonio, TX.

Henry Hernandez. **Program visualizations, list structures, and access patterns.** Presented at (1) the Honors Research Seminar for Fall 1994, Dec. 2, 1994, University of Texas at San Antonio, San Antonio, TX; and (2) San Diego, CA, June 1995.

Hector Hinojosa. **Geometric proof on squaring the circle.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, the University of Texas at San Antonio, San Antonio, TX.

Monica Martinez. **Stereographic projection and circle inversions.** Presented at the NSF National Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Gustavo Mata. **The performance analysis of an automatic parallel language.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

Obed Matus. **Sturmian theory for second order linear differential equations.** Presented at the NSF National Conference on Diversity in the Scientific and Technological Workforce. Sept. 24–27, 1992, Washington, DC.

Saul Reyes. **Generating functions.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

Saul Reyes. **A pedagogical note on symmetric difference.** Presented at the NSF National Conference on Diversity in the Scientific and Technological Workforce, Oct. 28–30, 1993, Washington, DC.

Stephen Reyna. **A general solution to inequalities.** Presented at the Honors Research Seminar for Fall 1994, December 2, 1994, University of Texas at San Antonio, San Antonio, TX.

Shauna St. Julien. **Computational analysis of DNA sequences using the intelligenetics suite.** Presented at the NSF National Conference on Diversity in the Scientific and Technological Workforce, Sept. 24–27, 1992, Washington, DC.

Frank Zamarripa. **Wavelets.** Presented at Conway, AR, April 1993.

Wayne State University

Mary Fandino. **Feasibility studies for a photosynthetic artificial lung: Factors affecting the growth rate of *Chlorella pyrenoidosa*.** Presented at a meeting of the American Institute of Chemical Engineering.

*Alan G. Force, Tiffany Staples, Sherif Soliman, and Robert Arking. **A comparative biochemical and stress analysis of genetically selected strains with different longevities.** *Genetics*, 1995 [submitted].

Joan Rodriguez. **Characterization of vanadium oxide and vanadium suboxide films made using atmosphere pressure chemical vapor deposition.** Presented at the NSF Conference on Diversity in the Scientific and Technological Workforce, October 1994, Washington, DC.

Joan Rodriguez. **Chemical vapor deposition of vanadium thin films.** Presented at the American Chemical Society, Detroit Regional Meeting, 1995.

*S. Salley and Mary Fandino. **Development of a photosynthetic artificial lung: Gas exchange between a bioreactor and aqueous medium.** *American Society for Artificial Internal Organs Journal*, July–Sept. 1995 [accepted].

S. Salley and Mary Fandino. **Development of a photosynthetic artificial lung: Gas exchange between a bioreactor and aqueous medium.** Presented at the American Society for Artificial Internal Organs Fall Meeting.

Richard A. Smith, Jr. **The Borexino experiment.** Presented at the NSF Conference on Diversity in the Scientific and Technological Workplace, October 1994, Washington, DC.

*Richard A. Smith, Jr. **The Borexino solar neutrino experiment.** Internal report at Princeton University.

Jack Sutherland. **Rate of acquisition of tolerance to morphine's response-rate decreasing effect in rats.** Poster presented at the University of North Carolina (Chapel Hill), 1994.

*Jack Sutherland. **Tolerance and cross-tolerance in rats trained to discriminate a low dose of fentanyl.** Presented at the (1) Society of Neuroscience (in the Abstracts Volume 20, p. 228, 1994); and (2) Michigan Chapter of the Society for Neuroscience, 1995.

Xavier University of Louisiana

A. Akundi, E. Eschenazi, and D. McLelland. **Thermodynamic properties of molecular species in the upper atmosphere.** Presented at the second Annual National Conference on Diversity in the Scientific and Technological Workforce, Oct. 28-30, 1993, Washington, DC.

M. Akundi, S. Davis, C. Collier, A.N. Murty, and G. Lampkin. **Magneto chemical characteristics of Cu/Co/Cr catalysts.** Presented at the third Annual Historically Black Colleges and Universities/Private Sector/Department of Energy Research and Development Technology Transfer Symposium, April 1995, Atlanta, GA.

