



The Professional Science Master's: How to Catalyze Success Introduction

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Professional Science Master's (PSM) Degree

An innovative degree that:

- Prepares graduates for science careers in business, government, or non-profit sectors.
- Combines rigorous study in science or mathematics with workforce skills-based coursework in business, management, policy, communications, law, etc. - “Science Plus!”





PSM Programs...

- Emphasize the written and verbal communication skills, leadership, and team-building required in professional settings.
- Include project or team experience vs. thesis: real world experience.
- Provide connections to potential employers through internships.
- Often include cross-disciplinary courses.

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What else is it? Technical Leadership Development

- Technical depth and leadership skills are hard to find in one person, but essential in many employment areas (director/manager in technical and financial fields).
- PSMs produce technically knowledgeable leaders.
- Needs for such people increase with complexity.
- This is vital for US global competitiveness.





Guidelines for a PSM Degree

- Total credits equivalent to a standard master's degree .
- Majority of program course work in graduate-level science and/or mathematics courses.
- Professional skills component developed in consultation with prospective employers.
- Professional skills are usually enhanced by internships and problem-based projects sponsored by employers.
- Employer advisory board engaged.
- Formal recognition currently granted by CGS.

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How many? >150 PSMs, >75 institutions, 24 states

- In the first 6 months of 2009 CGS approved 50% more PSM programs than in all of 2008.
- Over 100 additional programs are in some stage of approval or planning.

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PSM in Federal Legislation

America COMPETES Act:

- Contained authorization for a PSM clearinghouse and grants program at the National Science Foundation.
- Signed into law in August 2007.
- Funding up to \$15 million authorized.

ARRA appropriated \$15 to NSF for PSM.





Other agencies with interest:

- Dept. of Education – last year FIPSE had invitational priority for PSMs.
- Dept. of Homeland Security – working with CGS to interest DHS Centers of Excellence to develop PSMs.
- Dept. of Energy – submitted request for PSM funding as part of “RE-ENERGYZE”.
- Dept. of Labor – through regional agencies.





National Research Council Report Supports PSM

NRC report recommends “concerted action to accelerate the development nationally of PSM education” including:

- Expand beyond the NSF to other federal science agencies.
- Encourage states to endorse PSMs.
- Philanthropic institutions should continue to play role in creating and sustaining PSMs.





National Research Council Report Supports PSM (con't)

- Professional and industry associations should include PSMs in their higher education strategies.
- Higher education should support development of PSMs and seek employer partners.
- Employers should partner with higher ed institutions to create and sustain PSM programs.





PSM Expansion Initiatives – Systems and States

- **North Carolina** – Currently, 5 campuses have 7 PSM programs, with more coming.
- **Cal. State System** – 18 programs (6 from previous CGS/Sloan master's focused initiative) with more under development.





PSM Expansion Initiatives

- **University of North Texas** – 3 PSM programs were developed at the flagship campus at Denton.
- **University of Illinois** – 3 PSM programs at Urbana-Champaign with more planned.
- **SUNY** – 5 PSM programs on 3 campuses (3 in existence from first Sloan grants), with 24 planned on 16 campuses).
- **Rutgers, the State U. of New Jersey** – 9 PSM programs going through approval process and 5 under development.

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Expansion Initiatives (planned)

- **NGA PSM Policy Academy** resulted in initiatives in various stages in 5 states (NM, AZ, VA, PA, OR).
- **Florida** (5 PSM programs) planning multiple programs as part of regional economic development.
- **Massachusetts** – Four of the five campuses in the UMass system, Boston, Dartmouth, Lowell and Amherst are moving forward with PSMs.





HBCU Mid-Atlantic PSM Alliance

9 Charter Members:

Bowie State, Delaware State, Howard, Morgan State, Norfolk State, U. District of Columbia, U. MD Eastern Shore, Virginia State, American U. (associate member).

16 PSMs planned (American has 3).





Summary

Win, Win, Win

- Win for the student – alternative way to remain in science without getting a PhD.
- Win for the university - provide students with another career option and help solve community workforce needs.
- Win for the employers – local, regional, state – have a technically trained cadre of workers.





Speakers

- David King – SUNY Oswego
- Patricia Bishop – U. Central Florida
 - How to organize large-scale initiatives.
- Eleanor Babco – CGS
 - Variation in internships.
- Sally Francis – Oregon St. U. and CGS
 - Creative funding sources and sustainability.





For more information: contact the CGS PSM Project Team

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