

Draft Charge for BOSC Science to Achieve Results (STAR)/Greater Research Opportunities (GRO) Fellowship Subcommittee

1. Objectives

The Office of Research and Development (ORD) is requesting a retrospective and prospective evaluation of three academic fellowship programs: 1) The Science to Achieve Results (STAR) Graduate Fellowships Program; 2) The Greater Research Opportunities (GRO) Fellowships for Graduate Environmental Study Program; and 3) The GRO Undergraduate Fellowships for Environmental Study Program. The objectives of these evaluations are to: 1) determine if the stated program outcomes are being obtained, and 2) provide direction and recommendations for future program operations, policies, and enhancements.

2. Background

a) Statutory Authority

EPA has statutory authority for the fellowship programs under the Safe Drinking Water Act, Section 1442, 42 U.S.C. 300j-1; Toxic Substances Control Act, Section 10, 15 U.S.C. 2609; Federal Insecticide, Fungicide, and Rodenticide Act, Section 20, 7 U.S.C. 136r; Clean Air Act, Section 103, 42 U.S.C. 7403; Clean Water Act, Section 104, 33 U.S.C.; and Solid Waste Disposal Act, Section 8001, 42 U.S.C. 6901.

b) EPA Strategic Plan

The 2003-2008 EPA Strategic Plan encompasses five goals: 1) Clean Air and Global Climate Change, 2) Clean and Safe Water, 3) Land Preservation and Restoration, 4) Healthy Communities and Ecosystems, and 5) Compliance and Environmental Stewardship. Each goal contains an objective to enhance science and research. Typically the awarding of fellowships most closely supports Goal 4 (Healthy Communities and Ecosystems), Objective 4.5 (Enhance Science and Research). In addition, the Strategic Plan discusses strategies the Agency is applying across all five goals in areas such as science, human capital, innovation, information, homeland security, partnerships, and economic and policy analysis. The fellowship programs indirectly support the Agency's cross-goal strategies as well¹.

c) STAR Fellowship Program

The STAR Graduate Fellowship Program was initiated in 1995. Since the inception of the program, approximately 1,125 STAR fellowships, about 100 each year, have been awarded². Since the program was initiated, its stated purpose has been to encourage promising students to obtain advanced degrees and pursue careers in environmentally related fields. This goal is consistent with mission of EPA, which includes providing leadership in the protection of public health and the environment. In 2001, funding for the STAR fellowship program was eliminated in the 2002 fiscal year budget. However, funding was restored in 2003 to the original level of

about \$10 million and has since been stable.

An inherent goal of the STAR fellowship program is to have the nation's best and brightest students conduct basic and applied research in environmentally-related research areas. Fellows are selected to receive fellowships only after their submissions undergo a rigorous merit review by experts outside of EPA. The association between the research produced by the Fellows, and the Agency's long-term and immediate goals, has become increasingly important since the Agency has sought to implement the Government Performance and Results Act (GPRA).

In 2003, The National Academy of Sciences (NAS) evaluated EPA's STAR research grant and fellowship program³. In its report, entitled "The Measure of STAR," NAS concluded that both the STAR extramural grants and fellowship programs were outstanding when compared to similar programs. Most notably, the report found that the STAR program fills a unique niche by supporting "important research that is not conducted or funded by other agencies," and that it is "directly relevant" to the mission of EPA. In addition, the NAS report concluded, "The STAR fellowship program is a valuable mechanism for enabling a continuing supply of graduate students in environmental sciences and engineering to help build a stronger scientific foundation for the nation's environmental research and management efforts."

In 2003, the EPA Office of the Inspector General also evaluated the STAR Fellowship Program⁴. This report recommended that ORD expand the focus of its efforts to include measuring results by conducting internal reviews, selecting meaningful performance measures, and maintaining necessary data on fellowship applicants and recipients. Additionally, the report recommended adoption of certain best practices used by other Federal fellowship programs. Many program enhancements have been implemented since this evaluation was completed.

d) MAI/GRO Limited Competition Fellowship Programs

The Greater Research Opportunities (GRO) Graduate and Undergraduate Fellowship Programs are the current versions of ORD's limited competition fellowship programs. The first limited competition fellowships, previously known as the Minority Academic Institution (MAI) fellowships, date back to 1981. The MAI programs were established in response to Executive Order 12320, commonly referred to as the White House Initiative on Historically Black Colleges and Universities (HBCUs)⁵. Other White House Initiatives regarding minority institutions followed, and the eligibility for MAI fellowships was expanded to include them as well. The responsibility for managing the Minority Academic Institution (MAI) Fellowship Programs was transferred to NCER when it was created in 1995.