E. Eschenazi and N. Ballard. **Electro chemical oscillations and interface dynamics.** Presented at the third Annual National Conference on Diversity in the Scientific and Technological Workforce, September 1994, Washington, DC.

*M. Giguette, R. Butler, W.J. Dean, and A. Lopez. **An implementation of objects and object oriented programming using PROLOG.** *Proceedings of the 9th National Conference on Undergraduate Research*, April 2, 1995.

A. Jameel and S. Batin. **Animation of natural languages.** Presented at the third Annual National Conference on Diversity in the Scientific and Technological Workforce, September 1994, Washington, DC.

Strabzewski and K. Roseborough. **Synthesis of Z-chloro-4-flourobenzoic acid Z-phenylsulfonyl hydrazide.** Presented at the second NSF Conference on Diversity in the Scientific and Technological Workforce, Oct. 28-30, 1993, Washington, DC.

RCMS Student Successes

The following students are among the RCMS graduates who are success stories. They participated in the RCMS program as undergraduates and subsequently enrolled in graduate school.

Last name	First name	RCMS institution	Field	Graduate school
Abarca	Robby	UT at Austin	Engineering	
Acevedo	Jose	CC of CUNY	Computer Science	CUNY
Acosta	Felipe	Univ of Puerto Rico	Engineering	Georgia Tech
Aguilar	Nancy	UC, San Diego		UC, San Diego
Alexis	Franz	UC, San Diego		Texas A&M University
Alexis	Velouse	CC of CUNY	Physics	Georgia Tech
Ali	Saad	San Diego State U	Physics	San Diego State U
Alli	R.	University of Michigan	Biological Sciences	
Alvarez	Adam	Texas A&M University	Biology	UT at Austin
Ameer	Guillermo	UT at Austin	Engineering	
Anderson	M.	Howard University	Chemistry	Howard University
Anderson	S.	Howard University	Mathematics	Howard University
Antomattei	Augie	Univ of Puerto Rico	Chemistry	UPR, Rio Piedras
Archer	Frederick	UC, San Diego	Biology	UC, San Diego
Ard	Jamy	Morehouse College	Medicine	Duke University
Armstrong	Jerry	Hampton University	Engineering	Ohio University
Arrocho	A.	SUNY at Old Westbury	Biology	
Asenio	Maria	Texas A&M University	Engineering	Texas A&M University
Baker	John	MIT	Physics	
Barber	Edward	Florida A. & M. University	Engineering	Florida A. & M. University
Bartley	Christian	Marquette University	Engineering	Marquette University
Baudin	Alix	CC of CUNY	Computer Science	U of Pennsylvania
Beatie	Matthew	San Diego State U	Chemistry	San Diego State U
Bedoy	Christian	Harvey Mudd College	Engineering	UC, Berkeley
Bentley	Walter	Hampton University	Engineering	Ohio University
Benton	Jessica	UC, San Diego		Stanford University
Besharati	J.	SUNY at Old Westbury	Computer Science	
Blackburn	William	Jackson State University	Environmental Sciences	Jackson State University
Booth	Mark	Texas A&M University	Engineering	Texas A&M University
Borgia	Alejandro	Princeton University	Computer Science	UC, Santa Cruz
Borgia	Alejandro	University of Oklahoma	Computer Science	UC, Santa Cruz
Bowman	Keith	Grambling State University	Chemistry	University of Michigan
Brenes	Gunther	MIT	Physics	
Brown	Alexander	Jackson State University	Mathematics	Georgia Tech
Brown	Arnett	Hampton University	Engineering	Georgia Tech
Brown	B.	Howard University	Physics	University of Michigan
Brown	Breanna	Florida A. & M. University	Engineering	Florida A. & M. University
Buckley	Cedric	Jackson State University	Environmental Sciences	Michigan State U
Bustillos	Roman	UT at El Paso	Engineering	UT at El Paso
Buxo	Carlos	Univ of Puerto Rico	Chemistry	University of California
Cabral	Santos	UC, San Diego		Washington State University
Camacho	Frank	University of Guam	Biology	University of Guam

