

UNIVERSITY OF SOUTH CAROLINA

PFF: Preparing Future Faculty

Summary: Preparing Future Faculty (PFF) is a program for doctoral students that attempts to better prepare these individuals for careers as college and university professors by exposing them to a variety of professional development experiences related to instruction, research, and service. PFF is a joint undertaking of the Association of American Colleges and Universities and the Council of Graduate Schools.

At the University of South Carolina (USC) the PFF program has been operating since the fall of 1999 through the College of Science and Math. Graduate students from eight different fields have been active in the program, including biology, marine science, chemistry, computer science, geology, physics, mathematics, and statistics. The professional development aspect of the program offers opportunities for graduate students to teach at two-year colleges; to serve as mentors of research; to engage in community and academic service activities; and to attend workshops and seminars that deal with a variety of pedagogical issues. A highlight of the USC's PFF is the **PFF credential** which can be earned by participating graduate students once they have attended the requisite seminars, workshops, and completed the necessary activities related to instruction, research, and service. Requires a minimum of 12 points.

I. Teaching Core Requirement:

- PFF Fellows must attend three teaching seminars. Examples: Teaching and learning styles (1 pt), Examination and assessment (1pt), Classroom technology (1pt)
- PFF Fellows must have at least two mentored teaching experiences. Examples: Teach a lecture at USC or a partner school (1pt), teach a lab at a partner school (2pt), Teach an introductory course (3pts), tutor (2pts)

II. Research Core Requirement- Fellows must document at least one experience as a mentor of student research

- Attend Professional Development Workshop (1pt). Examples: Grant writing, CV and interview preparation, Dissertation writing
- Mentor student research projects (1pt-3pts)
- Write and submit a grant proposal (2pts)
- Present a seminar at a partner school (1pt)

III. Service Core Requirement- Fellows must serve on the steering committee for at least two semesters

- Academic Service. Examples: Attend faculty meeting (1pt), Participate in a search committee (1pt), Serve on PFF steering committee (1pt), Judge science fair (1pt)

Examples of past PFF programs:

- PFF Partnership: *SC Junior Academy of Science Winter Workshop*
- PFF Seminar: *Incorporating Learning Styles in the classroom*
- PFF Seminar: *Teaching Research Ethics*
- Johnson C. Smith Visit: Research Excellence Collaboration
- PFF Workshop: *Creating a Teaching Portfolio*
- PFF Seminar: *Careers in Statistics*
- PFF Presentation: *Improving Research Presentations*
- PFF Seminar: *Critical Thinking Skills in Science Education*

Current PFF Status: seeking renewal funding

The Howard Hughes Initiative

- Supports undergraduate biosciences research program
- 15% underrepresented minorities, 50% females
- Both academic year and summer

AAPP: African American Professors Program

- Addresses underrepresentation of AA professors on college and university campuses
- Sponsored by W.K. Kellogg Foundation, SC General Assembly's Commission on Higher Education and the Univ. of South Carolina
- Ph.D students in STEM and other disciplines receive a supplement to their departmental assistantships
- Students are mentored and engage in numerous activities that prepare them for life in academia



Minority Enrollment at USC (2003)

Undergraduate: 2,592 AA + 46 AI / 17,689 (14.9 %)
STEM: 515 AA + 9 AI / 3,169 (16.5 %)

Graduate: 901 AA + 16 AI / 6,511 (14.1 %)
STEM: 37 AA + 3 AI / 839 (4.8 %)

Graduate School Programs

Workshops

- Annual two-day Instructional Development Workshop on College Pedagogy for new Graduate Teaching Assistants
- Annual two-day International Graduate Teaching Assistants Workshop which includes evaluation of spoken English

•Seminars

- Research Ethics for graduate students and faculty
- Writing Research Proposals
- Scholarly Writing and Publishing
- Writing Dissertations and Theses

•Friday Forums

- Weekly discussions of issues common to the success of graduate students in all programs

•Graduate Students Day

- Graduate students' scholarly posters and creative work displayed
- Plenary sessions for competitive research papers
- Presentation of awards and honors

Contacts

PFF: Dr. Tom Reeves, reevst@midlandstech.com

GK-12: Dr. Jed Lyons, Department of Mechanical Engineering, 803.777.9552, lyons@sc.edu

Graduate School: Dr. Christine Ebert, Dean, 803.777.9086, cebert@gwm.sc.edu

College of Arts and Sciences: Dr. Mary Ann Fitzpatrick, Dean, 803.777.5371 or Dr. Roger Sawyer, Sen. Assoc. Dean, 803.777.1403

GK-12: Graduate Teaching Fellows in K-12 Education

GK-12 Goals, Track 2, 2005- 2010

- The Partners in Inquiry (Pi) Project supports partnerships between Engineering and IT and Arts and Sciences graduate students and K-12 teachers
- Enhance science education in South Carolina by:
 - Direct assistance to classroom teachers on site
 - Professional development for teachers
 - GRAD 800: The Graduate Student as Instructor



Principal Investigators

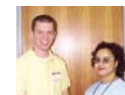
- J Lyons, Engr.; C Ebert, Educ.; 2001-04: graduated 23 Fellows
- R Sawyer, A&S; S Thompson, Educ. 2005-09: 31 NSF Fellows and 52 locally-supported Pi Fellows

Faculty Mentors

- One from each department
- GK-12 Graduate Student Fellows**
- 30 graduate students from the College of Engineering & Information Technology

GK-12 Teachers

- 40 Teacher Partners
- 90 Workshop Participants



GAANN Fellowships: Graduate Assistance in Areas of National Need (Dr. O. Lopez, Office of External Grants)

- supports Ph.D. graduate students in STEM disciplines
- biology, computer science, math, statistics, physics

SC-BRIN: South Carolina Biomedical Research Infrastructure Network (Clemson Univ., Medical Univ. of SC, Univ. of SC with Claflin Univ., College of Charleston, Furman Univ., and SC State Univ.) Dr. J Baynes, Chemistry

- Develop statewide research capacity
- Networking between research and undergraduate institutions
- Enhanced research activities for minority students and their institutions

Alfred P. Sloan Foundation's Minority Ph.D. Program

- Provides funding for graduate education expenses
- Faculty mentors oversee implementation of this program

GRADPortal website (<http://gradportal.cosm.sc.edu>)

- Provides undergraduate minority students having limited guidance and inadequate information about sources of funding for graduate school
- Assists faculty and administrators seeking minority graduate students
- Will phase into operation by Educational Directories Unlimited, Inc.

PREP: NIH Post-Baccalaureate Research Education Program

- Encourages minority undergraduates pursuing degrees in biomedically relevant science to pursue a doctoral program in some area of biomedical research
- Recruitment strategy developed with several HBCUs in SC and NC

UMEB: Undergraduate Mentoring in Environmental Biology

- Sponsored by NSF (Dr. T Mousseau, PI, Dept. Biol. Sci.)
- Links with several HBCUs
- Brings minority students to USC for summer research experiences
- An introduction to the research environment preparatory to entering graduate school
- Partners with other NSF REU programs as well as SC-OLSAMP and EPSCoR programs

SC-LSAMP: South Carolina Louis Stokes Alliance for Minority Participation Program

- Cooperative agreement between NSF and consortia of 8 other SC institutions, industrial partners, and governor's office
- To increase quantity and quality of AAs receiving SMET degrees
- Focused on improving student skills in freshman science gateway courses (calculus, biology, chemistry, physics)