

## Program Report

### [PROF 1 Overview of the preparation of future faculty program](#)

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The PFF program is a professional development program for doctoral students preparing for a career as a college or university faculty member. It includes preparation for teaching, research, and service roles; involves learning about the institutions with different missions and expectations for faculty; and working with faculty mentors for teaching and professional service roles as well as for research. The ACS is one of 11 professional disciplinary associations supporting the development of innovative PFF programs in their fields. The overview will include an analysis of the need for new approaches, basic concepts underlying PFF programs, and different kinds of program activities. It will also present evidence of the benefits of PFF programs for graduate students, faculty members, and departments. Handouts will contain information about nearly 300 institutions that are involved in PFF programs located at 43 research universities and about how to access other resources.

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### [PROF 2 From PFF Fellow to Faculty Mentor](#)

**Jason A. Cody**, Department of Chemistry, Lake Forest College, 555 N. Sheridan Road, Lake Forest, IL 60045, Fax: 847-735-6194, cody@lfc.edu

I will present my experiences as both a Preparing Future Faculty (PFF) Fellow and PFF Faculty Mentor. Of the five major university consortia that implemented PFF in 1993, Northwestern University was the only one to include the Chemistry department as one of the participants. I was instrumental in that involvement and was one of the first Fellows from the department. My experience affirmed my vocation as a college professor. Now as an assistant professor at Lake Forest College, one of the cluster institutions of the Northwestern Cluster, I have served as a mentor for two current graduate students. I will discuss components of the program as I have experienced it and some of the barriers that were overcome in the implementation of the mentoring relationships.

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### [PROF 3 Preparing Future Faculty in a multidisciplinary context](#)

**Shelley L. Smith** and **Jan Smith**, Center for Teaching and Learning Services, University of Minnesota-Twin Cities, 120 Fraser Hall, 106 Pleasant St. SE, Minneapolis, MN 55455, Fax: 612-625-3382, smith103@umn.edu, smith004@umn.edu

The University of Minnesota Preparing Future Faculty program offers a multidisciplinary approach to future faculty development while other PFF programs have chosen to emphasize a disciplinary approach. Minnesota graduate students and postdoctoral fellows from over 100 disciplines attend two graduate courses that focus on the development of teaching skills and the exploration of the faculty role on diverse college and university campuses. We believe that multidisciplinary dialog in the PFF classroom opens new conceptual doors for future faculty to prepare for institutional affiliation, collegiality among peers, and more effective faculty governance. Minnesota PFF addresses disciplinary concerns and contexts through the creation of mentoring relationships between participants and faculty members from PFF partner institutions. This two-pronged approach helps program participants construct a more complete picture of the realities of faculty roles and responsibilities. The experiences of a Chemistry mentor and mentee will be examined in the presentation following this one.

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### [PROF 4 Preparing future faculty: Musings of a mentee and mentor](#)

**Sherri W. Hunt**, Department of Chemistry, University of Minnesota, 207 Pleasant Street SE, Minneapolis, MN 55455, weers001@tc.umn.edu, and **A. Truman Schwartz**, Department of Chemistry, Macalester College, 1600 Grand Avenue, Saint Paul, MN 55105, Fax: 661-696-6432, schwartz@macalester.edu

During the 1999-2000 academic year, SWH, a graduate student in physical chemistry, was a participant in the Preparing Future Faculty (PFF) Program at the University of Minnesota. PFF participants must complete coursework at the University and gain classroom experience under the supervision of an experienced mentor. SWH elected to do her observation and internship with ATS in the chemistry department of Macalester College.

This paper is a joint exploration of the program from the perspectives of both the mentee and the mentor. We agreed to work together in the undergraduate physical chemistry course, where SWH observed and critiqued several of ATS's classes and then assumed responsibility for teaching the chapter on group theory. Her commitment included three hour-long classes, a laboratory session, and an unscheduled recitation session. In addition, she prepared and graded a problem set, contributed a question to a take-home examination, and attended a three-hour faculty committee meeting to experience another one of the responsibilities of college faculty. We will describe the PFF seminar, our initial meeting, the orientation workshop, negotiating our responsibilities, the implementation of the program, and our interaction. We will also offer some observations on the strengths and weaknesses of the program.