Last name	First name	RCMS institution	Field	Graduate school
Camacho	Leslie	University of Guam	Mathematics	Rensselaer Polytechnic
Camerena	Carlo	UC, San Diego	Biology	Arizona State U
Campos	Claudia	UT at El Paso	Engineering	
Canales	Raquel	Texas A&M University	Biology	University of Texas
Cannon	Takisha	U MD Baltimore County	Environmental Sciences	University of Virginia
Carbonell	Joel	UC, Riverside	Psychology	
Casanas	Vivian	UC, San Diego		UC, San Diego
Castille	Steven	Grambling State University	Chemistry	U of SW Louisiana
Cavanaugh	Deandria	Texas A&M University	Engineering	Texas A&M University
Chamberlin	Elidora	UC, San Diego		Utah State University
Christian	Raquel	Texas A&M University	Physics	University of Texas
Clark	Cheryl	Texas A&M University	Biology	University of Texas
Cole	Derrick	Morehouse College	Chemistry	University of NC
Comagon	Jacob	UC, San Diego	Engineering	UC, Berkeley
Contreras	Ramiro	UC, San Diego	Physics	UC, San Diego
Cooper	Phillip Troy	University of Oklahoma	Engineering	Stanford University
Copeland	Orlando	CC of CUNY	Engineering	Stanford University
Coppedge	Cherita	Jackson State University	Mathematics	Jackson State University
Correa	George	UT at San Antonio	Mathematics	
Cox	Benny	Southern University	Physics	Georgia Tech
Crockett	Robert	MIT	Physics	
Cruz	Mercy	UC, Riverside	Psychology	
Cunningham	Keivers	South Carolina State U	Biology	Medical U of SC
Davie	Mike	Florida A. & M. University	Engineering	Florida A. & M. University
Davis	Dorothy	Jackson State University	Mathematics	University of Minnesota
Davis	Leslee	So Illinois U at Edwardsville	Chemistry	
Davis	Mark	Hampton University	Chemistry	University of Alabama
Del Negro	M.	University of Michigan	Psychology	
Dennis	Scott Matthew	University of Oklahoma	Engineering	Stanford University
Dike	Julie	CC of CUNY	Engineering	Stanford University
Donatto	Ursula	Grambling State University	Physics	Georgia Tech
Dvone	Debbie	Jackson State University	Environmental Sciences	Wright University
Eaton	Samuel	Florida A. & M. University	Chemistry	University of Miami
Encomio	Vincent	UC, San Diego	Biology	San Francisco State U
Enriquez	Kelly	UC, San Diego		Oregon State
Escobedo	Michael	UC, San Diego		UC, San Diego
Estrada	Arnold	Oklahoma State Univ	Physics	UT at San Antonio
Evans	Philip	UC, Riverside	Biology	UC, Riverside
Farmer	Alvin	Morehouse College	Psychology	Pennsylvania State
Figueroa	Harold	Univ of Puerto Rico	Physics	Cornell University
Figueroa	Iddys	Univ of Puerto Rico	Chemistry	UPR, Rio Piedras
Flansburgh	Jill	Harvey Mudd College	Computer Science	Western Washington U
Flood	A.	Howard University	Biology	Howard University
Franklin	Dionne	Southern University	Physics	Kent State University
Frutos	Annabelle	UC, San Diego	Chemistry	UC, San Diego
Fudge	R.	Howard University	Biology	Howard University
Furlough	Michael	UC, San Diego		Oklahoma State
Galindo	Christian	Texas A&M University	Mathematics	Texas A&M University

