

# **Departmental Plan for Broadening Participation Chemistry Department, Texas A&M University**

## **Leadership**

The Chemistry Department is taking an active role in community outreach. Our flagship event is the annual “Chemistry Open House & Science Exploration Gallery,” which typically attracts over 1,000 visitors. This event was originally initiated in the Chemistry Department, and for the last five years has enjoyed the participation of the Physics Department, as well as contributions from Biology and Nuclear Engineering. It is targeted towards K-12 students and their parents, providing a wealth of hands-on science activities, showings of the Chemistry Road Show and lab tours. The Chemistry Road Show is a transportable set of science demonstrations, which during the year are presented to schools throughout Texas and at other public events. Members of the department organize a “Science Café”, held at a local restaurant, as a forum for interaction of the general public with University faculty. All of the above activities naturally rely on faculty, staff and students who donate their time; the managers and staff of the departmental instrument facilities are active participants in these events. The department financially supports the Open House and the Road Show by providing funds for materials.

The National Science Foundation REU program has become a second important pillar of our outreach activities, as it is designed to specifically reach underrepresented minorities. In accordance with demographics in the State of Texas, we are targeting a set of minority-serving primary serving institutions, mostly schools with large Hispanic populations. REU students from these institutions, after successful completion of their undergraduate research experience, receive facilitated acceptance to our graduate program. The Chemistry Department also runs a National Science Foundation GK12 program, with collaborators from the Department’s of Mathematics, Teaching, Learning and Culture, and Educational Psychology. This program engages graduate students in team teaching with high school IPC teachers and provides professional development for teachers.

The Department organizes summer workshops for high school AP teachers that provide continuing education for teachers from locations throughout the state. Workshops, currently supported by participant fees, comprise lectures, problems sessions, laboratory exercises, and field trips. We are working to expand these outreach efforts by seeking external funding for supporting workshops to disseminate new labs that we have developed for our physical chemistry curriculum.

We actively participate in a host of the University’s outreach programs. The Summer Honors Invitational Program (SHIP) provides motivated high-school students a preview of the academic and student life. We host several groups of students throughout the summer, tell them about majoring in chemistry, about career opportunities, and give them a tour of the department. The VIP program invites minority students from high school to the Texas A&M campus. We meet with prospective students throughout the year to interest them in pursuing a career in Chemistry. In the Duke Talent Identification Program (TIP), a summer camp aimed at backing talented students in grades 7-10, we are participating by organizing the “Explorations in Chemistry” module.

## Strategic Planning

Broadening participation is an important factor in faculty recruiting, the graduate program, and the undergraduate program. Overseen by the Department Head in cooperation with the Faculty, there are individual plans for broadening participation by all of these operations:

*Faculty recruiting:* Faculty recruiting is overseen by the Executive Committee, and administered by the Department Head. Faculty positions are announced nationally, and the department seeks to hire the best qualified applicants. In this process, we recognize the need for establishing diversity among our ranks. An important current focus is the number of female faculty members.

*Undergraduate program:* The undergraduate program is administered by the office of the Undergraduate Advisor. We strive to attract and retain the best qualified students. While admission is administered by the University, our focus is in promoting retention of students from all population groups. To achieve this goal, we provide close individual contact with advisors, and have an all-inclusive open door policy. We also disburse scholarships to economically disadvantaged students who show academic excellence to encourage retention.

*Graduate program:* The Graduate Recruitment Coordinator, supported by the Graduate Office, coordinates graduate student recruiting efforts. The goal is to admit students with the highest possible potential as research chemists, and to encourage applications from schools serving underrepresented groups. We have developed strong ties to a number of minority serving institutions (see results below). The Graduate Office in Chemistry also partners with our Bridge to the Doctorate and LSAMP programs to help identify, recruit and retain outstanding students from underrepresented groups. Additionally, the office of the Dean of Graduate Studies at TAMU offers Diversity Fellowships to enhance our efforts in recruiting outstanding students from underrepresented groups.

*Outreach:* Our outreach activities involve participation of volunteers from the entire Department.

## Statistics and Analysis

Statistics describing our program are collected by our staff in the undergraduate office, graduate office, and the Department Head's office. Data pertaining to gender and minority status of our student population is taken from registration forms, where students self-identify their status. Data regarding students' past and current academic performance is also collected. In addition, the university-wide Office for Institutional Studies and Planning is an independent source of demographic data.

The collected data is made available by our staff to all faculty members of the Department as needed. This service includes the generation of tailored reports to address specific questions, which can be used by the respective departmental organisms for establishing future directions.

In addition to the continuous efforts of data collection, a summary document is issued on the occasion of periodic thorough reviews of the Department by external reviewers. This review also contains data pertinent to broadening participation, as well as summaries of current activities. While demographic data can serve as an indicator of recruiting performance with respect to broadening participation, the ability to assess the on-going programs is also important.

Undergraduate courses are assessed using an evaluation questionnaire that is distributed to the students at the end of the semester, and that also asks about the student's individual perception of a supportive environment.

## **Human Resource Focus**

In accordance with University policy, the Department of Chemistry is committed to equal opportunity. Above and beyond this assertion, the Department makes every effort towards attractive and flexible practices that accommodate the needs of a diverse workforce.

*Family related policies:* The Department strives to be a family friendly employer. In our faculty hiring, we accommodate partner placement issues whenever possible (three spouses of new faculty hires to the department were employed within the last five years). Graduate students receive a paid leave period of six weeks after childbirth. Furthermore, the department is an active participant with the Dean of Faculties in developing family friendly programs, especially with respect to partner placement issues and to broaden family related awareness.

*Professional development:* Employees are encouraged to attend training events, for which the department has set aside funds. Our office and technical staff frequently make use of these opportunities. All new faculty receive support from the Department to attend one conference per year.

*Support Networks:* Senior members of the Department actively participate in mentoring in university-wide networks, e.g., the Women's Faculty Network. Internal to the Department, we have recently established a Mentoring Committee, charged with developing a stronger mentoring program for junior faculty.

## **Results**

*Faculty recruiting:* Currently, six members of the graduate faculty are women, and three are underrepresented minorities. In the recent past we have successfully recruited two women as members of the graduate faculty, an assistant professor in 2002 who was granted tenure in 2008, as well as a professor in 2009. It is clear, however, that efforts in this direction need to be continued.

*Undergraduate program:* In spring 2008, 17% of the enrolled students were of Black or Hispanic ethnic origin. 29 scholarships (\$71,000) were disbursed to aid retention of economically disadvantaged Chemistry undergraduate students for the 2008-9 academic year.

*Graduate program:* To maintain ties with minority-serving (e.g., Prairie View A&M University, University of Texas-Pan American and University of Puerto Rico-Río Peidras) and other undergraduate institutions, current doctoral students and faculty members visit these schools on an annual basis for recruiting. The graduate office specifically tracks applications from undergraduate institutions that have received such a visit. This data enables more precise targeting of recruiting efforts, which have led to broader participation from underrepresented groups. For example, between 1998 and 2002, we had 16 students that came from minority serving institutions. Our intensified recruiting efforts have more than doubled this number such that from 2003 to 2007, we have recruited 34 students from those same schools.