

Before you read the feedback and report revisions, you are strongly encouraged to review the Overview, History and Calendar Web page at

< <http://www.equity.psu.edu/framework/updates> >

Introduction

This document provides an update on the efforts that have been made during the period 1998-2001 and plans for the period 2002-2005 to promote and support diversity in the Eberly College of Science as an essential ingredient in its quest for greater excellence and impact. As the college moves to position itself as an ever more visible international leader in higher education, research, and service, we need to continue and accelerate the process of transforming ourselves into a broadly diverse community. Our efforts recognize the synergies between diversity initiatives and the other missions and goals of the college and of the university. Diversity is integral to our cultures of meritocracy and opportunity in the college. If we truly are to be the college of choice for the very best students, faculty, and staff and if we truly are to be an international leader in science, we need to attract, support, and retain the very best individuals from across all of society.

The strongly international character of science research and education and our welcoming of students and faculty of many different national origins have given the college a significant international population and a significant number of Asian-American faculty members. The challenges for us lie in other directions—increasing the numbers of students and faculty of color, increasing the number of female faculty members, and ensuring a welcoming and supportive environment for all students, faculty and staff, regardless of race, gender, religion, ethnic background, national origin, physical capability, or sexual orientation.

Building a diverse and welcoming community is a bootstrap process like building an academic career or an outstanding college of science. We seek to build on the progress we have made, even where modest, to find the synergies, to build momentum, to be so welcoming that others want to join, and to address the continuing challenges.

Among the challenges are ‘leaks in the pipeline. Students in science, both in the Eberly College of Science and nationally, do not proportionately reflect the diversity of our society. In the physical and mathematical sciences, relatively few women and fewer people of color earn PhDs, so there are few in the pipeline for faculty positions. In the biological sciences, more than half of the undergraduates are female, and 45% of the PhDs are earned by women, yet only 20% of our applications for faculty positions are from women. Happily, there are some signs of improvements in the pipeline. In particular, the numbers of blacks earning PhDs in the physical and life sciences have more than doubled in the last decade. According to the 2000 Survey of Earned Doctorates, blacks now earn 2.7% of the degrees in the physical sciences and 3.6% of the degrees in the life sciences.

We have made some progress in increasing the number of female faculty members—notably, our chemistry department now ranks third in percentage of female faculty members among the nation’s top fifty chemistry departments—but we still have a substantial way to go. We have made some progress in improving the climate for female faculty members in the college, but we need to continue to work at it. We have not made real progress in increasing the number of students and faculty of color.

Our plans for the next several years must include efforts to identify and hire women and people of color, and we need to go beyond routine searching and recruitment. We should contribute to the solution of the pipeline problem by working to increase the numbers of potential faculty members. We also need to continue to work to improve the general climate in the college for individuals from historically under-represented groups. We seek a welcoming and supportive climate for all of our students, faculty and staff.

Major goals for the period 2002-2005 include:

- Continue to increase the number of female faculty in tenured and tenure-track positions.
- Increase the numbers of minority individuals in our student, faculty, and staff ranks across the college.
- Continue to improve the climate in the college for all students, faculty, and staff.
- Improve the climate in the college for minority students and faculty by enhancing locations and points of contact with the students and faculty.
- Improve the discipline in our processes for achieving goals and assessing climate.

These goals are integrated into the college's Strategic Plan for 2002-2005. This plan can be found at <http://www.science.psu.edu/dean/strategicplan.html>.

This report intends to be an honest assessment of where we are, what we are doing and how we can make progress. We look for input and suggestions.

Challenge 1: Developing a Shared and Inclusive Understanding of Diversity

1. How does your College define or describe diversity? How is this understanding demonstrated in areas of emphasis within your College?

Diversity is variety; diversity is built from differences, differences in race, differences in gender, differences in national, ethnic, or religious background, differences in sexual orientation, and differences in physical capability. Our college Climate and Diversity Committee has purposeful representation from as broad a pool of individuals as possible. We include diversity of job class in this as well.

While the college has been very welcoming of international students and faculty, there is significant under-representation of some groups in our community, particularly domestic students, faculty, and staff of color. In the fall of 2000, out of 209 tenure-line faculty, only 4 are Black-American/African-American and 4 are Hispanic. Also, although men and women are about equally represented in our undergraduate population, there is a somewhat smaller fraction of women in the graduate student body, and a substantially smaller fraction among the faculty.

2. How has your College distributed and discussed information to students about the University's diversity initiatives?

Messages about climate issues and diversity are distributed periodically by e-mail to the entire College community and are posted prominently on College web sites. We ensure that there are representatives from both the undergraduate and graduate student bodies on our College Climate and Diversity Committee and involve our student leaders in major initiatives. Our web-based surveys give the members of the college an opportunity to comment on our initiatives.

The college has designed the following plans as a method of disseminating the college's operational definition of diversity and a discussion of the college and university diversity initiatives to faculty, students, and staff:

- To develop and distribute annually to faculty, students, and staff a summary fact sheet of University and college issues relating to diversity, the college's operational definition of diversity, and appropriate University policies and contact offices.
- To make use of the college Climate and Diversity Committee web site as an informational and helpful resource to engage the college community on issues that relate to climate and diversity.
- The college Climate and Diversity Committee will continue to reflect the diversity of the college, include students, faculty, and staff, and include representatives from all of the departments. In addition, each department will have a mechanism for collecting and responding to feedback on issues and concerns relating to climate and diversity.

3. *How has your College distributed and discussed information to faculty and staff about the university's diversity initiatives?*

The Dean includes discussions of diversity and the College priorities of fostering diversity and supporting an environment of respect and opportunity for all in his annual presentations to departmental faculty meetings, in the annual new faculty workshop, and during lunches with the female faculty in the college.

Also, e-mail messages are sent periodically to the College community and our web sites provide information about our initiatives. Our Climate and Diversity Committee solicits input from the community and develops new initiatives and recommendations based on this feedback.