Last name	First name	RCMS institution	Field	Graduate school
Galvan	Mark	Texas A&M University	Engineering	Texas A&M University
Galver	Luana	UC, San Diego		UC, San Diego
Garcia	Jorge	Marquette University	Engineering	Iowa State University
Garcia-Abarca	Maria	Marquette University	Engineering	UT at Austin
Garza	David	UT at Austin	Engineering	
Garza	Mark	UC, San Diego		University of Alabama
Garza	Robert	Texas A&M University	Biology	Baylor College of Medicine
George	Michael	UC, San Diego		University of Washington
Gillam	Deborah	UC, San Diego		Grambling University
Goff	Crystal	So Illinois U at Edwardsville	Engineering	
Gomez-Leon	Steve	UT at Austin	Engineering	
Gonzales	Andres	Texas A&M University	Physics	UT at Austin
Gonzalez	Alfred	UC, San Diego		Yale University
Gonzalez	Annette	UC, San Diego	Chemistry	UC, San Diego
Gonzalez	Charlene	Univ of Puerto Rico	Engineering	Stanford University
Gonzalez	Michael	UT at El Paso	Geology	University of Florida
Gouner	Lynette	Jackson State University	Environmental Sciences	Food Tech U of IL
Graves	Marilyn	UC, San Diego		UC, San Diego
Gray	R.	Howard University	Chemistry	Howard University
Green	Glenn	CC of CUNY	Engineering	University of Pennsylvania
Greene	K.	Howard University	Biology	University of Maryland
Griffith	L.	Howard University	Biology	Howard Medical School
Griffith	Malaika	Jackson State University	Environmental Sciences	Ohio State University
Grim	Martha	Jackson State University	Environmental Sciences	
Guiteau	Jacquelin	CC of CUNY	Engineering	CUNY
Gurrola	Larry	San Diego State U	Geology	UC, Santa Barbara
Gutierrez	Roberto	Texas A&M University	Mathematics	Texas A&M University
Hall	Christopher	Jackson State University	Environmental Sciences	Jackson State University
Hall	M.	SUNY at OW	Mathematics	SUNY at Stony Brook
Hamler	Ursula	UC, San Diego		Stanford University
Hampton	Chenita	Southern University	Physics	Georgia Tech
Hargrett	Brian	Florida A. & M. University	Chemistry	Florida A. & M. University
Harper	M.	Howard University	Biology	Meharry Medical College
Harris	Andrew	Texas A&M University	Engineering	Texas A&M University
Harris	David	CC of CUNY	Engineering	CUNY
Hart	Antonio	Talladega College	Biology	Georgia State University
Haywood	Michael	U MD Baltimore County	Engineering	University of Michigan
Heath	Mikita	Talladega College	Mathematics	Kent State University
Hedgepath	Chester	U MD Baltimore County		University of Pennsylvania
Hester	Lance	U MD Baltimore County	Engineering	Northwestern University
Hewitt	Calvin	Hampton University	Mathematics	University of Pittsburgh
Hill	Nicole	UC, San Diego		UNC at Raleigh
Hill	Oscar	Florida A. & M. University	Engineering	Florida A. & M. University
Himaya	Amalia	UC, San Diego		University of Guam
Hines	Derrick	Morehouse College	Medical	
Hinojosa	Teresa	Texas A&M University	Engineering	Texas A&M University
Hodge	Carma	So Illinois U at Edwardsville	Chemistry	
Hoelzer	Charles	San Diego State U	Mathematics	San Diego State U

