



Report on PSM Activities September 2006

It has been a busy summer for CGS as evidenced by the following summary of activities related to the PSM initiative. We also encourage you to look at a compilation of [selected PSM "press hits"](#) from July – September 2006 posted to the CGS website. If your PSM program is in your local or regional press, please be sure to send us a copy of the press release and the article so that we can help extend the coverage!

General Information

- The development of generic promotional tools (brochures) that are suitable for student recruitment and marketing the PSM to prospective employers, including policy makers and local government officials is nearing completion. Copies will be provided to the PSM directors "manning" the PSM booth at the SACNAS meeting in October.
- A total revamp of the [sciencemasters.com](#) website is underway. Watch for further developments.

What CGS Needs from You

- If you initiated a visit with your Congressional representative(s) during the August recess, please complete and return the [legislative feedback form](#) posted to the Congressional Visits section of the [CGS website](#). We are excited to learn about your visits.

Outreach Activities

- A technical workshop on the Professional Science Master's was held on July 11, 2006 in Cambridge, Massachusetts at the New Deans Institute and the Summer Workshop for Graduate Deans, sponsored by the CGS July 9-12, 2006. Paul Tate provided a history of CGS involvement with the PSM, including evaluating and awarding planning and implementation awards for PSM programs at master's focused institutions. Carol Lynch provided an overview of the PSM in her presentation "Professional Science Master's 101." She defined the PSM, including the unique features of a PSM, provided the rationale behind the development of the PSM, gave a broad view of "typical" requirements in a PSM, and addressed who enters PSM programs and who hires PSM graduates. Karen Klomparens, Dean of the Graduate School at Michigan State University and a member of the CGS PSM National Advisory Board, provided a perspective on the PSM programs from the viewpoint of a dean at a major research university. In establishing PSM programs, she noted that there are challenges and opportunities – both of which must be addressed; talked about the "plus" component of the PSM programs at her institution – the Business Management and Communication Skills Certificate Program, and gave an overview of the PSM programs in industrial mathematics and food safety. Scott Winston, also a member of the CGS PSM National Advisory Board, from NABI pharmaceuticals provided some context from the employer perspective of how the PSM programs fit into the workforce needs of industry. Eleanor Babco addressed Data Needs and Data Issues associated with the Professional Science Master's including: why data were needed, what kind of data was necessary, the history of data collections on the PSM, what is currently known, and the future plans for data collections. PowerPoint presentations for Lynch, Klomparens and Babco are available at the following URL:

<http://www.cgsnet.org/Default.aspx?tabid=259>. An article by John Gravois on the dean's workshop with particular mention of the PSM appeared in the August 4, 2006 issue of *The Chronicle of Higher Education*.

- Patty McAllister and Eleanor Babco met on July 11, 2006 with Michael Thomas, Senior Vice President of the New England Board of Higher Education and directing a new initiative entitled "College Ready New England." This initiative is designed to develop a workforce in the New England area that will keep it economically competitive in the face of demographic shifts. A packet of information on the PSM was provided and a discussion on how the PSM initiative can complement the College Ready New England competitiveness strategy by enhancing options for students particularly in STEM fields followed. Mr. Thomas expressed much interest in the PSM and continued follow-up is planned.
- In response to an article entitled "Mastering Engineering" that appeared in *Inside Higher Ed* on July 28, 2006, in which C. Judson King, director of the Center for Studies in Higher Education at the University of California at Berkeley, and a professor emeritus of chemical engineering, argued for "a more liberal education for engineers, and greater prevalence and recognition of the worth of professional master's degrees," Eleanor Babco and Carol Lynch prepared a response suggesting that the PSM model might be utilized in engineering. It would satisfy the need for more breadth in the engineering curriculum, as well as the concept of the master's as a first professional degree for engineers. It appeared as a "Comment" to the original article. (<http://insidehighered.com/news/2006/07/28/engineer>).
- *The Professional Science (Math) Master's Degrees: History and Prospects*, by Sheila Tobias was published in the July 2006 issue of the *CGS Communicator*. As one of the developers of this innovative degree, Sheila provides a personal look into the PSM degree from inspiration to conception, and looks forward when the PSM will be a more permanent fixture in graduate education. This was the second article on the PSM that appeared in 2006 in the *Communicator*. An earlier article by Carol Lynch appeared in the April-May issue. A third article, based on the presentation made by Donald Langenberg, Chair of the CGS-PSM Advisory Board, at the Midwestern Association of Graduate Schools (MAGS) meeting in Chicago on April 20, 2006 will appear in a future issue of *The Communicator*.
- Eleanor Babco, Carol Lynch, and Patty McAllister have continued to follow up with representatives from the SAS Institute. A meeting will be held on September 22nd between the two groups at the CGS offices. Information on the programs of the SAS institute and information on the PSM have been exchanged.
- Eleanor Babco and Saeed Foroudastan (PSM coordinator from Middle Tennessee State University), made presentations on the PSM at a Breakfast Briefing on August 15, 2006 at the annual meeting of the National Conference of State Legislators. The presentations were crafted for state policymakers. Several legislature staffers expressed interest in these innovative degrees and there was follow-up by NCSL. A listing of all attendees has been provided to CGS and additional follow-up will be done.
- Carol Lynch made a presentation on the PSM and the national initiative directed toward students in PSM programs on August 19, 2006 at the University of Arizona at their annual "kick-off" organized by PSM coordinator Alaina Levine. Sheila Tobias and Lindy Brigham, PSM Program Director at the University of Arizona, walked the students through a case study designed to illustrate the range of skills needed in the workplace.