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### **[PROF 5 From training to informed pedagogy: Graduate programs for future chemistry faculty](#)**

**Christopher F. Bauer**, Dept. of Chemistry, University of New Hampshire, Durham, NH 03824, Fax: 603-862-4278, [cfb@christa.unh.edu](mailto:cfb@christa.unh.edu)

Good chemistry teaching should not be an accident. At the University of New Hampshire, several academic programs - a 12 credit Cognate and a 32 credit Masters - prepare Ph.D. students for faculty careers. The goal is for students to be "teaching ready" when they complete their graduate work. In addition, a summer Institute on College Teaching offers a Certificate in College Teaching to students and faculty from other institutions. Created in 1996 with continuing support from the U.S. Dept. of Education Fund for Improvement of Post-secondary Education (FIPSE) and the Pew Charitable Trusts (via Association of American Colleges and Universities and Council of Graduate Schools), these programs have three graduate-level academic components: Core, Field, and Praxis. Chemistry graduate courses encompass the research literature in science education, and a clinical experience called the Pedagogical Field Laboratory. This presentation will describe these programs and the lessons being learned as they develop.

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### **[PROF 6 Developing the next generation of academia: The Preparing Future Faculty program in action](#)**

**Jennifer A. Firestine**, Department of Chemical Sciences, University of Illinois at Urbana-Champaign, 601 S Mathews, Urbana, IL 61801, Fax: 217-244-8029, and James P. Birk, Department of Chemistry & Biochemistry, Arizona State University

Preparing Future Faculty (PFF) is a national program to develop new approaches to preparing doctoral students who are seeking careers in the professoriate. PFF is a two-year program in which doctoral students are given the opportunity to experience the "behind-the-scenes" life of faculty at various institutions of higher learning. Following a year of seminars and site visits, PFF fellows are teamed with professors at the different schools to work on projects in the three areas of academia: teaching, research, and service. We will describe the program, the projects and the experience of a fellow throughout the program. We will also discuss the benefits that were gained from the experience and how these activities lead to greater success after graduation.

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### **[PROF 7 Preparing Future Faculty mentoring program at the University of Kentucky](#)**

**Dell W. Jensen**, Chemistry Program, Centre College, 600 West Walnut Ave., Danville, KY 40422, Fax: 859-323-1069, [jensen@centre.edu](mailto:jensen@centre.edu), and Carolyn Carter, Teaching and Learning Center, University of Kentucky

Traditional graduate preparation focuses almost exclusively on research. Teaching and other skills such as service, advising, and navigating academic bureaucracy are necessary for success as a faculty member, but are often absent from graduate training. The national Preparing Future Faculty (PFF) program was developed to prepare graduate students for the role of college faculty. The PFF program at the University of Kentucky is a campus-wide initiative to provide graduate students with the training and skills needed to transition successfully into faculty life. The program consists of three one-credit seminars and a practicum. The practicum, a mentoring program that pairs a graduate student with a faculty member at local college, allows graduate students to explore a range of experiences that may include teaching a course under their mentor's guidance. The practicum provides an opportunity for students to apply their knowledge and skills and begin to comprehend faculty life in a supportive setting.