Last name	First name	RCMS institution	Field	Graduate school
Hogans	Noreen	Hampton University	Biology	Emory University
Holbrook	Jarita	San Diego State U	Geology	UC, Santa Cruz
Hollis	Artha	Texas A&M University	Mathematics	Texas A&M University
Holness	Wilfred	Polytechnic University	Chemistry	Mt. Sinai University
Hoye	Atiya	Spelman College	Mathematics	University of Maryland
Hurtado	Carlos	UC, Davis	Mathematics	UC, Davis
Hurtado	Maria	Stevens Inst of Tech	Psychology	UC, Riverside
Hurtado	Maria	UC, Riverside	Psychology	UC, Riverside
Iavarone	Louis	University of Oklahoma	Engineering	University of Iowa
Irizarry	Rafael	Univ of Puerto Rico	Mathematics	UC, Berkeley
Jackson	James	Tuskegee University	Chemistry	University of Tennessee
James	Brian	Texas A&M University	Engineering	Texas A&M University
Jean-Pierre	Aniz	Fordham University	Natural Science	Ithaca College
Jimenez	Daniel	UT at San Antonio	Computer Science	
Jimenez	Juan	Stevens Inst of Tech	Psychobiology	
Jimenez	Juan	UC, Riverside	Psychobiology	
Johnson	Angella	Oklahoma State University	Physics	Temple University
Johnson	Tracy	Hampton University	Chemistry	U MD Baltimore County
Jones	Erika	U MD Baltimore County	Biophysics	University of Virginia
Jones	Marcia	Jackson State University	Environmental Sciences	McNeese State U
Jones	Tracey	Texas A&M University	Psychology	Texas A&M University
Joyce	Patrick	UC, Riverside	Psychology	UC, Riverside
Joyce	Patrick	Stevens Inst of Tech	Biology	UC, Riverside
Kendrick	Alicia	Jackson State University	Mathematics	Jackson State University
Kennedy	Lesa	CC of CUNY	Engineering	CUNY
Kifle	Dawit	CC of CUNY	Engineering	Carnegie-Mellon Univ
King	Richard	Texas A&M University	Engineering	Baylor School of Medicine
Lee	Antonio	Florida A. & M. University	Engineering	Florida A. & M. University
Lee	Calvin	Fort Lewis College	Mathematics	
Leonard	Zonja	Talladega College	Mathematics	U of AL in Birmingham
Lin	Catherine	UC, San Diego		CSU, Los Angeles
Little	B.	University of Michigan	Biology	
Magloire	Vladimir	CC of CUNY	Engineering	Rutgers University
Mahoney	Melissa	Texas A&M University	Engineering	Texas A&M University
Mares	Liborio	Texas A&M University	Engineering	Texas A&M University
Maresca	Michael	Iowa State University	Engineering	Iowa State University
Marks	Bryant	Morehouse College	Psychology	University of Michigan
Marquez	F.	University of Michigan	Mathematics	
Marrero	Pablo	Univ of Puerto Rico	Physics	UPR, Mayaguez
Marroquin	Liza	UC, San Diego		UC, San Diego
Martinez	Juan	UT at El Paso	Geology	UT at El Paso
Martinez	Monica	UT at San Antonio	Mathematics	
Mathews	J.	Howard University	Chemistry	Georgia Tech
Matus	Obed	UT at San Antonio	Mathematics	
McCarley	A.	Howard University	Physics	North Carolina A&T State U
McCullough	Karin	Texas A&M University	Psychology	Texas A&M University
McGhee	E.D.	Spelman College	Chemistry	Meharry Medical College
McMahon	DeAwna	Clark Atlanta University	Chemistry	GA Institute of Technology

Last name	First name	RCMS institution	Field	Graduate school
Mealing	Angelette	Talladega College	Mathematics	Florida A. & M. University
Medrano	Juan	Texas A&M University	Engineering	Texas A&M University
Melendez	Eliz.	Fordham University	Mathematics	Columbia University
Mendias-Canale	Eduardo	UC, San Diego	Engineering	
Merriman	Vanda	MIT	Engineering	
Mesa	Albert	San Diego State U	Physics	San Diego State U
Metting	Priscilla	UT at San Antonio	Mathematics	
Milton	Jeffery	Southern University	Physics	
Minto	Olthea	U MD Baltimore County	Medicine	Johns Hopkins University
Mohamed	F.	Howard University	Biology	University of Maryland
Monroe	Calvin	Tuskegee University	Chemistry	
Montalvo	Rafael	Univ of Puerto Rico	Chemistry	UPR, Mayaguez
Montney	L.	University of Michigan	Biology	
Moore	Gina	UC, San Diego		San Diego State
Morfin	Victor L.	No'Arizona University	Forestry	
Morris	Mia	Jackson State University	Environmental Sciences	Clark Atlanta University
Moses	Simone	Hampton University	Biology	Hampton University
Moutan	Tracy	Jackson State University	Environmental Sciences	McNeese State University
Mouton	Linzett	Grambling State University	Chemistry	Meharry Medical College
Murry	Keasia	Florida A. & M. University	Engineering	Purdue University
Nava	Deborah	Texas A&M University	Engineering	Texas A&M University
Navarro	Edwin	Florida A. & M. University	Engineering	University of Illinois
Nelson	Stacy	Jackson State University	Biology	VA Inst. of Marine Science
Olano	Edward	UC, San Diego	Chemistry	San Diego State U
Ortiz	Lillian V.	Univ of Puerto Rico	Physics	Brown University
OseiBoateng	K.	University of Michigan	Biology	
Osgood	Robert	Jackson State	Environmental Sciences	University of Texas
Otero	Valerie	UC, San Diego		UC, San Diego
Padilla	Ivan	UT at El Paso	Geology	
Padin	Jeffry	Iowa State University	Engineering	Iowa State University
Pagan	Mayra	Univ of Puerto Rico	Chemistry	UPR, Rio Piedras
Panchula	Martin	Iowa State University	Engineering	MIT
Patrick	A.	Howard University	Physics	Howard University
Pearson	Roderick	Jackson State University	Physics	Iowa State University
Penn	Michael	Morehouse College	Biology	UC, San Francisco
Perchez	Michele	UC, Riverside	Biology	UC, Riverside
Perez	Jason	Texas A&M University	Engineering	Texas A&M University
Perry-Lewis	Erica	UC, San Diego	Biology	Johns Hopkins University
Pestano	Gary	CC of CUNY	Biology	CUNY
Piggee	Christina	Texas A&M University	Engineering	University of Boston
Pluiose	Christine	CC of CUNY	Biology	Buffalo Medical School
Pol	Kristen	UC, San Diego		Stanford University
Pope	Kesia	UC, San Diego		Jackson State University
Pope	L.	Howard University	Chemistry	Howard University
Porras	Javier	UC, San Diego	Physics	UC, San Diego
Power	M.	University of Michigan	Biology	
Priestly	Richard	CC of CUNY	Engineering	CUNY
Quinones	Beatriz	Texas A&M University	Biology	UC, Berkeley