Data Efforts

- As previously notified, CGS decided that in order to establish its own baseline data the template of the joint CGS/GRE Graduate Enrollment and Degrees Survey would be utilized to collect enrollment and degree data on the PSM from the graduate deans. On June 12, 2006, surveys were sent to 101 programs in 52 institutions and on August 7, 2006 a reminder notice was sent to those who had not yet responded. As of September 11th, a total of 58 surveys (i.e. programs) from 26 institutions were received. Additional effort will be undertaken to increase the current 57% response rate.

- Data collection efforts were discussed at a technical workshop on the PSM which was held at the CGS Summer Workshop July 9-12, 2006 (see earlier reference). After a presentation by Eleanor Babco on data collection efforts of CGS, deans in attendance at the workshop reinforced the decision by CGS to collect enrollment and degree data on the PSM from their offices, stating that they could work with their central statistics and better coordinate with the PSM directors/ coordinators. They also indicated that they would be willing to administer an exit survey when developed by CGS since many currently already do this.
- On July 19, 2006, an e-mail request was sent to all PSM directors/coordinators in order to ascertain the status of their programs. A second e-mail reminder was sent on September 14th seeking input from those who had not yet responded. To date, 23 institutions representing 32 programs have responded providing very encouraging information. Of the institutions currently enrolling students (4 responding institutions not yet enrolling students), enrollments are generally stable or increasing. For example, from fall 2004 to fall 2006, the University of Dayton PSM program in financial mathematics increased from 4 to 10, the University of Texas at San Antonio program in applied mathematics jumped from 4 to 20, the North Carolina State University program in microbial biotechnology rose from 15 to 22, and the Oregon State University Program in environmental sciences increased from 3 to 10. The PSM programs at Middle Tennessee State are growing very rapidly. In fall 2005, there were 20 students enrolled in the three programs (9 in biostatistics, 4 in biotechnology and 7 in health care informatics). In fall 2006, there were 45 students (13 in biostatistics, 20 in biotechnology and 20 in health care informatics). However, there were a few decreases – notably the bioinformatics program at Arizona State which dropped 50%, from 18 to 9 and the bioinformatics program at Georgia Tech which declined from 19 to 14. Most of the programs reporting said graduates were having little difficulty in finding suitable employment and were experiencing few problems in sustainability on their campuses. A complete report on the status of PSM programs will be forthcoming.

Legislative Initiatives

- After working in a bi-partisan manner during the summer Congressional recess, staff members from several different committees released the draft **National Competitiveness Investment Act** on September 13, 2006. The bill combines pieces of several other bills that had been introduced and acted upon previously by the Senate Committees on Commerce and Energy. A new third part of the bill was developed by the Health, Education, Labor and Pensions (HELP) Committee and addresses improving the math and science education pipeline and the preparation of teachers in these subjects. Staff described this bill as the beginning of a national strategy to address American competitiveness implying that other initiatives may be developed in the future. The bill may be brought to the Senate floor for consideration prior to the end of September depending upon the floor schedule and provided agreement can be reached about amendments.

The bill would require the Director of NSF to establish an NSF clearinghouse to share program elements used in professional science master's degree programs and other advanced degree programs related to science, mathematics, technology, and engineering, to help institutions of higher education establish professional science master's programs. The clearinghouse would be established in conjunction with 4-year institutions of higher education, **graduate schools**, industry and federal agencies.