The new annual communication plan described above will include contact with all faculty and staff in the college.

4. *What is the role of the multicultural coordinator?*

The Director of Science Diversity Initiatives, our multicultural coordinator, develops and advocates practical strategies for the inclusion of underrepresented minority groups and women in the academic and administrative units of the Eberly College of Science. Responsibilities include the development of multidisciplinary collaborative programs for the retention and recruitment of undergraduate and graduate students of color and female students; the dissemination of information to share and support best practices; the coordination of diversity projects and initiatives; the expansion of corporate and public networks including private and non-profit organizations who support and fund diversity activities; and assistance with the

placement of students in graduate and professional programs of study. The Director is available for consultation and mentoring of any student and is available to every department to aid in developing and implementing department specific recruitment and retention strategies.

5. *Does your College have a diversity committee? What is its role?*

The College has a Climate and Diversity Committee, made up of faculty, staff and students, whose initial charge in the fall of 1999 was to assist the Dean in developing *A Plan for Climate and Diversity in the Eberly College of Science*. Subsequently, the Committee's charge has been to periodically assess the College climate; to monitor the effectiveness of on-going programs, policies and procedures; to make recommendations to address new and continuing issues; to assist in reporting on Climate and Diversity-related issues; to prepare updated information for the College climate web site; to prepare responses to issues raised by members of the College community; and to develop and implement programs aimed at achieving climate improvements.

Challenge 2: Creating a Welcoming Campus Climate

1. *How does your College and department leadership demonstrate visible support for diversity?*

The Dean is a focal point for leadership on this issue. Methods used to communicate support for diversity include: The Dean includes discussions of diversity and the efforts to foster diversity and create a welcoming and supportive environment for all in the college during college executive committee meetings, in his annual presentations to departmental faculty meetings, in the annual new faculty workshop, and during lunches with the female faculty in the college; the Dean also communicates broadly with the whole community on climate and diversity issues. For example, an e-mail message concerning sexual harassment went to the entire community early this fall, and two other e-mail messages with statements about climate and diversity were sent to college faculty and staff later in the semester.

Through the President's Opportunity Fund, the President and the Provost have provided financial assistance for hiring faculty members from underrepresented groups. The Dean provides financial assistance from college funds for these hires. The combination of University and college support provides substantial encouragement and incentive for the departments.

This year the college initiated a program aimed at bringing role models for students of color and female students through our college. The Dean has offered to pay half the expenses for any prominent scientist of color or prominent female scientist who is brought in to be a colloquium speaker. He is also offering to pay an additional honorarium to these guests if they will give a lecture to one of our large undergraduate classes.

Our departments communicate the value of diversity in a number of ways. Several of our department heads have started department level Climate and Diversity Committees, and more are planned for this coming year. Almost every department states that they explicitly discuss

*Climate and Diversity issues at faculty/staff meetings. In some departments, the department head calls on a Student Advisory Committee to keep him/her abreast of Climate and Diversity issues for the students in the department. Some departments are choosing new textbooks that include reference to the diverse community of scholars in their discipline and are purchasing posters depicting this diverse group of leaders in their field for display in the department. One department has had two annual training opportunities around diversity issues for the faculty in the department. Every department has been **encouraged** to increase the representation of minority faculty members.*

The main structure or organizational entity in the college with responsibility to support diversity is the college Climate and Diversity Committee. The Dean of the college is ultimately accountable for the diversity initiatives and results in the college; the Climate and Diversity Committee reports to the dean. In order to strengthen the systems of accountability in the college the following plans have been formulated:

- Each department will institute a mechanism for collecting and responding to feedback on issues and concerns relating to climate and diversity; the Dean will require semi-annual report backs from the departments to the Climate and Diversity Committee.
- Throughout the college we will specifically identify those responsible for implementing plans and achieving goals, and department heads will have the primary responsibility for achieving these plans and goals within their departments.

2. *How does your College identify climate issues?*

As noted above, the Dean formed a Climate and Diversity Committee in the fall of 1999 to assist him in the development of a diversity plan. This committee consists of representatives from all college units and all constituencies—student, faculty and staff—within the college community. The committee periodically elicits input from the community via e-mail and access to a confidential, interactive web site through which concerns and suggestions can be transmitted. In the spring of 2000 and again in the fall of 2000 the committee did a web-based survey of all members of the college and used that input to select the objectives for the Climate and Diversity Committee for the year.

Our Director of Science Diversity Initiatives is directly and personally involved with the students of color in the college and is constantly collecting information about issues important to our students through these interactions.

We also use a variety of other mechanisms to assess climate in the college. For example, our human resources director regularly visits with the staff of each department to hear concerns and issues. Wherever possible, issues are addressed quickly. We have also held one-on-one interviews with junior faculty and focus group discussions with both junior and senior faculty to collect information on issues of recruitment, retention, and general climate for faculty in the college. The female faculty in the college are invited to lunch-time discussions with the Dean and often use this as an opportunity to raise issues. Also, the female faculty met separately and summarized issues and suggestions for the Dean a year ago which resulted in several actions and

changes aimed at improving the climate in the college for our female faculty. All exiting faculty are asked to participate in an exit interview, and we are initiating an exit interview process for staff members who terminate or transfer out of the college.

An additional vehicle for assessing climate in the college is outlined in our strategic plan:

“Develop a formal assessment tool and administer it with appropriate frequency. Make a statistical assessment of climate and diversity issues in the college and feed these data into the deliberations of the Climate and Diversity Committee.”

3. How does your College respond to climate issues?

Almost every department in the College has its own mechanisms for dealing with climate issues. Some have formal committees and some use the department head’s advisory group as the vehicle for addressing issues. The Human Resources office for the college is also very active in addressing hiring practices, interpersonal issues, and conflicts.