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### **PROF 8 PFF component of the graduate program in chemistry at the University of Massachusetts Amherst: A catalyst for changes in graduate education on the UMass campus?**

**Julian Tyson**, Angela Fahey, and Gregory Gallagher, Chemistry, University of Massachusetts, 701 Lederle Graduate Research Tower, 710 North Pleasant Street, Amherst, MA 01003-9336, Fax: 413-545-4846, tyson@chem.umass.edu

There are 120 students in our graduate program of whom 10 have committed to the PFF component. The majority of these are in the first year of their studies. Of the more senior students, the only one to have completed her studies is moving on to a faculty position in the University of Georgia system. While the first year students have been concentrating on the various components of the first year of our graduate program, the more senior students have been making contacts with faculty at our partner institutions and engaging in serious discussions with a number of faculty regarding teaching philosophy. In addition to raising the consciousness of the UMass Chemistry faculty about issues relating to graduate education, PFF has also been noticed in other quarters: both Julian Tyson and Ric Weibl (PFF program manager, AACU Washington) participated in a workshop organized by the University's Graduate School and The Campus Career Network in October 2000, and Julian is a member of a Provost's Task Force charged with "examining graduate student mentoring across the campus, and making recommendations for coordinating, supplementing and rewarding these efforts". The Chemistry PFF group held a one-day seminar in January at which our partner faculty spoke about what their jobs consisted of (and offered some advice) and we have been trying to spend time with faculty speakers in the Departmental Seminar Program. Angela and Greg will supply more details and some evaluative commentary

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### **PROF 9 Faculty 2.0: Embedding the scholarship of teaching and learning in future faculty development**

**Brian P. Coppola**, Department of Chemistry, University of Michigan, 930 North University Avenue, Ann Arbor, MI 48109-1055, Fax: 734-647-4865, bcoppola@umich.edu

A fundamental PFF precept is that we prepare future faculty too narrowly than the position requires. There are a variety of ways to frame solutions to this problem, and these possibilities are being explored in many locations, including official PFF sites. In this talk, as part of my work in the Carnegie Foundation's CASTL program (Carnegie Academy for the Scholarship of Teaching and Learning), I will examine the conditions and consequences resulting from a broader conceptualization of scholarship on preparing future faculty. I will trace the historical development of "scholarship" as a way to understand and assess its impact on future faculty education. I will argue that a worthy goal in higher education will be to assure that all faculty can arrive on campus ready to design, implement, and assess educational programs as readily as they are able to do with their research programs.

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### **PROF 10 CSIE at the University of Michigan: Lessons learned**

**Melissa M. Batchelor** and Brian P. Coppola, Department of Chemistry, University of Michigan, 930 N Univ. Ave, Ann Arbor, MI 48109-1055, Fax: 734-647-4865

New professors should arrive on campus as prepared to carry out all of their responsibilities and obligations as faculty members as effectively as they are prepared to establish their research programs. Chemical Sciences at the Interface of Education (CSIE) provides graduate students the opportunity to enhance their preparedness for academic careers in the areas of teaching and service, drawing from and relying on research training without compromising it. The CSIE program integrates a graduate student's traditional development in research scholarship with professional development experiences in teaching and a more broadly defined understanding of faculty work. Therefore, graduate students who participate, not only become expert researchers, but competent in areas of teaching and service as well. In this presentation, the outcomes of such a program on graduate education from a graduate student's perspective will be addressed.

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### **PROF 11 Implications for faculty development arising from student involvement in future faculty development**

**Benjamin P. Reynolds** and Brian P. Coppola, Department of Chemistry, University of Michigan, 930 N. University Ave., Ann Arbor, MI 48109-1055, Fax: 734-615-9751

Increasing students' understanding and awareness of teaching prior to the beginning their academic careers is a central goal of future faculty development programs. Enhancing understanding about teaching is also a goal of traditional faculty development programs. In fact, current faculty are sometimes in need of a higher level of motivation and enthusiasm for teaching than the future faculty, and so faculty can have an equal or greater benefit from the interactions and discussions fostered by student participation in future faculty development programs. With an increased exposure to and participation in teaching activities, resulting from future faculty development projects in our department, faculty mentors have increased their interest and enthusiasm for teaching. This presentation will discuss the direct and indirect interactions of faculty and graduate students in changing the face of teaching within our department.

