



Report on PSM Activities Fall 2009

Since the spring of 2009, the Council of Graduate Schools (CGS) PSM team has been engaged in numerous activities to promote, grow and institutionalize the Professional Science Master's degree. These are summarized below.

CGS is pleased to announce and welcome Sally Francis, Dean of the Graduate School at Oregon State University, who was selected as the CGS Dean in Residence this year and will be working with the PSM team.

Meetings and Presentations

The seventh Advisory Board meeting was held on July 11, 2009 in Quebec City, Canada, in conjunction with the CGS Summer Workshop. Carol Lynch summarized the report on activities, particularly thanking members of the AB for all their work and participation in CGS-organized meetings, both nationally and regionally. She noted that CGS has had increasingly good collaboration with NPSMA, with Nancy Vincent participating in monthly conference calls with Executive Director Stephen Lemire as well as attending the quarterly NPSMA meetings. She highlighted the state-wide initiatives in Florida and New York, noting that in both states, the coordinators, Patricia Bishop and David King, are working on the development of PSM programs to match regional workforce needs. She called attention to the 2009 BIO International Convention, the largest conference in bio-based industries, where a session on the PSM was held. PSM program directors Linda Strausbaugh and Jung Choi, as well as PSM Advisory Board member, Scott Winston, presented. The presentations were very well received, and a session will be planned for next year's meeting. The BIO meeting was held in Atlanta, so Scott and Linda made a site visit to the PSM programs at Georgia Tech. Carol reported on presentations on the PSM at two professional meetings – one at the meeting of the Council of Environmental Deans and Directors and one at the American Institute of Biological Sciences. There has been an increasing number of applications for PSM affiliation. For the first six months of 2009, there were as many programs approved as the entire 2008 year. This increase and the diversity of programs have put strains on the PSM team, and a new committee was established to review applications where the CGS team had questions. Carol also reported on the current activities of NPSMA from a report provided by Stephen Lemire. Eleanor Babco provided an update on the PSM biennial meeting to be held on November 4-6, 2009. Patty McAllister reported on the \$15 million provided to NSF for the creation of PSM programs as well as on her efforts to get Congressional representation for the PSM biennial meeting. Carol Van Hartesveldt, Director of the Division of Graduate Education at the National Science Foundation, participated in the meeting giving a report on the general progress of the upcoming \$15 million solicitation for the development of new PSM programs that resulted from the ARRA stimulus bill. The idea of using

the PSM model for the preparation of secondary science and mathematics teachers was discussed and subsequently resulted in the formation of a committee, chaired by Donald Langenberg, to explore this further.

American Institute of Biological Sciences - Carol Lynch participated in a panel at the annual AIBS meeting in a session organized by Ursula Bechert, NPSMA President, entitled **Professional Science Masters: Connecting to the Business Side of Science** on May 19, 2009. She provided an update on national PSM initiatives and as part of the panel participated in an interactive dialogue with attendees.

Association of Public and Land-Grant Universities Council of Research Policy and Graduate Education (CRPGE) - Sally Francis, CGS Dean in Residence, organized a session at the CRPGE Summer Forum on June 11, 2009 on **The Professional Science Master's Degree (PSM): A Workforce Development Strategy** which provided an overview of the PSM Model and an update on how it is rapidly gaining recognition including recent funding through NSF. Carol Lynch provided an overview and a status update of the PSM, and James Henkel gave some examples of best practices from the PSMs at the University of Connecticut.

Council of Environmental Deans and Directors – Carol Lynch participated in a workshop entitled **Climate Solutions Curriculum Committee Workshop: Developing a new Professional Masters in Climate Solutions Science** at the 2009 Summer Program Conference of CEDD on July 7, 2009 in Warrenton, Virginia. Don Langenberg, a member of the CGS PSM Advisory Board as well as a member of the Board of NCSE, which facilitates the CEDD, also participated in the workshop.

