Growing the Professional Science Master's: Introduction

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Professional Science Master's - What is it?

A new kind of degree that:

- Prepares graduates for work—outside academia—involved in applications of discipline.
- Combines technical competencies with workforce skills, e.g. management, policy, communications, law – "Science Plus!"
- Leads to a wider variety of career options than provided by traditional graduate programs.

How is the PSM different?

- More advanced science/math than MBA.
- Often interdisciplinary.
- More professional skills (business, law, communication) than PhD.
- Connections with potential employers (internship).
- Project or team experience vs. thesis: real world experience.

Professional Science Master's Degree - Why?

Gap in U.S. Science Graduate Education

- Strong: Bachelors, PhDs in science.
- But BA/BS insufficient for science career.
- PhD too long, with uncertain prospects.
- Attractiveness of PhD declining among domestic students; < 20% of majors continue in science/math graduate programs.

PSM – Why?
Science Students Ask:

- If I take time to obtain an advanced degree, will I be able to enter my chosen profession?
- Can I aspire to a level of compensation roughly comparable to my peers in other professions?
- Is a career in science compatible with “having a life”?

PSM – Why?
Employers Views:

- Many need PhDs, but not in large numbers
- Do want advanced science skills,
- PLUS…
  - Interdisciplinary teamwork, flexibility
  - Project management
  - Computational skills
  - Communication ability
  - Basic business skills
  - Ethics
  - Regulatory issues

How Do Employers Help?

- Advise PSM faculty
- Mentor PSM students
- Tuition for employees
- Internships
- Prospective employers
- Champions re: regional economic development

PSM - History

- 1997 Sloan Foundation initiative for research universities.
- 1997 Keck Foundation initiative – Keck Graduate Institute.
- 2001 Sloan-CGS partnership for “Master’s Focused” institutions.
- 2006 Sloan-CGS “institutionalization” initiative.

The CGS/Sloan PSM Initiative

- The CGS project consolidates multiple PSM activities under the CGS umbrella.
- Goal: “The institutionalization and promotion of the PSM degree as a regular feature of graduate education.”
- We expect to achieve the following objectives:
  - Continuation and improvement of existing PSM programs.
  - Encourage and assist the development of new PSM programs.

The CGS/Sloan PSM Initiative

- Significant increase in the number of students enrolled in all PSM programs.
- Expansion of funding by NSF and other agencies to include PSM programs.
- Increase in the number and variety of employment sector champions of the PSM.
- Support of states through work with NCSL and NGA
- Advocate for PSM in federal legislation.

Why Should You Consider Establishing PSM Programs?

- The bulk of the new jobs being created are in the non-academic sector; these programs prepare students for employment in non-academe.
- Most universities have a commitment to outreach. PSM programs fit perfectly as they provide well-educated graduates who will apply their skills to endeavors within the state.

Why Should States Consider Supporting PSM Programs?

- Because master's graduates typically are a less mobile group than PhD recipients.
  - About two-thirds of S&E master's degree graduates were employed in the state in which they earned a degree.
  - About one-fourth of S&E doctorate recipients plan employment in the state in which they earned their PhD
- PSM programs are more popular with women than traditional master's programs in Natural Sciences.

Summary

- Win, Win, Win
  - Win for the student – alternative way to remain in their field 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

Looking to the Future – three perspectives

- Sloan Foundation: Scale-up and Sustainability.
- California State University: System-wide initiative.
- Involved Employer's Perspective: Support and Expand the Programs.

Speakers:

- Michael Teitelbaum
  Vice President, Alfred P. Sloan Foundation

- Keith Boyum
  Associate vice Chancellor, Academic Affairs, California State U. System

- Phil Tuchinsky
  Technical Expert, Infotronics and System Analytics,
  Ford Motor Company (ret.)

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Council of Graduate Schools www.cgsnet.org and www.sciencemasters.com

PSM PROFESSIONAL SCIENCE MASTER'S