

VI. DIVERSITY

Diversity Objectives

Increasing diversity in the personnel (students, postdoctoral fellows, faculty, advisory board members, and staff) of this Center is a high priority. This action is expected to ultimately translate into an enhanced diversity in the information technology research and development workforce. Increased diversity in the Center will be achieved by the following specific actions: (i) Diversity in the faculty participants of the Center will be increased by new faculty additions, including those hires explicitly committed to this Center. The Center will provide these new additions a supportive environment with reasonable Center financial support for their research and educational efforts, and mentoring supportive for the realization of their career objectives. These new faculty additions represent important role models for students from under-represented groups. (ii) In like manner, the Center will commit funding for the recruitment of graduate and undergraduate students from under-represented groups into center activities. These students must be nurtured in a supportive environment that recognizes and enhances individual professional aspirations. These students are the key to early stage enhancement of diversity in the workforce. (iii) Recognizing that long-term and truly significant improvement in diversity requires attention to K-12 education, this Center will actively focus on K-12 populations with the greatest percentages of individuals from under-represented groups. K-12 student-mentoring activities will be initiated in collaboration with university minority outreach offices and with the public school systems. Appointments to the Strategic Advisory Board from the public sector (city and state officials responsible for relevant public education programs) and from under-represented groups will aid oversight of these activities. (iv) Public presentations by faculty and students of the Center and public access to the Flandrau Science Center (at the University of Arizona) can play a role in influencing the public perception of those pursuing careers in science and engineering. This public perception can, in turn, play a role in the decisions of individuals from under-represented groups to enter careers in science and engineering. The personnel of this Center will make public outreach presentations and provide resource materials that will positively impact the career decisions of individuals from under-represented groups. The participation of such individuals will be longitudinally tracked at all levels.

Performance and Management Indicators

In the initial stage of this STC, performance and management indicators must simply be numbers of individuals from under-represented groups recruited into the Center. Retention and human resource development will be indicators that can be evaluated in later years. Although we have launched vigorous proactive efforts aimed at addressing increased diversity at all levels and in all activities of the Center, it is too early to realistically assess (except in an anecdotal way) diversity gains in the K-12, undergraduate, graduate, and postdoctoral communities. However, all three hires to the core (full time) day-to-day operational management structure (Director, Administrator, and Director of EHRDO) have been from under-represented groups (URGs) raising the percentage from URGs to 80%. Of faculty members on the Executive Committee (the key management body of the Center), 4 of the 10 members (40%) are from under-represented groups including African American, American Indian, Hispanic, and Female. Of the two new faculty additions to the research component of the Center (Professor Michal Lipson from the Department of Electrical Engineering at Cornell University and Professor Galen Stucky from the Department of Chemistry at University of California, Santa Barbara), one is from an under-represented group. The Center has been very successful in attracting both female students and members of underrepresented minorities at

the undergraduate, graduate and postdoctoral levels. The statistics for undergraduates, graduate students, and postdoctoral fellows are available in Section VIII. of this report.

Problems Encountered

A major concern with increasing diversity is to not lose sight of the individual from the under-represented groups. Professional development and retention through mentoring at the individual level is critical. Also, substance and content in outreach effort are important. Thus, a heroic and sympathetic participation by all center personnel is critical to the success of efforts to increase diversity. It is important to keep in mind that this battle is largely one of small number statistics, and individual success stories, as well as statistical trends, are important.

Other problems include the short time period between funding of this Center and the current reporting period which does not allow for other than a preliminary implementation of meaningful outreach programs. More funding for efforts to increase diversity could always be used. In particular, at Georgia Tech, several new potential faculty members for the STC who are minorities or female have been identified, but our ability to recruit them into the STC will be in large part dictated by the available level of resources.