In the fall of 2003, upon the advice of EPA's Office of General Counsel (OGC), the eligibility requirements of the programs were broadened, and the name was changed from MAI to GRO. Previously, MAI program applicants were required to attend an HBCU, or other minority serving institution. As a result of the policy changes, the GRO applicant pool was broadened to include any eligible student attending an accredited college or university in the US that received less than \$50M in federal Research and Development (R&D) money (reduced to \$35M in the 2006 solicitation). According to the OGC, the Agency did not have sufficient statutory authority to

limit the fellowship competition to minority academic institutions.

From its inception, the intent of the limited competition program was to build capacity for environmental research at schools and universities receiving limited funds. Until the 2003 policy change, the focus was on building capacity at HBCUs, Hispanic Serving Institutions, Tribal Colleges and Alaskan Native Serving Institutions, and Native Hawaiian Serving Institutions. To date, 116 undergraduate and 122 graduate fellowships have been awarded. As with the STAR fellowship recipients, GRO fellows are only selected to receive the awards after their proposals have undergone a rigorous merit review by experts outside of EPA.

3. Draft Charge

Charge Question 1: The stated purpose of the STAR Graduate Fellowship Program is to encourage promising students to obtain advanced degrees and pursue careers in an environmental field, a benefit to both the public and private sector. Has the STAR Graduate Fellowship Program produced the desired outcome? Please make recommendations for enhancing the potential for future positive outcomes.

Charge Question 2: The GRO Graduate Fellowship Program, like its predecessor, the MAI Graduate Fellowship Program, is intended to strengthen the graduate environmental research capacity of institutions of higher education that receive limited funding to build such capacity, especially institutions with substantial minority enrollment. Has the GRO Graduate Fellowship Program fulfilled its purpose? Are there barriers or obstacles that prevent EPA from fully reaching this goal? Please make recommendations for enhancing the potential for future positive outcomes.

Charge Question 3: The GRO Undergraduate Fellowship Program, like its predecessor the MAI Undergraduate Program, is intended to strengthen the undergraduate environmental research capacity of institutions of higher education that receive limited funding to build such capacity, especially those with substantial minority enrollment. By providing quality environmental education support for undergraduate students, it was hoped that recipients would pursue careers in environmentally related fields beyond the baccalaureate level. Has the GRO Undergraduate Fellowship Program fulfilled its purpose? Are there barriers or obstacles that prevent EPA from fully reaching its goal? Please make recommendations for enhancing the potential for future positive outcomes.

Charge Question 4: Please review the fellowship recipient selection process, and current decision criteria. Do they assure selection of high quality fellowship recipients performing scientific research in areas which best support the Agency's mission? Please make recommendations for improvements.

Charge Question 5: Part of ORD's mission is to perform research and development to identify, understand, and solve current and future environmental problems. As such, an inherent outcome of the STAR and GRO Graduate Fellowship Programs is to produce basic and applied research

results usable by EPA and others for decision-making and/or policy development. Has this outcome been obtained? How can we enhance the program to product results relevant to environmental protection?

Charge Question 6: Since the inception of the fellowship programs, assuring diversity among fellowship recipients has been a goal of the NCER. Please comment on the practices, resources, and effectiveness of our outreach efforts and make recommendations for enhancing the potential for positive outcomes in the future.

Charge Question 7: Please review the fellowship programs' resources, information management, and communication processes and procedures. Are there any recommendations for program improvements or sustainability?

4. Potential Approach to Fellowship Review

- The Subcommittee Chair will assign review and writing assignments to Subcommittee members in advance of the face-to-face meeting.
- Hold two conference calls in the two months preceding a face-to-face meeting.
- Hold a 1.5 day face-to-face meeting in DC.
- If needed, hold one or two conference calls to complete the draft report the month after the face-to-face meeting.
- Goal: A report approved by the Subcommittee is available for BOSC Executive Committee discussion/approval at the June 2006 BOSC Executive Committee Meeting.

End Notes:

1. See <http://www.epa.gov/ocfo/plan/plan.htm>

2. See 1996 EPA Report to Congress: The Science to Achieve Results Program, available at www.epa.gov/ncer/publication/archieve/rtpcong.pdf

3. See pp10-11, 55-56, 137-138, "The Measure of STAR", National Research Council, 2003. The entire report can be downloaded at <http://www.nap.edu/catalog/10701.html>

4. OIG Report No. 2003-P-00019. "Science to Achieve Results (STAR) Fellowship Program Needs to Place Emphasis on Measuring Results". Available at <http://www.epa.gov/oig/reports/2003/2003p00019-20030930.pdf>

5. The Executive Order has been superceded by Executive Order 13256, issued by President George W. Bush on February 12, 2002.