We respond to issues raised as quickly and specifically as possible. The human resources leader was able to immediately address about half of the issues raised during her walkabouts. The Dean was able to address about 80% of the suggestions from the female faculty within a semester. Longer range issues are prioritized and addressed by the Climate and Diversity Committee, the Dean, and the department heads.

As discussed above, the College Climate and Diversity Committee is charged with improving the climate in the college. They look for overarching issues to address. The Climate and Diversity Committee in the college solicited confidential input from the college community via a web-survey tool. As a result of the responses from this survey, the following major activity areas for the committee were chosen; these address issues that surfaced in the data:

- Faculty/staff relations and staff morale
- Junior faculty mentoring and general climate
- Marginalization of female and senior faculty
- Student advising
- Equity and morale issues for Instructors/Lecturers
- Isolation/departmental interactions
- Host showing of the movie “The Color of Fear” for the college during MLK week, 2002
- Student involvement in “The Big Picture”, a college-wide, open-house type event to inform the full college community about the missions of the college.
- Establishing links with the Commission for Women

Reports from the Climate and Diversity Committee are posted on the college web site, and as projects are completed or procedures modified, the changes are incorporated into those reports and implemented as part of regular College business.

Core information about Climate and Diversity issues is a part of the college web site and is regularly updated.

In some cases, those who raised issues are communicated with personally.

In addition, a specific objective in the college's strategic plan for 2002-2005 is:

“Improve the climate for minority students and other students in the college by seeking improvements in all points of contact.

Improving the climate in the Eberly College of Science for all its members is an on-going process. We have shared responsibility for this process across the college. A welcoming and inclusive climate is grounded in respect for others, and this respect must be visible in our day-to-day environment and interactions.

We will initiate a campaign in the college to address all major locations of contact with our students; every place of contact should be welcoming for all students, and we will seek to ensure that minority students in particular feel welcomed. (For example, doors should have windows so that entering an office is less intimidating, staff members should greet all students and faculty immediately, and office displays should be multi-cultural and inclusive.) The college is committed to finding the resources to make the appropriate changes to our facilities, displays, information provided, etc.

- Ensure that every department has a Climate and Diversity Committee and that there is a link between the departmental committee and the college-level Climate and Diversity Committee.
- Charge the departmental Climate and Diversity Committees with developing plans to improve the look and feel of places in the department where we interact with students. Focus on creating a respectful, multi-culturally welcoming environment.
- The dean will provide resources over a three-year period to support the recommendations of the committees.
- We also plan to have training so that each individual who works in these contact areas is clear about their personal role in fostering a welcoming climate for all.”

4. *What college-wide and individualized approaches have you developed to enhance overall climate and individual's satisfaction with the environment?*

As discussed above, the College Climate and Diversity Committee is charged with improving the climate in the college. For the '01-'02 year they are continuing to focus on junior faculty

mentoring and experiences, senior and female faculty marginalization, and faculty/staff relationships, and have added activities on equity and morale issues for Instructors/Lecturers, isolation of some groups of individuals and general inter-departmental interactions, hosting a showing of the movie “The Color of Fear” for the college during MLK week, 2002, arranging student involvement in “The Big Picture”, and establishing links with the Commission for Women.

One climate issue identified in the original University-wide Faculty/Staff Survey and again in the course of deliberations of the college Climate and Diversity Committee is that of Faculty/Staff Relations. The faculty and the staff tend to come from differing educational backgrounds and may have different perspectives on procedures and priorities. These differences can lead to miscommunication and sometimes even to conflict. The college recognizes that positive faculty/staff relations play an important role in productivity and that sound working relationships are an outgrowth of an environment that fosters respect. Therefore, the college supports professional development for staff members to help them understand their role in college missions and to give them tools to communicate effectively. The college also incorporates messages to the faculty, to supervisors and administrators in a variety of communications reminding them to be sensitive to differences in viewpoint with the staff, with each other, and with students, and to remember to acknowledge the contributions of the staff.

Another example concerns working mothers. Several responses to the Climate and Diversity Committee from faculty and staff members a year ago indicated that working mothers found it difficult to handle breast feeding or pumping during work hours because there were few, if any, suitable places within college buildings. In response, the college identified two spaces to be renovated and furnished and made available for these purposes. One of these rooms has been made ready and is in use.

In addressing the issue of the environment for junior faculty, Jim Stewart, University Senior Faculty Mentor, worked with us to conduct a series of confidential, one-on-one interviews with our junior faculty. His report is being used as the basis of developing programs for junior faculty for the future.

Also, the female faculty in the college met and developed a list of suggestions for ways in which the Dean and the college could enhance the environment for women and better support female faculty members. This list and subsequent discussions in a series of lunch meetings have led to a number of actions.

A team of college staff members, acknowledging that a significant percentage of postdoctoral scholars and fellows coming to the college are foreign nationals, developed guidelines intended to assist those inviting postdocs to engage in best recruiting practices and to make the invitees feel welcome and well supported. This document has become a well-used site on the college web pages and has been used as a model by other units of the University.

The Dean meets at least annually with the faculty of each department and delivers, as part of that meeting, a message in support of respect, diversity, and climate issues. In addition, the Dean has an open door policy and any member of the college is free to come discuss any issue with

him. As issues are identified through these discussions, or by feedback to the college Climate and Diversity Committee and other mechanisms, improvements and changes are explored.

Our Associate Dean, multicultural coordinator, and faculty advisors meet with students frequently to address their needs and concerns.

Challenge 3: Recruiting and Retaining a Diverse Student Body

The Eberly College of Science is committed to finding ways to seek out and encourage students from underrepresented groups to be part of our community. The college campaigned for the establishment of a centrally supported Summer Research Opportunities Program, which is now operated out of the graduate school. Currently, we are also the lead college providing administrative support for the Bunton-Waller Fellows program, the Freshmen in Science and Engineering program, the Clustering program, and the Pennypacker Experience program. In addition, numerous collaborations occur with various administrative and academic units here at Penn State and in public school districts throughout the Commonwealth. We view our diversity efforts as a partnership with the University in an ongoing commitment to create a community of scholars that is inclusive of all ethnic cultures in our society.