RCMS STUDENT SUCCESSES

Last name	First name	RCMS institution	Field	Graduate school
Rabindran	Prasad	Texas A&M University	Engineering	Rice University
Ragland	P.	Howard University	Biology	Georgetown University
Rambeau	K.	Howard University	Engineering	Stanford University
Ramirez	Rebecca O.	UT at El Paso	Engineering	New Mexico State U
Rice	Kimberly	Spelman College	Mathematics	University of South Florida
Richardson	E.	Howard University	Chemistry	Purdue University
Ridley	Ahmed	U MD Baltimore County		University of Maryland
Rivas	Matthew	Iowa State University	Engineering	Iowa State University
Rivero	Andres	Texas A&M University	Engineering	Texas A&M University
Roche	Andy	Univ of Puerto Rico	Physics	Florida State University
Rodriguez	David	Marquette University	Engineering	Marquette University
Rodriguez	L.	SUNY at Old Westbury	Mathematics	
Rogers	Byron	Texas A&M University	Engineering	
Rosas	Ines	Univ of Puerto Rico	Engineering	Stanford University
Salazar	Lydia	Iowa State University	Engineering	Iowa State University
Sanchez	Louis	UT at San Antonio	Computer Science	
Santos	Pablo	UC, San Diego		University of Florida
Sassine	Claude	CC of CUNY	Computer Science	CUNY
Scott	Alexis	Spelman College	Mathematics	University of North Texas
Seals	Lenward	Grambling State University	Physics	Georgia Tech
Seberino	Christian	UC, San Diego	Physics	
See	Roderick W.	University of Oklahoma	Engineering	Southern Methodist Univ
Sengco	Mario	UC, San Diego		MIT
Serna	Oscar	Texas A&M University	Engineering	Texas A&M University
Shandu	Robert	Jackson State University	Mathematics	University of Minnesota
Sheppard	Wilson	Southern University	Physics	Clark Atlanta University
Simms	Victor	Texas A&M University	Biology	Baylor College of Medicine
Smith	Andre	CC of CUNY	Engineering	Stanford University
Smith	August	UC, Riverside	Physics	UC, Riverside
Smith	Brandon	U MD Baltimore County	Engineering	University of Maryland
Solis	Stacey	Texas A&M University	Biology	UT at Galveston
Soto	Lilliam	Univ of Puerto Rico	Geology	University of California
Spears	Michael	University of Oklahoma	Engineering	University of Oklahoma
St.Julien	Shawna	UT at San Antonio	Mathematics	
Stancil	Kimani	U MD Baltimore County	Physics	MIT
Steward	Tasha	Spelman College	Mathematics	Purdue University
Stoneham	Leslie	Texas A&M University	Engineering	Texas A&M University
Strong	Tina	Jackson State University	Mathematics	Mississippi State University
Suarez	Manuel	Iowa State University	Engineering	University of Colorado
Suarez	Mitchell	Iowa State University	Engineering	UC, Berkeley
Sulcer	Jarvis	Southern University	Physics	Cornell University
Summerour	Sonya	UC, San Diego		UC, San Diego
Tafolla	Jose	UC, San Diego		UC, San Francisco
Tarifa	W.	SUNY at Old Westbury	Computer Science	
Taylor	V.	Chicago State University	Physics	
Thompson	Kester	CC of CUNY	Engineering	CUNY
Tobias	Eric	UT at San Antonio	Mathematics	
Torres	Norca	Univ of Puerto Rico	Chemistry	Bethesda, MD