CGS Summer Workshop - The CGS PSM team organized a Hot Topics session on the Professional Science Master's degree on July 13, 2009. David King, Dean of Graduate Studies and Research at SUNY Oswego and head of the SUNY PSM initiative, and Carol Van Hartesveldt, Acting Division Director of EHR at the National Science Foundation, facilitated the session, which had the highest attendance during its time slot, competing with five other sessions. Overall, among the 12 hot topic sessions, it was the second highest attended. The value of collaborative approaches was discussed, both among universities and with employers. Several participants provided examples.

National Professional Science Masters Association - Nancy Vincent attended and participated in all the quarterly 2009 meetings of the NPSMA: March 5-6, June 18-19, and September 9-10, 2009. She provided an update of the activities of the CGS PSM initiative, information about PSM affiliation, and information on the PSM biennial meeting.

HBCU Graduate Education Forum - As part of the 2009 White House Conference on HBCUs the Howard University graduate school organized a graduate education forum, "New Horizons: Graduate Education Programmatic and Funding Opportunities for HBCUs," on August 31, 2009. Carol Lynch made a presentation on the professional science master's degrees which stimulated much discussion, not only from university participants but from federal agency representatives and members of other organizations.

Engaging Universities

Cornell University - Eleanor Babco and Carol Lynch participated in a conference call on May 27, 2009 with J. Ellen Gainor, Associate Dean, and Mary Ellen Buhl, student advisor for the master's program in applied statistics, in a discussion to create and/or convert some current master's programs to PSMs, in particular the master's program in applied statistics. Follow-up is continuing.

North Carolina State University - The CGS PSM team participated in a conference call on July 6, 2009 with Lisbeth Borbye at North Carolina State and two program directors to discuss two prospective PSM programs – one in environmental assessment and one in nutrition. Follow-up is continuing as they address the concerns expressed by the PSM team.

University of Maryland University College - The CGS PSM team participated in a conference call on May 29, 2009 with Rana Kahn, Director of the Biotechnology PSM programs at UMUC, and several UMUC faculty members who were developing new PSM programs, to address some of their questions. After additional e-mail correspondence, the CGS PSM team approved three new PSM programs – one in Information Technology with a specialization in Software Engineering, one in Information Technology with a specialization in Information Assurance, and one in Information Technology with a specialization in Telecommunications Management. There are now seven PSM programs at UMUC.

The CGS PSM team approved the following 15 PSM programs since our spring report: **California State University, Northridge** program in Assistive and Rehabilitative Technology; **Fort Hays State University** program in Biological Sciences; **San Diego State University** program in Medical Physics; **Sonoma State University** programs in Computer Hardware and Software Systems, in Communications and Photonics, and in Bioengineering; **Southern Illinois University, Carbondale** program in Advanced Energy and Fuel Management; **Stony Brook University** Master of Science in Instrumentation (business track) program; **Towson University** program in Applied Physics; **The College at Brockport, State University of New York** in Biological Sciences; **University of Central Florida** programs in Health Care Informatics, and in Modeling and Simulation; and **University of Maryland University College** programs in Information Assurance (Information Technology), in Software Engineering (Information Technology) and in Telecommunications Management (Information Technology).

In addition, the PSM team participated in calls from many other institutions seeking specific information about developing PSM programs.

General System/State Initiatives

California State University – The CGS PSM team continues to work with the California State System PSM initiative as they bring additional PSM programs to fruition. Mohammad Qayoumi, President of CSU, East Bay, will provide his perspectives on how the PSM fits into California's innovation strategy at the biennial conference on November 5, 2009.