A specific strategy from the college's strategic plan for 2002-2005 is: "Work to increase the diversity of our students.

To enhance the educational experience of all of our students, the diversity of our students, faculty, and staff should be increased. Greater diversity will help bring greater understanding and respect for others from different backgrounds, and greater diversity will increase the comfort level and retention of minority group individuals. Greater diversity will allow the college to continue to increase its impact on the nation. A recent report by the Business-Higher Education Forum says that the trend of African-Americans and Hispanics earning fewer degrees proportionately could lead to a dearth of skilled workers. Eighty percent of the growth in the traditional college-age population between now and 2015 will be non-white.

Climate in the college is important for retention and graduation rates of all of our students, but particularly for minority students and faculty. Therefore, we've created a separate strategy below that specifically addresses one aspect of the climate in the college for minority individuals.

The programs and targeted activities described here will be continued and/or initiated during the period of this plan.

- We will continue our current programs and activities, under the direction of our Director of Science Diversity Initiatives, aimed at recruiting and retaining minority students.

- Our success in recruitment and retention of minority graduate students varies by department. We will bring our departmental graduate student recruitment leaders together annually in the late spring to share best practices, successes, and failures and to give our Director of Diversity Initiatives a chance to share information, to learn, and to interact with the group. We will ask the Director of Diversity Initiatives to share information from this annual meeting with the College Executive Committee.
- Competitive fellowship packages are essential to success in recruiting minority graduate students. We will seek additional funding to enhance our graduate fellowship offerings for minority students.
- Research has shown that an undergraduate research experience is a key determiner in encouraging students to pursue graduate studies. To increase the number of our minority undergraduates who go on to graduate school, we will look for ways, including additional funding, to enhance the number of undergraduate research opportunities available for our minority students.
- Develop creative means of increasing the number of role models for women and minority individuals in the college. This year the college initiated a program aimed at bringing role models for students of color and female students through our college. Dean Larson has offered to pay half the expenses for any prominent scientist of color or prominent female scientist who is brought in to be a colloquium speaker. He is also offering to pay an additional honorarium to these guests if they will give a lecture to one of our large undergraduate classes. This practice will be continued if success is demonstrated this year, and other ideas will be solicited.
- We will renew and establish relationships with several Historically Black Colleges and Universities (HBCU) and encourage our departments to accept graduate candidates whom the HBCUs feel will be successful in our programs. Other colleges have seen that a record of success for students from the HBCUs encourages even better qualified students from the same institutions to apply in subsequent years, and we are hopeful of similar success.
- We will look for ways to enhance exposure of promising, minority high school students to the outreach programs in the college, such as our summer science camps and teacher institutes, by providing scholarships to defray the costs of attendance and by employing them as lab assistants. We hope to encourage greater minority enrollment in our undergraduate programs in this way.

1. Does your College contribute to locating and recruiting undergraduate students from underrepresented groups? If so, how?

The Eberly College of Science is an active partner with the University when it comes to recruiting and retaining a diverse student body. The Office of Undergraduate Resident Instruction and the Director of Science Diversity Initiatives have responsibility for coordinating

recruiting strategies with the Office of Admissions and various other internal and external constituents of the college. The following description of activities illustrates some of the diversity initiatives in which we play a leadership role.

The Pennsylvania Junior Academy of Science

The Eberly College of Science hosts the annual meeting of the Pennsylvania Junior Academy of Science (PJAS) each spring semester at the University Park Campus. The PJAS is a statewide organization of junior and senior high school students designed to stimulate and promote interest in science among its members through the development of research projects and investigations.

PJAS goals:

- To promote greater participation in science and mathematics activities among the youth of Pennsylvania.
- To improve the quality of achievement in mathematics and science by encouraging students to participate in research and develop original ideas.
- To develop an understanding of the scientific community through close association with leaders in the sciences.
- To seek the improvement of science clubs activities through the cooperative regional and state meetings.
- To inculcate among its members true scientific attitudes and humanistic ideals that shall lead to the greater development of service to man.

The college is responsible for providing judges for approximately 3000 science fair projects, which are presented over the course of the meeting. In addition, the students who expressed an interest in the Eberly College of Science and who received a first-place award during the State Meeting are interviewed, and scholarship offers are made to the most outstanding students, many of whom are members of underrepresented minority groups.

First Year in Science and Engineering (FISE) House

The FISE program is a diversity program, which targets support for minorities and women in the areas of science and engineering. The ALCOA Pennypacker program is a diverse residence hall option at University Park, which houses the FISE program and the Bunton-Waller Fellows program, a scholarship program for under-represented minority students. FISE was created to enhance the recruitment and retention of underrepresented students who are in their first year of a science or engineering curriculum. The Pennypacker program is a supportive living and studying environment that enhances the retention of students, particularly women and minorities. As seen by the composition of the program, it is our belief that diversity is a quality that benefits all students and makes the Pennypacker program a unique experience at Penn State.

Although the ALCOA Pennypacker program is inclusive of all ethnic groups at Penn State in technical majors, the main goal is to enhance undergraduate retention in science, engineering, business, and technology majors with an emphasis on minorities and women. A related goal is to have 50% female participants and 40% of the participants from underrepresented minority groups. In 2000-01, female students actually represented 54% of the participants and 39% of the students were from underrepresented minority groups. The Pennypacker program supported 269 students with 78 students in the fall and 86 students in the spring making the Deans' list, with a grade point average of 3.5 or above.

Business Engineering Science & Technology (BEST)

BEST is a partnership with the Eastman Kodak Company, the Eberly College of Science, the Colleges of Business, Engineering, and Earth and Mineral Science. The purpose of the BEST program is to recruit undergraduate minority students to Pennsylvania State University in technical programs with the goal of preparing them for employment opportunities with Kodak.

