February 17, 2004

To:      David Hodge  
       Dean, College of Arts and Sciences  

From: J. Michael Brown  
       Chair, Earth and Space Sciences  

RE: Diversity Appraisal  

The Department of Earth and Space Sciences is committed to enhancing diversity in the department. Unfortunately, much remains to accomplish at all levels within the department. It is clear that the current face of faculty visible to students and to the public is far from diverse. Out of 32 academic faculty positions, women hold three and minorities hold two. The sad situation is that in terms of hiring relative to the available pool, our level of diversity meets expectations. This is indicative of a larger problem faced nationally by all physical science departments. The number of women and minorities choosing careers in our fields is not expanding rapidly enough.

The “pipe line” leading through the educational system has serious “leaks” at all levels. Considering just the gender situation, 40% of current undergraduate majors and 36% of our graduate students are women. Over the last three years despite masters degrees granted in proportion to enrollment, only 16% of the PhDs were granted to women. Furthermore, consistent with national trends, only about 10% of applicants for faculty positions are women. Minorities are very seriously under represented.

Increasing representation of the under represented groups at professional levels requires action first in K-12 as well as in post-secondary levels. In recognition of the need to encourage entry into science by under represented groups, a number of faculty initiatives have been supported by the Department of Earth and Space Sciences. These are discussed below. Following outreach, other departmental activities are discussed.

Outreach activities:
1. Washington NASA Space Grant Consortium (WSGC) is a statewide organization established and supported by NASA with additional funds provided by state and private sources. The Consortium’s lead institution is the UW, and the office is based in the UW’s Department of Earth and Space Sciences. WSGC is part of a national program whose mission is to assure a productive future in aerospace science and technology through activities designed to improve and enrich basic science and aerospace-related
education and research opportunities for learners of all ages. WSGC has thirteen academic partners across the state including colleges and universities, the Office of Superintendent of Public Instruction, and two museums.

All WSGC programs emphasize participation by underserved and underrepresented populations. K-12 mini-grants, for example, are awarded preferentially to teachers in schools with high populations of students on free and reduced lunch. The Space Spot, a space science exhibit for shopping centers, targets rural malls without access to science museums and university facilities, reaching out to families that are traditionally underserved. Teacher workshops are provided annually for MESA (teachers of underrepresented students) and NCESD, which serves a largely rural and Hispanic population. Scholarship applications are sent to underrepresented high school students who intend to study science or engineering and who score 1200 or more on the SAT. WSGC staff work with organizations such as GEAR UP, MESA, the Migrant Education Association and others to foster their students’ early interest in studying space-related science and engineering, and in applying for NASA programs and scholarships to support their interests.

Washington Space Grant Consortium includes one tribal college (Northwest Indian College) and its only Hispanic-serving institution (Heritage College). Over the past five year period, WSGC has conducted 51 (of 209) projects in collaboration with organizations representing women, minorities or persons with disabilities, including 38 programs that specifically targeted those populations. Our university partners include minority education offices and minority achievement programs. Space Grant students are regularly selected by these programs as representatives and speakers for large events. For example, Marleen Martinez, a current Space Grant scholar and junior in engineering, spoke about her aspirations to become an astronaut at a recent fund-raising breakfast sponsored by Costco and the UW’s Office of Minority Affairs.

Our scholarship and fellowship programs have always had a strong emphasis on recruiting and retaining underrepresented minorities, women, and persons with disabilities. On average, 49.1% of our scholarship and fellowship awards in sciences and engineering over the past five years have gone to women and 19.6% to underrepresented students. Though we are pleased with these outcomes, we work toward continuous improvement in this important area.

2. Space Science Network Northwest (S2N2) is a two-year old program sharing administrative space with Space Grant in the Department of Earth and Space Sciences. S2N2 has worked with the MESA and GEAR UP programs to focus on students from under represented populations. In summers 2002 and 2003 S2N2 conducted a two hour session on careers and opportunities in space sciences for 20 minority high school students who were at a one week MESA workshop. In 2003 S2N2 ran planetarium shows and space science activities for 125 GEAR UP middle and high school students, most of whom are members of minority groups. S2N2, collaborating with DO-IT STEM, will sponsor a five day workshop in July for teachers who work with exceptional needs
S2N2 paid for a two-week visit of the African American Space Scientists exhibit to Seattle in January 2003. The exhibit was shown for four days at the meeting of the American Astronomical Society and for five days at the African American Academy.

3. Earth and Space Science offers classes specifically designed for **in-service elementary and for secondary school teachers**. These courses are very successful in reaching teachers from all ethnic backgrounds. The teachers return to local school district and impact hundreds of low-income and minority students. In many of the Puget Sound school districts immigrant children with limited English skills are mainstreamed into science classes long before they attend humanities and math classes. We at ESS integrate into our classes ways to help these teachers build inquiry-based, hands-on courses in the earth sciences for such student.

4. ESS 101, offered for **college credit in regional high schools**, is another vehicle to reach under represented groups prior to arrival at the University. We partner with qualified teachers in various school districts and allow them to deliver course content with over-sight provided by department faculty. About six schools are currently involved and we are working with teachers to encourage greater participation by minority students. An identified barrier to broader participation is the high cost for students (approximately $250). An effort to find partial scholarship funding is under way.