SUNY – The CGS PSM team continues to work closely with David King, Dean of Graduate Studies and Research at SUNY, Oswego and the other individual campuses of the SUNY system by serving as a

informational resource and providing feedback as they develop programs. Carol Lynch and Linda Strausbaugh, a member of the CGS PSM Advisory Board, participated in the workshop on October 23, 2009 discussing many facets of developing PSM programs, including the role of Employer Advisory Boards, developing and evaluating PSM internships, PSM program recruiting and marketing strategies, registering PSM Programs and assessment strategies. David King will participate in a pre-meeting workshop on the PSM at the 2009 annual CGS meeting in San Francisco in December.

Mid-Atlantic HBCU Professional Science Master's Alliance – CGS continues to provide guidance and organizational support from the CGS PSM team to the Mid-Atlantic HBCU PSM Alliance. The group secured a planning grant from the Alfred P. Sloan Foundation and recently was told that their implementation grant proposal has been approved for funding.

Florida - The CGS PSM team continues to work closely with Patricia Bishop who is leading the state-wide PSM initiative in Florida. Patricia will be presenting at a pre-meeting working at the 2009 CGS annual meeting, held in December in San Francisco on the state-wide initiative in Florida.

Oregon –Carol Lynch made a presentation at the Oregon PSM statewide meeting on September 17-18, 2009. The meeting, organized by Ursula Bechert, went very well and was well attended not only by representatives from higher education institutions in Oregon, but also representatives from Washington State University and industry representatives. Sloan funding for the PSM state-wide initiative in Oregon has been very helpful in developing programs in the state.

Federal/Agency/Media Relations and Policy Initiatives

The CGS PSM team continues to work with Patty McAllister and her CGS Government Relations staff to advocate for the PSM. As part of their outreach efforts to federal government departments and agencies, the CGS PSM team has met with representatives from the Departments of Homeland Security, Education, Energy, and National Institutes of Health. Further meetings are contemplated with representatives from other departments and agencies, including the Department of Labor and the Office of Science and Technology Policy.

CGS also continues to work with Peter Henderson, Study Director of the NRC committee that explored the role of master's education in the natural sciences, culminating in the release of their report, *Science Professionals: Master's Education for a Competitive World* in promoting the report. Rita Colwell, chair of the NRC committee that produced the report, will be a featured speaker at the 2009 PSM biennial meeting

Department of Homeland Security – Carol Lynch and Michael Teitelbaum continued their follow-up with DHS to discuss how DHS might be of help in developing programs, with a phone call on July 13, 2009. Further follow-up is anticipated, especially outreach to universities which have both PSM programs and DHS Centers.

Department of Education – Carol Lynch and Patty McAllister met Steve Robinson, Special Advisor to the Secretary at the Department of Education on June 25, 2009 as part of the CGS

PSM team outreach to the federal government to discuss the PSM and see how we all can work together to assure that employers have a sufficient STEM workforce that allows America to remain competitive. He noted that communication and information technology has great needs and should be a PSM priority.

Department of Energy – Carol Lynch and Patty McAllister met with Bill Valdez at the Office of Science at DoE on July 28, 2009 to discuss the PSM and invite him to participate in the PSM biennial conference on November 5-6, 2009. He agreed to speak and collaboration is continuing.

National Institutes of Health – Eleanor Babco arranged a meeting at CGS for the PSM team and Patty McAllister with Wally Schaffer, Office of the Director, Extramural Research, Rod Ulane, Research Training Officer, and Jennifer Sutton, Director of Training Program Evaluation on October 22, 2009 to discuss the PSM. While science master’s education at the NIH is not specifically “in the cards” right now, it was agreed that communication would continue since there may be areas where cooperation/collaboration can occur. NIH representatives suggested that CGS contact both the Division of Minority Opportunities in Research Program at NIGMS and Division of Extramural Programs at the National Institute of Medicine to discuss avenues of possible collaboration on the PSM.

National Governor’s Association - Carol Lynch continues to work with Erin Lamos of the NGA as they follow up with the states who attended the NGA Center for Best Practices Policy Academy: State Strategies to Meet Emerging Workforce Needs Through the Professional Science Masters Program. The second follow-up state-wide meeting in Oregon was held on September 17-18, 2009 and Carol Lynch participated (see above).