BEST is a four-week academic enrichment and career awareness activity for under-represented students of color, currently enrolled in the 11th grade, and interested in careers in business, engineering, or the sciences. The goal of the BEST program is to expose participants to business, engineering, and science education opportunities within the Eastman Kodak Company.

Eligible participants are under-represented groups that are of Native American, African American, and Latino/Hispanic American descent; academically talented (B+ average or better) high school students currently in the 11th grade; reside in Pennsylvania or Rochester, NY; interested in pursuing College study in business, engineering, or the sciences, and; U.S. citizens or permanent residents.

The benefits of BEST are enhanced awareness of career opportunities in the business, engineering, science, and technology fields; association with a Kodak mentor for five years after completion of the BEST program; better understanding of industrial and research and development careers through a tour of the Eastman Kodak Company, Rochester, NY, facility; and knowledge of educational opportunities at Penn State.

Annual Awards Convocation in Cooperation with the School District of Philadelphia

For the past 14 years, the Awards Convocation Program has been supported and administered by the Eberly College of Science, several other academic colleges, and the School District of Philadelphia. The Convocation is a luncheon that honors the top sophomores and juniors in each of the high schools in the District. As a recruiting tool, the convocation has proven to be an excellent way for Penn State to identify early and nurture minority prospects – no other university has such an arrangement, which allows access to the transcripts of the best students in the District. These students are targeted for special scholarships and academic opportunities.

Program Objectives:

The objective of this program is the early identification of potential prospective regular student admits interested in the sciences and inform them of the advantages of attending Penn State. Sophomores and juniors and their parents, high school math and science department chairs, and area alumni participate in this activity.

- To provide students, who do not meet the traditional profile of University Scholars but who have high school grade point averages of 3.5 or higher--while receiving SAT combined scores of approximately 1250--the opportunity to be admitted to the Scholars Program, and the University Park campus, in their first year instead of being passed over in the scholarship aid process.
- To provide enrolled students with a comprehensive program of support services, including tutorial, counseling, enhanced academic advising, and career development support, so that they can maintain the requisite average to retain their financial aid awards.

2. *How has your College contributed to locating and recruiting graduate students from underrepresented groups?*

The college has contributed to locating and recruiting graduate students from underrepresented groups by coordinating its activities with the graduate school, establishing partnerships with Historically Black Colleges and Universities, offering summer research experiences, participating in research conferences and professional meetings for African/Black American, Latino/Hispanic American and American Indian/Alaskan Native students, and providing fellowships and assistantships to cover the cost of an graduate education. In addition, the college participates in the following programs as part of its efforts to recruit minority students.

GEM

The National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (GEM) is a program whose purpose is to provide opportunities for underrepresented ethnic

minority students to obtain Ph.D. degrees in engineering and the natural sciences through a program of paid summer internships and graduate financial assistance.

The goal of this program is to increase the number of minority students pursuing doctoral degrees in the natural, physical and life sciences (chemistry, physics, mathematics, computer science as well as the earth, biological and pharmaceutical sciences). Fellowships are portable to any participating GEM member university, and include a stipend, tuition and fees. The award is renewable through the university for up to four additional years. Fellows may be required to accept a research or teaching assistantship. A paid summer internship is required prior to entering a doctoral program. The Eberly College of Science is an active member of GEM and the College Director of Science Diversity Initiatives is a member of the GEM National Board. In this role he sits on the application screening and review committee, makes available list of prospective GEM fellows to the department and recruits GEM participants and monitors GEM fellows progress towards the degree in College.

The National Physical Science Consortium

The National Physical Science Consortium (NPSC) is a network of research universities, national laboratories, and private industries uniting for the purpose of increasing scholarly and career paths in the physical sciences.

The main goal of NPSC is to target underrepresented minorities: African American; Hispanic; Native American Indian, Eskimo, Aleut; Pacific Islander (Polynesian), and/or female. NPSC will work to increase the total number of qualified minorities and women in these fields. Again the Eberly College of Science is an active member of NPSC. The director of Science Diversity Initiative participates in the recruitment and selection of perspective NPSC Fellows, serves on selection committees and coordinates these activities with the departments to attract these students to the college.

Undergraduate Summer Research Programs

We have found that an effective strategy for recruiting graduate students regardless of ethnic background is to invite promising undergraduates to Penn State to spend the summer between their junior and senior years doing research in our faculty research groups. This program is equally effective for minority students, and several of our departments organize such programs. The immediate benefit of this strategy is that it allows faculty to make early decisions about graduate admissions into the department based on the students' performance in their labs rather than relying solely on traditional indices of performance.

SROP

The Summer Research Opportunities Program (SROP) for Minority Science Students is a collaborative effort of research centers and laboratories at Penn State, which offers research experiences for undergraduate minority scholars in the sciences. Students may elect to participate

in a research program in any of these laboratories or centers, or with any other research faculty in the Sciences in the University. Upon acceptance as a minority research scholar in SROP, the student may participate in SROP during the academic year (fall and/or spring semesters) or during the summer session. SROP also accepts applications for summer research assistantships from students enrolled full-time at participating institutions. The purpose of the SROP Program is to increase the interaction of minority science students with faculty, expose these students to the research environment at a large complex research institution, and encourage these students to pursue graduate study and careers in research and academia.

3. *What strategies have you implemented to retain undergraduate students from underrepresented groups?*

Cluster Classes

The cluster class concept is designed to assist students to succeed in introductory math, physics, and chemistry classes. Classes are offered for the first two courses in calculus and the first course in chemistry. Due to the small size of classes (thirty students or less), students are able to interact more directly with the faculty and receive a greater amount of personal attention. Cluster classes are taught by select university faculty, and students are given personal feedback on their homework assignments concerning improvements in their understanding of concepts and procedure.