In 2001, ESS was asked by Louis Fox’s office to run a pilot program of teaching ESS 101 as a **distance learning class to high schools in rural Washington**. The purpose of the program was to offer college credit to 12th graders from low income, high minority student school districts. We included the following school districts: Toppinish, Entiat, Chelan, Manson, Pateros, and Liberty Bell, Bridgeport and Forks. The course was build around our established Geology 101 Distance Learning class that is entirely a correspondence course. For the high school students we had a weekly TV connection into all these schools at one time. The program was not a success because the high school students needed far more help than a single hour’s TV interaction could provide. In addition very few minority students enrolled in the class. However the single of the Latino students from Toppinish did well in the class and is now a UW student.

**Activities at the University**

**Undergraduate Recruitment of Minority Students**

The Department of Earth and Space Sciences works cooperatively with the advising departments of other environmental majors in a variety of recruitment programs. Annually, this group produces a tri-campus brochure highlighting the variety of undergraduate environmental majors available at the University of Washington. This brochure is provided to the Office of Minority Affairs, for distribution in that office and at recruiting booths staffed by OMA throughout the year. The environmental advisers sponsor information meetings during the academic year, as well as a fall environment fair
featuring environmental employers and educational opportunities. The environmental advisers group also participates in or sponsors information displays for the following: the summer GEAR-UP program on campus, the Students of Color Conference in Olympia, the Bridges 4 Program, the Minority Science and Engineering Program, American Indians in Science and Engineering, the Multicultural Alumni partnership, UWSTEM (Science, Technology, Engineering and Mathematics) Outreach Program, UW Educational Outreach, and multicultural student clubs and organizations. Also, information sessions have been done in connection with WISE. On the web, we are currently updating our undergraduate information to include a variety of diversity reference information links, as well as our departmental diversity report.

Information on GO-MAP and WISE programs are posted and distributed to undergraduate students in the department, as well as information from the Association for Women Geoscientists.

Graduate Recruitment of Minority Students
We face a difficult national situation with a very small minority candidate pool and intense competition among schools. Unfortunately, we have neither adequate financial support resources nor a history of success by non-traditional students in our program. However, we will continue to aggressively recruit promising students at national and regional conferences, and during faculty visits to other departments.

The Department of Earth and Space participates in the Western and National Name Exchange Program. Our website promotion of our graduate programs includes references to GO-MAP, WISE, and diversity resources on the campus. For the past several years, the department has participated with a staffed booth the GO-MAP graduate fair. All program applicants are asked to submit a personal statement that addresses the relationship between their personal background and their aspirations. Last year, one of our minority applicants was awarded a GO-MAP scholarship, but did not enroll. This year, we will be submitting another strong minority candidate –already accepted - for the GO-MAP scholarship.

Information on GO-MAP, WISE and ADVANCE programs are posted and distributed to graduate students in the department, as well as information from the Association for Women Geoscientists.

Faculty Recruitment
We continue to search out candidates for faculty positions from diverse backgrounds. The situation is even more extreme than in the case of graduate recruitment. The number of PhDs in the earth sciences awarded each year to minorities is miniscule. Although a reasonable number of women are pursuing graduate education in the earth sciences, a discouragingly small fraction of women are choosing to apply for faculty positions.
In addition to advertisements in the normal national publications, all positions are listed on electronic bulletin boards maintained by various underrepresented groups. We send e-mail to colleagues requesting their help in identifying under represented candidates.

Staff and Administrative Diversity
The Department of Earth and Space Sciences resulted from the merger of two existing departments, Geophysics and Geology, and more recently, the Quaternary Research Center. At the time of the merger, existing staff members in the separate units were incorporated into the new organizational structure consistent with University policies so the opportunity for hiring new employees from diverse backgrounds has been limited. However, the Department of Earth and Space Sciences is committed to equal opportunity for individuals from diverse backgrounds in any future administrative staff openings. As opportunities occur, the department will make this a priority and ensure that applicants from culturally diverse backgrounds are carefully considered to reflect the goals of the department.

Departmental Climate
Since organization of the department, most of the focus of staff and faculty has been on creating a successful new organization. This has directed attention mainly towards critical problems of courses, degrees, and programs. Successes in hiring new faculty, in developing new courses and degrees, and in attaining healthy growth has enhanced morale within the department.

The time has arrived to more fully address diversity issues. Although we believe that our programs are fair to all learners, we have not yet investigated the climate within the department. For example, the faculty believe strongly in the need for an intensive summer field course. This is a difficult requirement for many non-traditional students. More study is needed to assess whether accommodations are needed.

A recent review of ethnicity codes for ESS majors indicates that nearly 15% may be minority. Anecdotal evidence given by faculty indicates that there may be an increasing Hispanic student presence in the department. The two trends – more students overall and more of color – provide incentive for the department to take proactive steps to review climate within the department. This will be an agenda item at an up coming faculty retreat.