National Conference of State Legislatures - The CGS PSM team works closely with the NCSL as they plan their major PSM activities. Eleanor Babco participated in a conference call on August 14, 2009 with Heather Chikoore of NCSL and Chris Hayter and Erin Lamos from NGA to discuss plans for their upcoming workshop. NCSL will hold a meeting in San Diego in December 2009 where key legislators from six states will be invited to hear from PSM experts and education leaders in the states. National and state experts will be engaged to present information on the benefits and trends of the PSM degree. Carol Lynch will be presenting at the conference. Heather Chikoore is moderating a session at the 2009 biennial meeting on state PSM initiatives and was instrumental in securing Senate Majority Leader Richard Devlin of Oregon as a speaker.

Other Outreach Activities

National Council for Science and the Environment – The PSM team met with Andy Jorgensen from NCSE on May 13, 2009 to discuss the possibility of NCSE leading the effort to develop PSMs in climate solutions science. This resulted in Carol making a presentation on the PSM at the 2009 Summer Program Conference of the Council of Environmental Deans and Directors noted above.

Bio International Conference – Carol Lynch worked with Joan Bissell, California State University, to secure speakers for a session on the PSM which was held at the BIO International

Conference in Atlanta on May 20, 2009. Two members of the CGS PSM Board, Scott Winston and Linda Strausbaugh, and former member Jung Choi participated in the session, deemed a “must-attend” session and thus well attended. Additional support was provided by Executive Director Stephen Lemire of NPSMA.

Queens University – Carol Lynch did a one-day consultation on the PSM on June 24, 2009 at Queens University, Kingston, Ontario Canada. The meeting included a presentation and extensive discussions with faculty and deans. Queens may develop some graduate certificates first to “test the waters”.

Collaboration and Communication

SACNAS - As part of the national recruitment effort, CGS again secured a booth at the Society for Advancement of Chicanos and Native Americans in Science (SACNAS) conference from October 15-18, 2009 in Dallas, Texas, and arranged for two PSM directors to attend and staff the booth –John Nishio from California State University, Chico and Alice Wright – California State University - Fresno. Additionally, a proposal to have a session at the SACNAS conference was submitted by John Nishio and Alice Wright and accepted. As previously, the CGS PSM team is collecting recruitment materials from PSM programs for distribution at the conference and CGS will provide key chains with flashlights and the PSM logo for distribution to those stopping by the PSM booth.

PSM Conference Calls – Since July 2008, monthly calls, which are organized by Michael Teitelbaum at the Alfred P. Sloan Foundation, provide opportunity for organizations leading the PSM initiative to be appraised of what everyone is doing. Participants include Carol Lynch and/or Eleanor Babco of CGS, Heather Chikoore of National Conference of State Legislatures, Erin Lamos from the National Governor’s Association, Stephen Lemire and Ursula Bechert of the NPSMA, Joan Bissell from the CSU system, Don Langenberg, and Sheila Tobias. Nancy Vincent prepares and distributes notes from these calls.

NPSMA – CGS continues to work with NPSMA providing assistance and advice in addition to jointly hosting regional meetings. Nancy Vincent of the CGS PSM team and Stephen Lemire of NPSMA have a monthly conference call to keep each organization apprised of their activities and plans and attends the quarterly workshop sponsored by NPSMA and reports on CGS activities. Eleanor Babco worked with Sheila Tobias to produce the survey instrument for both the enrollment and degrees survey and the career outcomes survey (both already published).

PSM Listserv – The CGS team continues to use the PSM listserv to provide regular detailed updates of PSM activities to all programs and to solicit feedback. From our last report until this one, CGS used the listserv many times, including:

- Notified all program directors/coordinators several times to register for the Sixth Biennial Meeting. It appears that a minimum of 175 will attend this meeting. (Actual pre-registration was 204.)