Undergraduate Summer Research Programs

The Summer Research Opportunity Program is an effective retention activity for undergraduate students in the science as well as a recruitment tool for prospective graduate students. A description of the SROP program is found under question 2.

Pre-First Year in Engineering & Science (PREF)

PREF is a summer bridge program for first-year students of color in science and engineering at the University Park campus. Preparatory programs for introductory calculus, physics, and chemistry courses are offered to all PREF program students. In addition, time management and study skills seminars are offered to PREF participants to ensure academic success. Experienced Science faculty participate in the PREF program in addition to current upper-level student assistants. The overall objective of PREF is to maximize the retention of first-year students of color in engineering and science majors.

PREF participants, who are typically Bunton-Waller Fellows, excel in their academic studies as freshman and maintain their status as Scholars.

Commonwealth Scholars Programs (Penn State College of Medicine)

The director of Science Diversity Initiatives programs is responsible for coordinating activities with the Penn State College of Medicine, collaborating with other academic units within the university, and selecting students for participation in this program. The program offers research experiences for underrepresented minority students to prepare for medical school, MCAT preparation and shadowing experiences, poster sessions of research projects, and a medical school visitation program.

Other Retention Activities

There are several initiatives which are not led out of the Eberly College of Science, but in which ECoS faculty participate that support the College's effort to retain undergraduate and graduate students. We as a College are making an effort to build, expand, enhance existing programs that are University wide in an effort to have greatest impact on diversity and climate issues as they relate to retention and recruitment of students, both undergraduate and graduate alike. First, the Space Grant Consortium sponsors a minority undergraduate research experience (MURE) program that provides our minority undergraduates the opportunity to work in a research laboratory. This opportunity is available to students beginning in their freshman year. The most immediate impact of this program on the students is to provide them with a network of senior undergraduate students and graduate students in the lab that act as tutors, mentors and in some cases advocates for the students. The safe, educational environment provided to the students by this program goes a long way in increasing retention. The second initiative was developed by Evelyn Ellis, James Stewart and Eva Pell. This initiative is a group mentoring program developed to assist graduate students from underrepresented groups in any and every possible way. The goal is not only to increase retention but to make the overall experience here at Penn State rewarding on all levels. Of course, this effort should also impact recruiting efforts. If our students feel that all of their needs are being met, then it is likely that they will communicate this fact to members of their existing network. Third, the Black Graduate Student Association sponsors an Achievement Conference in which ECoS faculty have participated in the past. This conference provides a forum for interaction, network building, mentoring, career enhancement/development, etc. Finally, several of our faculty members take part in the Women in Science and Engineering Research (WISER) program aimed at increasing retention of female freshman.

Other retention activities include:

- College Scholarships and Awards
- Student Organizations
- Minorities in Science and Technology (MIST)
- Student National Medical Association (SNMA)
- Communications to and among students through development of list-serves and home pages
- Common area for posting information
- Alliance with Residence Life and Housing Services
- Resume database
- Newsgroups (Tutoring and supplemental instruction).

Also, the Pennypacker Program, which is described under question 2 above, is an important aspect of the College's overall strategy to increase the retention of underrepresented students in technical disciplines.

We also believe that encouraging minority students to engage in undergraduate research could be an important retention tool. The following is a quote from the college's 2002-2005 strategic plan:

"Many undergraduate research opportunities are supported by sponsored program and departmental funds. We also make maximum use of the President's Fund for Undergraduate Research and supplement it with college funds to maximize the numbers of opportunities. Virtually all students in the physical and mathematical sciences who express a real interest in doing research are given the opportunity. We are, however, unable to meet the huge demand in the biological sciences. Our future strategies for addressing this problem are to add additional faculty members, who are needed in the classroom as well, and to involve more fixed-term faculty, both instructional and research faculty, in mentoring undergraduate research.

This effort aligns with another goal – to help with the national problem of insufficient numbers of minority graduate students and faculty members. We will further encourage minority students to participate in undergraduate research experiences, and we will track the students to see where they go after finishing their baccalaureate degrees."

4. *What strategies have you implemented to retain graduate students from underrepresented groups?*

The Eberly College of Science recognizes the need to remove barriers that may impede the progress of graduate students. In addressing this issue, the College has decided that underrepresented students will be provided with financial packages that are in place for as long as the student is making satisfactory progress towards the degree. When a student is admitted into the department, the College and the department together ensure that the student will receive a Fellowship or Assistantship for up to five years. In addition, graduate students are counseled to follow a program of study that permits them to develop effective strategies for course work completion and preparation for their comprehensive examination. Departmental strategies for retention include many of the following activities:

- Departmental orientation and mentoring program
- Guaranteed funding through fellowships and teaching assistantships
- Advising programs designed around academic strength of students
- Support for travel to present papers and research at professional meetings.

The college has also implemented the practice of supplementing assistantships and fellowships with bonuses to fund students for twelve (12) months while they are actively

pursuing their degree. In addition, during the first year, students are allowed to focus their time and energy on meeting the academic expectations of their department instead of assuming teaching responsibilities.

The departments have made special provisions for individual students from time to time. Most common is the need to allow students from less rigorous backgrounds to spend an extra year taking courses to catch up and fill in the holes in their technical backgrounds.

5. *What recruitment and retention strategies have been most successful?*

The most successful recruitment and retention strategies are based on collaborations between the departments and the college for improving the recruitment, retention, and funding of minority students. Relationships with other academic units and institutions contribute to attracting the best and brightest students to the college. Greater student exposure to the college departments through attendance at symposiums, participation in summer research programs, interactions at graduate fairs, and greater participation in minority professional societies and meetings have also made a difference.

However, the progress that we have accomplished in this area has been uneven at best, but we believe that the strategies enumerated below will begin to address many of these concerns.

We plan to hold focus groups and to examine strategies which other units and universities have found to be “best practices” as ways of addressing this issue.