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### **PROF 12 Finding the right match: A personal odyssey**

**Stephen P. Watton**, Department of Chemistry, Virginia Commonwealth University, PO Box 842006, 1001 W. Main Street, Richmond, VA 23284, Fax: 804-828-8599, spwatton@saturn.vcu.edu

The types of academic positions cover a broad spectrum, which ranges from teaching-only to almost exclusively research. Although less widely acknowledged, the academic career interests of individuals cover a similar spectrum. For most individuals, finding the right balance between the teaching and research expectations in an academic department is the key to success and career satisfaction. Despite the wide variation in career options and interests, graduate training is typically geared toward excellence in research, and is thus skewed toward training future faculty for research-intensive positions. Coming from a strongly research-oriented background, but with strong aspirations for a career involving a strong educational component, the presenter was not fully prepared for identifying and obtaining an academic position having the right balance between teaching and research. With the aid of Arlene Russell's seminar class at UCLA, entitled "Issues in Higher Education" (the precursor to UCLA's PFF program), the balance was found.

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### **PROF 13 Applications of PFF to the academic job search and in instruction**

**Laura B. Sonnichsen**, Department of Natural Sciences, Parkland College, 2400 W. Bradley Avenue, Champaign, IL 61821

My experiences with the PFF program as a graduate student and how it prepared me for an academic position. Aspects to be discussed include the role PFF played in my search for an academic position, the effect of PFF upon my instructional methods and assessment techniques, and the effect of PFF upon my understanding of the responsibilities of a faculty member toward one's students and one's institution.

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### **PROF 14 PFF as an aid to an academic career**

**Chandima Abeywickrama** and Thomas C. Streckas, Department of Chemistry and Biochemistry, Queens College and the Graduate Center of the City University of New York, 65-30, Kissena Blvd, Flushing, NY 11367, Fax: 718-997-5531, chandima@qc.edu

This is my second year in the PFF program at Queens College CUNY. The main aim of this program is to improve and facilitate the preparation of doctoral students for faculty careers.

The workshops, June retreat, conferences and meetings are extremely worthwhile. It is a great opportunity for graduate students and faculty to meet and interact at a more personal level, and discuss academic and personal issues related to teaching, mentoring, duties of faculty, tenure and promotion procedures, resume preparation, career planning, research work, grants and cooperative learning.

The workshop at Queensborough Community College on the uses of computers and technology in teaching was not only exciting, but seemed specially appropriate for the challenges the future holds.

The PFF program in addition to aiding in embarking upon an academic career also ensures your growth as a solid researcher. This has enhanced my ability to become a successful competitor in the current job market with more self-confidence and better judgement.

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### **PROF 15 PFF experiences: New York City**

**Thomas Streckas, JaimeLee Iolani Cohen**, and Robert Engel, Department of Chemistry and Biochemistry, Queens College of CUNY, 65-30 Kissena Boulevard, Flushing, NY 11367, Fax: 718-997-4103, thomas\_strekas@qc.edu, Jcohen1999@aol.com

Queens College has had a program of Preparing Future Faculty in operation for the past two years. In the present presentation are described the features of this program, the interactions with cluster campus sites, and the outcomes of the program to date. In addition, presentation of experiences and value are made by a student participant who has been appointed to a full-time tenure-track faculty position at a four-year university subsequent to participation in the program.

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### **PROF 16 PFF and the ACS**

**Jerry A. Bell**, Education and International Activities Division, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036, Fax: 202-872-8068, j\_bell@acs.org

It is fitting to conclude this symposium with a brief outline of the ACS role, partnering with the Council of Graduate Schools and the American Association of Colleges and Universities, in expanding the PFF initiative, with support from the NSF, to include more graduate programs in science, mathematics, and computers. The PFF project is part of a diverse array of ACS programs that affect graduate education in the chemical sciences. This context will also be reviewed.