- Notified all program directors/coordinators several times of a “call for papers” and a “call for posters” for the 2009 PSM biennial meeting. Six papers were selected: two each in *Financial Models for Program Sustainability, Ethics and the PSM, and Recruiting Students and Marketing the PSM Program* which will be presented at the meeting. A total of 26 posters were also accepted for the poster session.
- Provided information on access to a Question and Answer Session and a PowerPoint presentation by Dr. Myles Boylan, NSF Program Officer, regarding the Science Master's Program (SMP) NSF Program Solicitation. This webcam was organized by the CSU system.
- Asked program directors/coordinators to nominate exemplary PSM graduates for a panel to be presented at the 2009 PSM biennial meeting as well as to be featured in the Proceedings from that meeting. Five alumni were selected for the Panel.
- Notified program directors/coordinators of a special advertising rate in “Careers and Graduate Programs for BS/MS Scientists,” provided by *Science Careers*. This allows PSM programs to promote their graduate programs to qualified scientists at the nation’s top universities at this special rate.
- Sent information about the goal of the PSM listserv, which is to provide a forum for program directors and members of the PSM community to discuss relevant issues. In addition, this dedicated discussion board serves as a vital link between CGS and the programs in disseminating information about current legislation, funding opportunities, new programs, conferences and workshops, and other activities and information that might be of interest. CGS is uniquely situated in Washington, D.C. and with its very active government relations division is able to keep up on events that may impact the PSM initiative.
- Provided information on the proposed US Department of Energy (DOE) budget for Fiscal Year 2010 which would, if approved, create a new “REgaining our ENERGY Science and Engineering Edge (RE-ENERGYSE)” program. \$80 million would be allocated to a “higher education” program that would include competitive awards to develop approximately four “Clean Energy University Collaborations,” each offering a master’s degree in Interdisciplinary Energy Studies. The budget document states: “This activity would support the development of professional science masters programs, specifically dedicated to clean energy studies.” However, this was not funded.

Many participants also used the listserv to connect with other PSM deans, program directors, and faculty.

Media Coverage – Eleanor Babco, Sheila Tobias and Josh Mahler wrote an article entitled *Professional Science Master’s Update: The Internship Component* which was the lead article in the July 2009 issue of *The Communicator*.

The CGS PSM team, in collaboration with Stuart Heiser, Manager, Government Relations and External Affairs for CGS, wrote letters to the editor for the *Boston Globe* and the *New York Times*. Don Langenberg, chair of the CGS PSM Advisory Board, submitted the letter to the *New York Times* and it was published.

Promotional Materials – A new informational flyer on the CGS Professional Science Master’s Initiative was produced under the lead of Nancy Vincent. This describes the many activities that the CGS PSM team is engaged in to carry out its goal of making the PSM a regular feature of graduate education. Additionally, the CGS PSM team continues to distribute the three flyers on the PSM (one for students, one for employers and one for policymakers). Bulk copies of each of these flyers are distributed to the program directors of all newly approved PSM programs. All flyers are also available electronically from the sciencemasters.com website.

A specialized flyer on PSM programs in the environmental sciences was produced under the leadership of Josh Mahler. It was utilized at the Council of Environmental Deans and Directors Climate Solutions Curriculum Workshop entitled **Developing a new Professional Masters in Climate Solutions Science** on July 7, 2009. It is available on the sciencemasters.com website.

In addition, Josh Mahler of the CGS staff, maintains and regularly updates other areas of the sciencemasters.com website.

Future Activities

The CGS PSM team produced a proposal and submitted in to the Alfred P. Sloan Foundation to develop a more formal future process for PSM affiliation/certification/accreditation. The project was funded and work will begin soon under the lead of Nancy Vincent.

The next meeting of the CGS PSM Advisory meeting will be held on November 7, 2009, immediately following the 2009 PSM biennial program directors meeting.