The minority students who do successfully graduate from our college go on to some of the most prestigious medical and graduate schools in the country. The retention programs which have been implemented in the college have helped to increase those numbers. However, retention in technical disciplines continues to be a serious pipeline issue, and we are working diligently to increase the pool of diversity scientists who are trained at Penn State.

We believe that the overall climate in the college contributes to retention. Therefore, the college’s 2002-2005 strategic plan includes the following: “Improve the climate for minority students and other students in the college by seeking improvements in all points of contact.

Improving the climate in the Eberly College of Science for all its members is an on-going process. We have shared responsibility for this process across the college. A welcoming and inclusive climate is grounded in respect for others, and this respect must be visible in our day-to-day environment and interactions.

We will initiate a campaign in the college to address all major locations of contact with our students; every place of contact should be welcoming for all students, and we will seek to ensure that minority students in particular feel welcomed. (For example, doors should have windows so that entering an office is less intimidating, staff members should greet all students and faculty immediately, and office displays should be multi-cultural and inclusive.) The college is committed to finding the resources to make the appropriate changes to our facilities, displays, information provided, etc.

- Ensure that every department has a Climate and Diversity Committee and that there is a link between the departmental committee and the college-level Climate and Diversity Committee.
- Charge the departmental Climate and Diversity Committees with developing plans to improve the look and feel of places in the department where we interact with students. Focus on creating a respectful, multi-culturally welcoming environment.
- The Dean will provide resources over a three-year period to support the recommendations of the committees.
- We also plan to have training so that each individual who works in these contact areas is clear about their personal role in fostering a welcoming climate for all.

Challenge 4: Recruiting and Retaining a Diverse Workforce

1. How has your College actively engaged in locating and recruiting faculty and staff from underrepresented groups?

In academic 2000/2001, college staff members assembled guidelines for faculty recruiting to assist search committees and their staff support and to make sure that best practices are routinely followed. This document has been distributed and posted on the college web site.

All advertising, for positions of any type, must be cleared through the Employment and Compensation Division of the Office of Human Resources, and we routinely request that each listing is posted at the IM Diversity web site. In addition, the Dean reminds faculty search committees to review CIC web sites on women and minority Ph.D. recipients and purchases departmental rosters from the Minorities and Women Doctoral Directory to permit committees to further broaden their searches.

Most departments have found that general advertising is less effective than one-on-one personal contact with potential candidates. This is particularly true for minority candidates and senior female candidates. For junior minority hires one department has had notable success by identifying qualified candidates early in their graduate training, establishing contact, and making offers of employment before the individual is really on the job market. Other departments are beginning to look into this approach. In cases where we need to hire in a specific sub-discipline, one department has identified, and then contacted, potential female candidates by scouring the recent issues of *Science* and *Nature* and identifying individuals with female-sounding names who published notable articles in the target discipline.

Our Chemistry department has tripled the number of women on its faculty in the last several years and now ranks third among the top 50 departments nation-wide in the percentage of female faculty.

The number of applicants for staff vacancies from members of underrepresented minority groups remains very small, largely because most recruiting for these positions is from the local community where there are few members of minority groups.

2. *What recruitment strategies have been most successful?*

Analysis of recent faculty recruiting indicates that while the number of applicants from underrepresented groups remains small, our departments have interviewed and extended offers to a proportionally larger percentage of applicants in these groups.

University and college financial support and departmental efforts in recruitment have led to an increase in the successful recruitment of female faculty members.

Dual career issues have had a major impact on our ability to attract female and minority faculty. Spousal hiring is an issue in more than 50% of such recruitments. If we can find appropriate employment for the spouse, we have a chance. We work aggressively to find spousal employment opportunities. This is a continuing challenge; it is often difficult to find something for the spouse on campus, and the community typically has little to offer.

We are currently working with James Stewart to develop a program that will bring in outstanding minority post-doctoral candidates and seek to move them into faculty positions. We are also seeking corporate support for extending this program to include female scientists. In a similar vein, one of our departments has been successful in recruiting black faculty by contacting the individuals, establishing our interest, and making offers before the individuals were actually on the job market.

Aggressive recruitment goals are outlined in our 2002-2005 strategic plan: “Develop the critical masses and climate to ensure that female and minority faculty members feel welcome and supported. With support from the provost, the dean, and the departments, we will increase the percentage of female faculty members from the present 15% of the tenured and tenure-track faculty to 25% in the next ten years. We will also seek additional ways, starting with a program of distinguished postdoctoral fellowships designed to groom future faculty members, to recruit additional minority faculty members. One-on-one recruiting and early relationship building have been shown to be elements of successful recruitment of minority candidates.”

While we have not achieved our goal of having minority representation in the staff across departments, the progress we have made is a result of our commitment to this effort. Our college is certainly not alone in facing this issue. We plan to work with other units and the Office of Human Resources to develop more proactive approaches to recruiting and retaining staff members from under-represented groups. Two possible ideas are to reveal the ethnicity of the

applicants to supervisors during the early rounds of the selection process and to post opportunities outside the university more frequently. Both approaches should give us the opportunity to increase diversity among the group of individuals interviewed for staff positions.

3. *What retention strategies have you implemented in your College to retain members of underrepresented groups?*

Several of our departments have instituted formal or informal mentoring programs to help promote the success and retention of junior faculty members. In addition, the Dean has instituted regular meetings with female faculty members and follows up regularly on issues and needs expressed in those meetings.

Many, if not most, of the retention efforts happen at the department level. A little extra monetary support to carry someone through a dry spell, or a small reduction in teaching or service load during a time when a project is wrapping up or a big proposal has to go in can do much to facilitate success and foster institutional loyalty. We have several specific success stories where this type of intervention made a big difference.

Our Physics department hosted an external review, by the APS Climate Committee for Women, of the departmental climate for females in every position (student, staff, and faculty).

The college Climate and Diversity Committee arranged for interviews of junior faculty members with the University's Senior Mentor (Jim Stewart) to help identify their concerns; the report on that activity is referenced above. The Climate and Diversity Committee also is working with the Dean to develop better mechanisms to communicate with the faculty about policies and procedures that will address their personal and career needs.