Last name	First name	RCMS institution	Field	Graduate school
Torres	Obed	Univ of Puerto Rico	Engineering	MIT
Trevino	Terrence	Texas A&M University	Engineering	Texas A&M University
Ugarte	Alberto O.	UT at El Paso	Engineering	UT at El Paso
Urbina	Joaquin	UT at El Paso	Engineering	UT at El Paso
Valdez	Sam	UC, San Diego		UT at Austin
Veals	Vicky	Jackson State University	Mathematics	Texas A&M University
Vega	Raquel	UC, San Diego	Biology	UC, San Diego
Vegara	Billy J.	Southern University	Physics	
Velez	Carlos	Univ of Puerto Rico	Engineering	Urbana College
Vicente	Carlos I.	Univ of Puerto Rico	Physics	Iowa State University
Vizcaino	George	UC, San Diego		Texas A&M University
Wagaw	S.	University of Michigan	Chemistry	
Walker	Anthony	UC, Riverside	Biology	
Walker	Lisa	Hampton University	Biology	Emory University
Wallace	Denesia	Southern University	Physics	Louisiana State University
Warren	Aundrea	So Illinois U at Edwardsville	Biology	So Illinois U at Edwardsville
Washington	Jarvis	Grambling University	Physics	Georgia Tech
Washington	Traci	Jackson State University	Mathematics	Mississippi State University
Watson	Sheree Jo	UC, San Diego		University of Oregon
Weaver	Kareem	Morehouse College	Psychology	University of SC
Weckwerth	Karl	Stevens Inst of Tech	Mathematics	UC, Riverside
Weems	Kimberly	Spelman College	Mathematics	University of Maryland
Wellhouse	William	San Diego State U	Mathematics	
Wesley	Victoria	So Arizona University	Forestry	
West	Zelda	Hampton University	Biology	University of Maryland
Whitaker	Angela	Hampton University	Engineering	North Carolina A&T State U
White	Paul	MIT	Physics	
Williams	Keshe	Jackson State University	Mathematics	Mississippi State University
Willie	Vernon	Fort Lewis College/CSU	Mathematics	
Wilson	Daphne M.	Southern University	Physics	Southern University
Wilson	Jerry	UC, San Diego	Biochemistry	
Wilson	Patricia	Hampton University	Engineering	North Carolina A&T State U
Wilson	Ulrica Y.	Spelman College	Mathematics	U of Massachusetts
Winstead	Vincent	Marquette University	Engineering	University of Minnesota
Woldesnbet	Million	Florida A. & M. University	Engineering	Prairie View University
Womack	L.	University of Michigan	Biology	
Woods	Michele	UC, San Diego		Memphis State U
Woolery	Angela	Iowa State University	Engineering	Texas A&M University
Wright	Alesia	Hampton University	Biology	Virginia Polytechnic
Ybarra	Melisa	UT at Austin	Engineering	
Yungai	Ashantai	UC, San Diego		North Carolina A&T State U
Zamarippa	Frank	UT at San Antonio	Mathematics	
Zamora	Richard	UT at El Paso	Engineering	UT at El Paso
Zarate	Eloy	UC, Riverside	Psychology	UC, Riverside
Zavala	Anamarie	UC, San Diego		Johns Hopkins University
Zevallos	Manuel	CC of CUNY	Engineering	CUNY

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