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### **PROF 17 Development of a high performance work team**

**John K. Borchardt**, Southaven Communications, 8010 Vista del Sol Drive, Houston, TX 77083-5039, Fax: 281-544-8687, jkborchardt@hotmail.com

High performance work teams don't just magically appear when managers wave their hands and assign employees to work teams. Development of a truly high performance work team is an evolutionary process often requiring years.

The process of creating a high performance work team requires a combination of a clear business model, defined roles and responsibilities for each team member, optimization of team membership and

development of teamwork skills. With the exception of the first stage, this model is an interactive and interacting multi-step process.

The author will describe the evolution of a group of disparate individuals into a high performance industrial chemistry work team that won a team performance award from an industry trade association. The team became a specialty chemicals group within a commodity chemical company and after four years achieved 67% of sales from chemical products less than three years old. The author will describe learnings obtained from the process that will facilitate development of other high performance work teams.

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### **PROF 18 Women chemists and work functions**

**Mary W. Jordan** and Bruce M. Millar, Department of Career Services, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036, Fax: 202-872-4529, [m\\_jordan@acs.org](mailto:m_jordan@acs.org)

This presentation will look at the work functions of women in the chemical workplace. Whether by design or not, women are clustered around certain work functions. For example, women tend to be more concentrated in the lab and teaching functions, according to ChemCensus 2000, the report drawn from the 2000 ACS Comprehensive Salary and Employment Status Survey. At the same time, women are less concentrated in management areas. This clustering in work functions has effects and implications for the careers of women in chemistry. Using the data from three ACS employment censuses of its members, women chemists will be compared to their male counterparts in looking at the work functions of chemical employment in industry, academia, and government over the period of 1990-2000. Also included in this presentation will be the profiles of women chemists and their work functions.

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### **PROF 19 New millennium workforce: How diverse is it? How diverse should it be?**

**Helen M. Free**, Diagnostics Division, Box 70, Bayer Corporation, 1884 Miles Avenue, Elkhart, IN 46515, Fax: 219-262-6945, [hmf22@acs.org](mailto:hmf22@acs.org), Yvonne Curry, American Chemical Society, and Stephanie Allen, Department of Diversity Programs, American Chemical Society

We will present a variety of statistical data relative to the current status of women and specific minorities: African Americans, American Indians, Asian Americans, and Hispanics in the US workforce. The data will be inclusive of level and field of highest degree attained in the sciences with emphasis on the chemical sciences; specific data on women and minorities in the three major employment sectors - business, education and government; and a comparison of salary data relative to degree level. We will summarize with a review of trends throughout the past century and attempt to predict what probably should happen in the 21st century.

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### **PROF 20 Age and employment status are also diversity issues**

**John K. Borchardt**, Southaven Communications, 8010 Vista del Sol Drive, Houston, TX 77083-5039, Fax: 281-544-8687, [jkborchardt@hotmail.com](mailto:jkborchardt@hotmail.com)

Typically, diversity issues are seen primarily in terms of gender, race, ethnicity, and sexual preference. However, other aspects of diversity have become quite common and need to be considered by companies in their benefits programs, by supervisors in dealing with staff members, and by staff members dealing with each other. These diversity factors include age, family status, health, and lifestyle. Yet another factor is temp/contract/"permanent" employment status as companies increasingly make use of short-term employees.

This presentation will focus on two of these factors: age and temp/contract/"permanent" employment status. To the maximum extent possible, numerical data rather than anecdotal information will be used

to explore issues of age discrimination and on-the-job discrimination against temporary employees. Data sources include the ACS, National Science Foundation and other units of the U.S. federal government.

