The Many Faces of Mentoring to Enhance Diversity in the Geosciences

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1. Abstract

The establishment of the AGU Diversity Plan in 2002 recommends a policy of education, engagement, outreach, facilitation, partnership and collaboration in order to increase the diversity and representation of minorities in Earth system science (ESS). Such increased representation will provide the global scientific community with an expanded means of communicating the science behind ecological and economic practices that affect natural resources. However, conventional educational tracts for degrees in ESS often do not fully prepare underrepresented groups for academic and professional success. The Minority Striving and Pursuing Higher Degrees of Success in Earth System Science Professional Development Program (MS PHD’S PDP) provides professional development experiences to facilitate the advancement of minorities committed to achieving outstanding Earth system science careers. The MS PHD’S PDP expands upon traditional preparation by providing a diversified mentoring program that engages distinguished academicians, scientific organizations, industry partners, alumni, peers, and representatives of non-science disciplines in the support, increase, and retention of underrepresented groups in ESS programs. MS PHD’S PDP student benefits from mentoring experiences include completion of academic programs and establishment of successful careers. Afterward, as MS PHD’S PDP alumni, they provide similar mentoring experiences to subsequent generations of underrepresented ESS students thereby ensuring continuity and growth of diversity in ESS.

2. Introduction

The MS PHD’S philosophy of diverse mentoring experiences provides mentees with many benefits including:

- A supportive environment to develop strategies, professional skills, and career development goals
- A community that facilitates and sustains mentor-mentee partnerships
- Collaborative partnerships with professional organizations, federal agencies, industries, private foundations, colleges and universities
- Increased exposure to funding, research and career opportunities
- Practical exercises in leadership and mentoring skills development

3. MS PHD’S Phases

MS PHD’S provides its participants with a three phase framework that effectuates a diverse mentoring structure through interactions with onsite program mentors, dream team (MS PHD’S alumni) mentors, AGU science meeting mentors, attendance at professional society conferences, and exposure to program officers, directors, and administrators for universities, industry, non-profits and federal and state agencies.

Phase I:
- Students participate in mentor partnerships and community building activities
- Initial mentor-mentee partnerships consist of interactions, networking, and professional development
- Students are exposed to broad earth system science and engineering while attending the American Geophysical Union Fall Annual Meeting

Phase II:
- Participants engage in additional Earth system science and engineering exposure mentor- mentee interaction and networking and professional development activities at one of the MS PHD’S Organizational Partners’ meetings
- Each participant will attend the meeting that most closely aligns with his or her specific academic and professional interests

Phase III:
- The final phase consists of ‘capstone’ activities, which includes visits to the National Academies, the headquarters of various government agencies, and the NASA Goddard Space Flight Center
- Each student participant receives a scholarship award of $1,000.00

4. Results

- Since the program inception, a total of 165 undergraduate and graduate students from underrepresented populations have participated in the MS PHD’S program.
- Student interaction with multiple mentors resulted in exposure to diverse learning perspectives and increased one-on-one, mentee/mentor interaction.
- Student participants, empowered with information and skill, moved into program leadership as near-peer mentors a/k/a “Dream Team”.
- Student participants achieved doctoral degrees and returned as program mentors.

5. Conclusions

The mentoring experiences provided by MS PHD’S are forging a pipeline of competitive, qualified, and diverse geoscientists from all over the nation. (Figure 1)

Participants develop leadership skills that enable them to mentor and develop new generations of geoscientists. A hierarchy of diverse mentoring experiences sustains geosciences at all socioeconomic realities to further the geosciences pipeline.

References:


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