Contributions to the Development of Human Resources

With the funding of this Center, an effort was immediately launched to increase the diversity of participation in research activities at the undergraduate, graduate, K-12, postdoctoral, and faculty levels. Efforts were made to improve coordination with the ANLO and colleges/universities with significant populations from under-represented groups. For example, Professor Dalton gave seminars at Norfolk State University and Florida International University. He participated on the scientific advisory board of the CREAM Center at NSU and assisted several universities in the preparation of proposals to funding agencies (as did other members of the STC). Increased research collaboration with these colleges and universities was organized and plans for summer 2003 research activities were developed. In like manner, meetings were held with faculty and students from K-12 institutions with large populations from under-represented groups and with community leaders (including the Mayor of Seattle and members of the Washington State Legislature). Public lectures were given in community forums (the UW Science Forum, the Seattle Community Development Roundtable, the Seattle Technology Alliance). Efforts were made to coordinate with other education and outreach efforts including the Gates Foundation (through coordination with SAB member Martin Smith), various university, city, and state efforts, and industrial efforts (Boeing, etc.). Jasmine Bryant (who has a Ph.D. in chemistry and experience teaching at the K-12 level) was recruited as Director of EHRDO. At the University of Arizona, Rachel Morgan has been extended an offer of a postdoctoral position working under the mentorship of Vicente Tanaquer to take a leadership role in the development of K-12 modules and outreach to secondary schools in the Tucson school district. Professor Natia Frank, who has demonstrated exceptional capability in managing the graduate recruitment program for the Department of Chemistry at the University of Washington, was given responsibility for the integration of EHRDO and research activities. Additionally, in February a team from Optical Sciences Center at UA did a two day visit to Dine College in Tsaile, AZ, Navajo Reservation, the goal was to bring information to students who have very little exposure to the opportunities awaiting them at the University. This is Arizona's northernmost reservation and borders New Mexico.

During this first reporting period, much attention was focused on developing a workshop on information technology research that would serve both to provide training and as a recruitment

vehicle. To leverage NSF STC funding, a proposal was prepared and submitted to the Petroleum Research Fund Type H Grant Program of the American Chemical Society for a Workshop on the Chemistry of Information Technology, special efforts have been made to communicate the opportunity to attend this workshop to minority institutions. This workshop was coupled with a scientific conference on photonic and electronic materials with the intention that these would serve as important recruitment forums (particularly by targeted marketing to those from under-represented groups).

Plans for the Next Reporting Period

Programs involving undergraduate research experiences will be continued into the next reporting period. Following evaluation of current activities at the end of summer 2003 (incorporating analysis from the July 2003 site visit and from the STC Directors' Meeting), we will launch planning of programs for 2003-2004. Workshops focused on undergraduate and graduate students and on K-12 will almost certainly be planned. Efforts will be made to strengthen ties to the ANLO and designated minority institutions. Student and faculty exchanges will be encouraged. Research proposals will be solicited and STC faculty will be encouraged to personally assist the research, education, and proposal writing efforts of ANLO faculty and faculty from other designated minority institutions.

Efforts to increase diversity will continue to be an issue in anticipated searches for new faculty positions at the participating STC institutions. The same can be said for staff hires.

The anticipated move of four faculty to Georgia Tech provides a unique opportunity to enhance diversity in the Center.

- Already, a new female student has chosen to attend Georgia Tech specifically because of the opportunity to participate in the STC and will be attending the ACS sponsored workshop this summer.
- Two faculty members at Georgia Tech have been identified and asked to join the STC with seed programs this coming year, both are members of underrepresented minorities.
- ANLO and other minority schools in Atlanta Area: Clark Atlanta, Moorehouse, Spelman College can interact closely with faculty at Georgia Tech throughout the school year.
- Georgia Tech is historically a leading institution for the training of under-represented minority students and is:
 1. No. 1 producer of African-American engineers at the bachelor's, master's, and doctoral levels
 2. No. 2 in engineering bachelor's degrees awarded to all categories of minority students
 3. No. 4 in engineering master's degrees awarded to all categories of minority students
 4. No. 3 in engineering doctoral degrees awarded to all categories of minority students
 5. No. 4 in engineering doctoral degrees awarded to Hispanic students

Impact of Activities on Enhancing Diversity of the Center

The activities that have been undertaken and those described in the planned activities represent a clear and substantial commitment to the enhancement of diversity at *all levels within the center*. The impact at the K-12 level can be evaluated meaningfully only over a longer period of time. Faculty and staff hires continue to be a area of emphasis and discussions candidates have been initiated but it is premature to elaborate further until offers have been officially extended and accepted.