The Dean is actively exploring opportunities for endowed chairs and professorships to be filled by women and minority faculty members, both for recruiting purposes and to recognize existing members of the faculty.

Finally, in situations where highly successful faculty members have obtained offers to move to other institutions, the college has worked hard to counter those offers. These efforts have been variably successful.

An important aspect of staff retention is fostering career potential. We are going to work with minority staff members to help them develop strategies to increase their professional development and leadership skills. For professional and leadership development opportunities for staff members from under-represented groups, we plan to offer units significant financial incentives.

4. *What retention strategies have been most successful?*

The active involvement of the department in promoting the success of the faculty member and developing institutional loyalty is key to all retention efforts. Close contact with the

department head, involvement of the dean, and timely infusions of support or relief are also very important.

Challenge 5: Developing a curriculum that supports the goals of the new General Education plan

1. *What initiatives has your college taken in supporting multicultural curriculum efforts?*

Since the subject matter in our college doesn't include the academic study of cultural issues, we need to look for other ways to address multiculturalism. First Year Seminar is an obvious place to start. Although the emphasis in all of the seminars we offer is on content-specific issues, several of the seminars have incorporated discussions on the "practitioners of science," and it is largely through these discussions that multiculturalism has been introduced. One particularly interesting approach, which our FYS coordinator is working to have more widely used, has been taken by a faculty member in Biology who requires that each of his FYS students interviews someone from a different culture and writes about the experience. Following the interviews and reports, class discussions ensue in which each student describes to the class what s/he gained from the experience. In statistics, students have been required to attend campus public lectures germane to diversity and multiculturalism. In addition, we understand that the university may develop some general multi-cultural modules for use in our First Year seminars.

We are also seeking and trying ways of increasing the exposure of our students to a diverse group of outstanding scientists. As discussed previously, we've instituted a program of support for speakers from underrepresented groups. Further ideas under discussion include posters with stories of historically significant individuals and choosing texts which highlight the contributions of a diverse group of scientists.

- We will engage our department heads and leaders of undergraduate education in a discussion of how to revise our current course offerings to be more reflective of our commitment to fostering diversity. We will initiate an effort to develop multi-cultural courses in the college course offering, including financial incentives for course development. We will include in this an effort to add multi-cultural aspects to all of our introductory courses.

2. *What research and teaching in your college has advanced the University's diversity agenda?*

We will expand our efforts to advance the University's diversity agenda through research on teaching and learning among the diverse group of students enrolled in courses offered by our college. This last initiative is described in the college's strategic plan for 2002-2005.

3. *How is diversity integrated into the curriculum of your college?*

In addition to the responses given above, diversity is being integrated into the curriculum of Science in the following ways: We will benchmark ourselves against our colleagues in the Big 10 and look for curricular transformation opportunities appropriate for the disciplines in our college. We will explore setting out for our majors which multi-cultural courses across campus are best suited and linked to the curriculum in the student's major course of study. We will collaborate with Liberal Arts to identify the most meaningful multicultural courses for our majors to take.

Challenge 6: Diversifying University Leadership and Management

1. *How has your college assisted faculty and staff from underrepresented groups in developing leadership and management skills?*

The college has encouraged employees at all levels in its organization to participate in the University's Leadership and Management Development initiatives and has provided financial support to make it possible. In the case of staff members, this has involved many female employees and has contributed to their opportunities to move into higher-level positions.

The college has supported nominations for participation in the university's Administrative Fellows program. Dr. Linda Strauss, a former staff member, participated in the Fellows program several years ago with college support. The college successfully supported the nomination of Dr. Renee Diehl, Professor of Physics, as a Fellow for 2001/2002.

In addition, the college appointed a female assistant dean. This individual has as part of her responsibilities participation in planning and diversity initiatives. In the year she has been here, she has also facilitated discussion about issues affecting women faculty members. With college support, she was appointed a CIC Academic Leadership Program Fellow this year.

Progress in moving minority faculty and staff members into leadership positions is proceeding at a pace slower than anticipated. This year we are nominating a minority fixed-term faculty member for the CIC Academic Leadership Program.

For our minority tenure-track faculty members, achieving tenure is the most important prerequisite to leadership development. We purposefully focus our efforts and energies in mentoring them to maximize their research and teaching accomplishments. As our minority faculty achieve tenure, we hope to bring them into leadership roles in the college, such as committee chairs, departmental leadership, CIC Academic Leadership Programs, PSU leadership programs, etc..

We are going to work with minority staff members to help them develop strategies to increase their professional development and leadership skills. For professional and leadership development opportunities for staff members from under-represented groups, we plan to offer units significant financial incentives.

Challenge 7: Coordinating Organizational Change to Support Our Diversity Goals

- 1. What organizational realignments, systems of accountability, resource mobilization and allocation strategies, long-term planning strategies, etc. has your college implemented to ensure the realization of the University's diversity goals?*

The college established a Climate and Diversity Committee two years ago. The dean's office also provides support for the female faculty group, which is not a formal college organization but has proven to be an effective vehicle for communication and for promoting progress on issues relating to climate and the support and recognition of female faculty members in the college. Two years ago, the Dean instituted financial support for hiring faculty from underrepresented groups, and he has recently established a program of financial support for speakers who are female or from underrepresented minority groups.

The Dean is accountable to ensure the realization of the University's diversity goals and accountability is currently shared down through the college organization, including the responsibilities and accountabilities of the department heads, committee leaders, individual faculty, and dean's office staff. Going forward, every unit will have a mechanism for collecting and responding to feedback on issues and concerns relating to climate and diversity. We will work to make it clearer how our integrated policies support the University's diversity goals. For example, we will have faculty, staff, and department heads specifically address how they have contributed to supporting the University's diversity initiatives in their annual reviews.