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### **PROF 21 Breaking boundaries, building opportunities: The Ronald E. McNair post-baccalaureate achievement program**

**Kurtis J. Koll**, Physical Science Dept, Cameron University, Academic Coordinator for the McNair Scholars Program, 2800 W. Gore Blvd., Lawton, OK 73505, Fax: 580-591-8011, kurtisk@cameron.edu, and Chearlene Glover-Johnson, Asst. Director McNair Scholars Program, Cameron University

The under-representation of women and Native American, Hispanic, or African Americans is pronounced in science and mathematics careers. Native Americans, Hispanic, or African Americans comprise 23% (NSF, 1996) of the population but make up only 6% of the science and engineering labor force. The McNair Scholars Program at Cameron University, Lawton, Oklahoma, provides an opportunity for all students meeting eligibility criteria to prepare for post-baccalaureate (doctoral) education. Scholars are selected through a competitive process and are subsequently involved in workshops, colloquia, research internships, and other activities which model the graduate school experience. Many McNair Scholars programs are interdisciplinary, but some are directed toward science and mathematics only. Scholars prepare for a doctoral program in graduate school with a career goal to return to a higher education campus as a member of the faculty and a role model for first generation college students who are under-represented in higher education.

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### **PROF 22 Chemists with disabilities: Tapping the talent pool**

**Dorothy L. Miner**, Associate Specialist, Water Quality Extension, North Carolina State University, Department of Biological and Agricultural Engineering, 213 Weaver Labs, Box 7625, Raleigh, NC 27695-7625, Fax: 919-515-6772, dorothy\_miner@ncsu.edu

Persons with disabilities enjoy successful careers in Chemistry and other fields of science and technology, but at a rate much lower than their presence in the general workforce. Capable students with disabilities who express interest in science drop out of the pipeline at a much higher rate than their counterparts without disabilities. This is a loss to the scientific endeavor and to our society as a whole, neither of which can afford to discard talent because it comes in unconventional packaging. Diverse life experiences among scientists provide a broader base for problem-solving approaches, and for generating the questions that lead to enlightening research. People with disabilities represent a population whose perspective is enriched by novel events and opportunities for creative problem-solving. The main barriers to participation are the attitudes of others. In most cases, only small measures are needed to "level the playing field" so that students and employees with disabilities can participate fully and productively. Although advances in technology, architecture, and education have removed many barriers for persons with disabilities, lack of information or misinformation about accommodations often results in their exclusion. Practices that have led to higher numbers of women and other minority groups in the chemical workforce can allow the chemical endeavor to benefit from the contributions of this group as well. This presentation will discuss successful policies and practices through which PWD are able to work productively and competitively in the chemical sciences.

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### **PROF 23 Integrating diversity issues into ACS local section and divisional activities**

**Howard M. Peters**, Peters, Verny, Jones and Biksa, LLP, 385 Sherman Avenue, Suite 6, Palo Alto, CA 94036, Fax: 650-324-1678, peters4pa@aol.com, and Sally B. Peters, Xerox-PARC

Most local sections and/or divisions have not yet created a formal Minority (Diversity) Affairs Committee. The Santa Clara Valley (SCV) local Section and the Division of Chemistry and the Law (CHAL) created Committees in 1997. In October 1999 the Inventors Make a Difference Day Event at the Intel Museum in Santa Clara, CA was attended by several hundred students and their families. On March 25, 2000 at the

San Francisco ACS meeting over 200 3rd and 4th grade minority students learned how to invent and that you don't need to be a rocket scientist to be an inventor. SCV and CHAL have partnered with a number of local organizations and joined in the Silicon Valley with the Carver Science Fair and Recognition Day. On Jan 5, 2001 about 150 local African-American HS students presented science projects many of which are main streamed in local science fairs. Dr. Attila Pavlath spoke and a tape of former President Bill Clinton about Dr. Carver was shown. These projects and group interactions are discussed.

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#### **PROF 24 The Civic Scientist: The Science Policy Fellowship**

**Catherine Woytowicz**, ACS Science Policy Fellow, Office of Legislative and Government Affairs, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036, Fax: 202-872-6206, c\_woytowicz@acs.org

Thomas Jefferson said "Science is my passion and politics is my duty." Reflecting this view of the civic scientist, the American Chemical Society (ACS) selects Science Policy Fellows to work with the Society's Office of Legislative and Government Affairs for a one or two-year term. The science policy fellow helps to determine ACS's policy on issues affecting chemistry and contributes to the Society's efforts to educate policymakers.