It would also require the Director to award grants to 4-year institutions of higher education to facilitate the institutions' creation or improvement of PSM degree programs. The program would make awards to a maximum of 200 four-year institutions of higher education for a 3-year period. Any grant renewals would be for a maximum of 2 additional years. The Director would be required to give preference in making awards to 4-year institutions of higher education seeking federal funding to support pilot professional science master's degree programs to applicants that secure more than 2/3 of their funding for such professional science masters degree programs from sources other than the federal government. Proposed authorization of appropriations for PSM are:

2007- \$10 million **2008-** \$15 million **2009-** \$18 million

2010- \$20 million

- CGS sent an e-mail to all PSM directors on August 4th encouraging them to seek visits with their members of Congress during the August Congressional recess to discuss the PSM. To help them arrange and conduct their visits, four items were prepared and sent to them: 1) Background and Instructions documents which included suggestions for arranging, conducting and following-up on the visits with members of Congress; 2) PSM Talking points; 3) Bills and cosponsors for the four bills introduced in Congress that include PSM and support for it; and 4) the PSM Congressional contact list which matched institutions with PSM programs with members of Congress by state including name of the state/district schedulers, phone numbers, emails, etc. Additionally, a Feedback form was prepared and sent on August 11th and a reminder for those who had not scheduled their visits yet. CGS will follow-up with PSM directors to return the “feedback” forms.
- A “**Chart on Innovation Bills**” was prepared by Patty McAllister, Director of Federal Relations at CGS, and distributed to a number of PSM directors and other PSM associates, including the Alfred P. Sloan Foundation. This has now been updated and expanded to two charts – one for legislation introduced in the Senate and one for legislation introduced in the House. Copies are attached.

Other Activities

- At the suggestion of Kathryn Jernberg, Dean of Admissions and Student Services at the Keck Graduate Institute, to organize a group of PSM directors to work on joint recruitment since the various PSM programs are different, Carol Lynch asked CGS consultant Sheila Tobias to lead this effort. A letter was sent to PSM program directors announcing the proposed joint recruitment strategy and soliciting their input. A number of PSM directors have exchanged information about conferences/meetings they are attending to recruit students.
- As part of the national recruitment effort, CGS has secured a booth at the SACNAS conference on October 26-29, 2006 in Tampa, Florida and three PSM directors will be attending and “manning” the booth – Jung Choi from Georgia Institute of Technology, Sally Veregge from San Jose State University, and Janey Youngblom of California State Stanislaus. If you have brochures describing your particular PSM program and would like them displayed at the booth, please let us know and we will advise where they are to be sent. A “generic” PSM flyer directed toward recruiting students will be available at the booth.
- Sheila Tobias, CGS consultant, continues to be the liaison between the CGS and the Sloan Foundation on promoting state-wide system PSM programs. An October meeting with representatives from the State of Illinois and Carol Lynch and Tobias will be held. Further information on that meeting will be forthcoming.
- Alaina Levine has inaugurated a Mentor Protégé Program at the University of Arizona. Information on this innovative program for the PSM was provided to the PSM listserv by Alaina.
- At the request of the new PSM coordinator at the University of Buffalo, Heather Kornacki, who was seeking advice in “reinvigorating” their PSM programs, Carol Lynch, Eleanor Babco, and Helen Frasier participated in a conference call on August 2, 2006. Follow-up information on recruitment strategies and implementing best practices for advisory board use and program evaluation were provided. A suggestion provided by the CGS PSM team was for Heather to utilize the CGS-PSM listserv seeking help from other PSM directors/coordinators and she did so on August 10, 2006. Several PSM directors responded to her request with very helpful advice and suggestions.
- Carol Lynch and Eleanor Babco participated in a conference call on August 4, 2006 with Adele Luta, Program Manger of the S&T Entrepreneurship program at Case Western Reserve University to gauge the status of the PSM programs and to hear about their plans for the future. It appears that all are healthy, and recruiting students is not a problem. The programs have been kept small because of the nature of the set-up of the PSM programs. All their graduates have successfully set-up entrepreneurial businesses, and a number of them have testified before the Ohio Legislature about the innovative PSM programs at Case Western Reserve.
- Eleanor Babco, Patty McAllister, and Helen Frasier participated in a conference call on September 12th with Dan Stein, Dean of the College of Science at New York University. NYU is

beginning three PSM programs – one in physics, one in chemistry and one in biology. The physics program will begin admitting students in the fall of 2008. An Employer Advisory Committee has been set-up. CGS followed up providing further information to Stein and continued follow-up is planned. [Dan was involved with setting up the original PSM programs the University of Arizona, so he is very familiar with the model.]