THE ROLE OF MASTER’S EDUCATION IN REGIONAL ECONOMIC DEVELOPMENT

The PSM: A Response to Employer Needs

James D. Sterling
Faculty Director of PSM Office
Keck Graduate Institute

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The Professional Science Masters’ (PSM) Degree

- An innovative graduate STEM degree designed to prepare students for a variety of career options in business, government and non-profit organizations.

- Combines advanced coursework in an emerging and/or interdisciplinary field with an appropriate array of professional skills and experiential learning components.

- Highly valued by employers and prepared to progress toward leadership roles to provide the workforce that is critical to the development of a globally competitive economy.
Professional Skills & Industry Context

- Team Players
- Effective Communicators
- Versatile Business Professionals
The Professional Science Masters Program reached its 300th affiliated program in 2013. In 2014, we are 322 programs strong at 152 universities.

1997: Beginning in 1997, the Sloan Foundation makes grants to 14 research universities to support the founding of programs in the natural sciences and mathematics, followed by a targeted bioinformatics set of programs at another 12 research institutions.

2001: A Sloan grant to the Council of Graduate Schools (CGS) extends the PSM Initiative to master's-focused institutions, which award 40% of science/math master's degrees and where faculty are heavily invested in high quality master's education.

2006: The Council of Graduate Schools, seeking to improve and advance graduate education, assumes primary responsibility for supporting and expanding the Sloan Professional Science Master's (PSM) initiative, with the goal of making it a regular feature of high quality U.S. graduate education.

2007: The National Professional Science Master's Association forms to engage businesses, industries, nonprofit organizations, government agencies, and professional associations in the development of PSM degree programs and with internship and job placement for PSM degree program students and graduates.

2011: The number of PSM programs expands rapidly as university systems in California, North Carolina, New York, Florida, and New Jersey implement system-wide PSM initiatives.

2012: Responsibility for PSM Affiliation and curation of the sciencemasters.com webpage transfers from the Council of Graduate Schools to a newly-established National PSM Office that is hosted at Keck Graduate Institute.

2013: Our 300th program.

2014: 322 programs at 152 universities.

"PSM graduates understand the contribution of STEM knowledge to real issues. They will become the leaders in innovation that will spur the next generation of economic development."

Dr. James Moran, Vice Chancellor Pennsylvania State System of Higher Education (PASSHE)
Carnegie Classifications for PSM Programs (n=322)

- Research Universities, Very High Research Activity (RU/VH): 127
- Research Universities, High Research Activity (RU/H): 64
- Doctoral Research Universities (DRU): 22
- Master's L: Master's Colleges and Universities (larger programs): 74
- Master's M: Master's Colleges and Universities (medium programs): 5
- Master's S: Master's Colleges and Universities (smaller programs): 10
- Other*: 20

* Includes Specialized Institutions, Special Focus Institutions, Baccalaureate Colleges, International, and Inter Campus programs at Rutgers University programs and two University of Massachusetts programs. These participating institutions have different Carnegie classifications.

Data as of October 17, 2014
<table>
<thead>
<tr>
<th>STEM field</th>
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<tr>
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<tr>
<td>Financial Mathematics</td>
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<tr>
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<tr>
<td>Industrial Mathematics</td>
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<tr>
<td>Medical-Related Sciences</td>
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<td>National Defense</td>
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PSM Office Charter

Mission is to provide

(i) Management of the PSM Affiliation and Re-Affiliation process. Guidelines & Definitions

(ii) Data collection and reporting of enrollment, degrees, and outcomes of PSM programs

(iii) Develop & manage national and international branding, marketing and support of the PSM initiative.
PSM Affiliation

- Apply to PSM Office at KGI through www.sciencemasters.com

- Review of Application
  - Two PSM office reviewers perform initial review
  - Contacts applicant for clarifications if needed
  - Internal conference on findings
  - External consultation sought if needed
  - Final determination made and communicated
  - Spirit of collaboration to help attain status - up to 1 year
Benefits of PSM Affiliation

- Listing on sciencemasters.com with program links and web analytics
- Support for communications, media, use of logos, and PR
- Comprehensive list of affiliated PSM programs w/map
- Materials and resources for students, employers, faculty, administrators, and policy makers
- PSM initiative news: stay connected
- New program development resources
- Affiliation and Re-affiliation process details
- Steering Committee of PSM national leaders representing all stakeholders with engagement of all stakeholders in PSM definition
- Outcomes & employment data: Historical documents
Guidelines for PSM Affiliation

1. Regional accreditation
2. Program goals & student learning outcomes
3. Minimum credits
4. Curriculum (>50% STEM, >20% Prof. Skills)
   - Disciplinary content
   - Professional Skills
   - Experiential Component
5. Quality assurance mechanism
6. Employer Advisory Board
7. Collection of annual data
# Program Definitions

<table>
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<tr>
<th>PROGRAM TYPE</th>
<th>PROGRAM #</th>
<th>FEE</th>
<th>MINIMUM CURRICULUM OVERLAP</th>
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<tr>
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PSM Marketing Resources
Websites, Annual Surveys, Flyers, Social Media, +Others

sciencemasters.com  psmmilestone.com  npsma.org
Professional Science Master’s
A Council of Graduate Schools Guide to Establishing Programs
NPSMA 6th National Conference
and Annual Members' Meeting
Crowne Plaza National Airport Hotel
Arlington, Virginia

November 12-13, 2015

"Professional Science Master's Programs:
The Vital Link between Higher Education and the STEM Workforce"

www.npsma.org