The current ACS Science Policy Fellow—Catherine Woytowicz—will share her "behind-the-scenes" look at decisionmaking in Washington, DC, provide an overview of her experience, and explain why the fellowship is an excellent career change or sabbatical opportunity for ACS members.

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#### **PROF 25 Diversity fuels innovation: The engine of corporate success**

**Diane G. Schmidt**, The Proctor & Gamble Company, Cincinnati, OH 45241, Fax: 513-626-1595, schmidt.dg@pg.com

The engine that drives corporate success is innovation and diversity helps to power it.

One of the major challenges facing companies in the 21st century is whether or not to use diversity as a key strategy for driving innovation. This question is extremely timely and even more relevant for companies competing in the global market place. This is because diversity in employee and consumer base becomes exacerbated whenever companies increase their dependence on building and sustaining business results outside the US. To compound matters, this heightened diversity generally confronts such companies head-on faster and more wide-spread than they anticipate. Thus, proactive strategies to manage and harness the benefits of diversity under this scenario are needed or it is likely that diversity could become an important barrier to innovation.

This talk aims to provide a compelling basis and important evidence to encourage companies to choose diversity as a key corporate strategy to raise their capabilities to innovate to new heights and become big winners in the global market place.

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#### **PROF 26 Female chemists in the top 50 chemistry departments**

**Donna J. Nelson**, Department of Chemistry, University of Oklahoma, Norman, OK 73019, Fax: 405-325-6111, djnelson@ou.edu

Statistics will be presented revealing the representation of females in the top 50 chemistry departments, ranked by NSF according to chemical research expenditures. The data presented were gathered by carrying out a survey of these departments. Statistics pertaining to these female chemists in academia will be discussed by race/ethnicity, by rank, and by national origin. Some of the results are unexpected

and demonstrate that such surveys are necessary in order to gauge what is needed in order to achieve diversity.

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### **PROF 27 Innovations to creating a diverse workforce**

**Zafra Lerman**, Science Institute, Columbia College, 600 South Michigan Avenue, Chicago, IL 60605, Fax: 312-663-5172, zafra@aol.com

I just returned from a conference on the Chemistry and Biology of Isotopes, where I pointed out to my colleagues that, out of 120 conference participants, only seven were women and none were African-American or Hispanic. The year is now 2000 and, despite all our advances, nothing seems to have changed concerning minorities. If we want to continue to claim that we practice the democratic process, we must guarantee equal education for all -- this will require changing the methods of teaching chemistry. Examples will be presented.

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### **PROF 28 Multicultural pipeline**

**Isiah M. Warner**, Steve Watkins, Ernestine Baker, and Su-Seng Pang, Department of Chemistry and Mechanical Engineering, Louisiana State University, Baton Rouge, LA 70803, Fax: 225-388-3971, isiah.warner@chem.lsu.edu

The low number of minorities opting for careers in science, mathematics, and engineering technology (SMET) has been of concern for many decades. In addition, the relative number of minorities opting for careers in SMET has not changed substantially over the past few decades. However, the picture is not entirely bleak. This talk will highlight three success stories regarding undergraduate and graduate education for African Americans. At the undergraduate level, the Meyerhoff Scholarship Program at the University of Maryland, Baltimore County is an acknowledged success, producing relatively large numbers of African American undergraduates successfully entering some of our country's strongest graduate programs in SMET. At the graduate level, Louisiana State University has enrolled a record number of African American students who are pursuing PhDs in numbers comparable to the rest of the nation as a whole. The third component of this talk will highlight the effectiveness of an individual effort. Dr. Su-Seng Pang of mechanical engineering at LSU has started to produce African American PhDs at a rate which far exceeds all of his engineering colleagues combined and the nation as a whole. Data from these programs and this individual effort will be highlighted and possible keys to success will be outlined in this talk.

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