

THE ROLE OF MASTER'S EDUCATION IN REGIONAL ECONOMIC DEVELOPMENT

The PSM: A Response to Employer Needs

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July 12, 2015



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



300...

and counting!

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.

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.

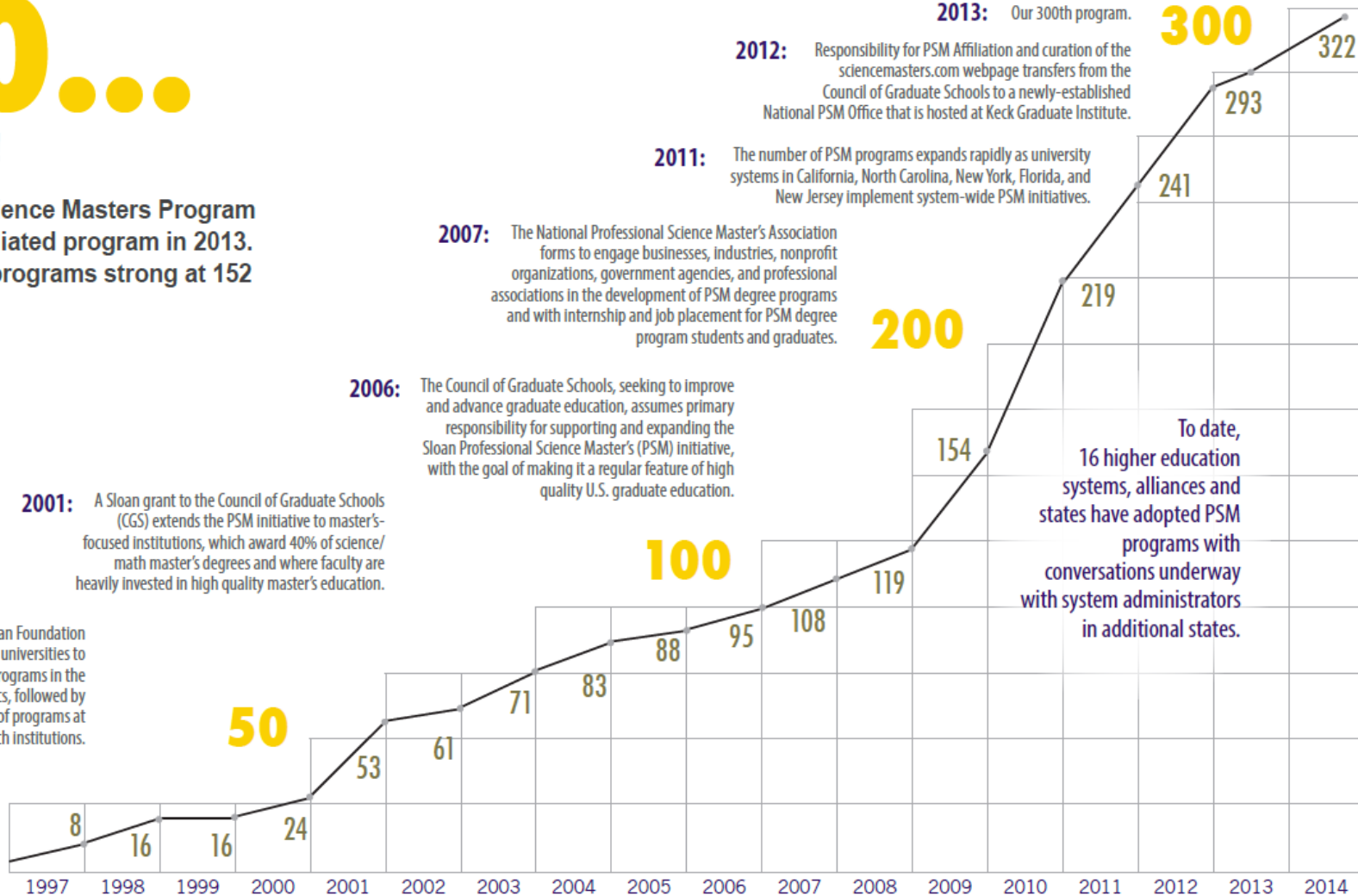
2006: The Council of Graduate Schools, seeking to improve and advance graduate education, assumes primary responsibility for supporting and expanding the Sloan Professional Science Master's (PSM) initiative, with the goal of making it a regular feature of high quality U.S. graduate education.

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.

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.

2013: Our 300th program.

2014: 322 programs at 152 universities.



To date, 16 higher education systems, alliances and states have adopted PSM programs with conversations underway with system administrators in additional states.

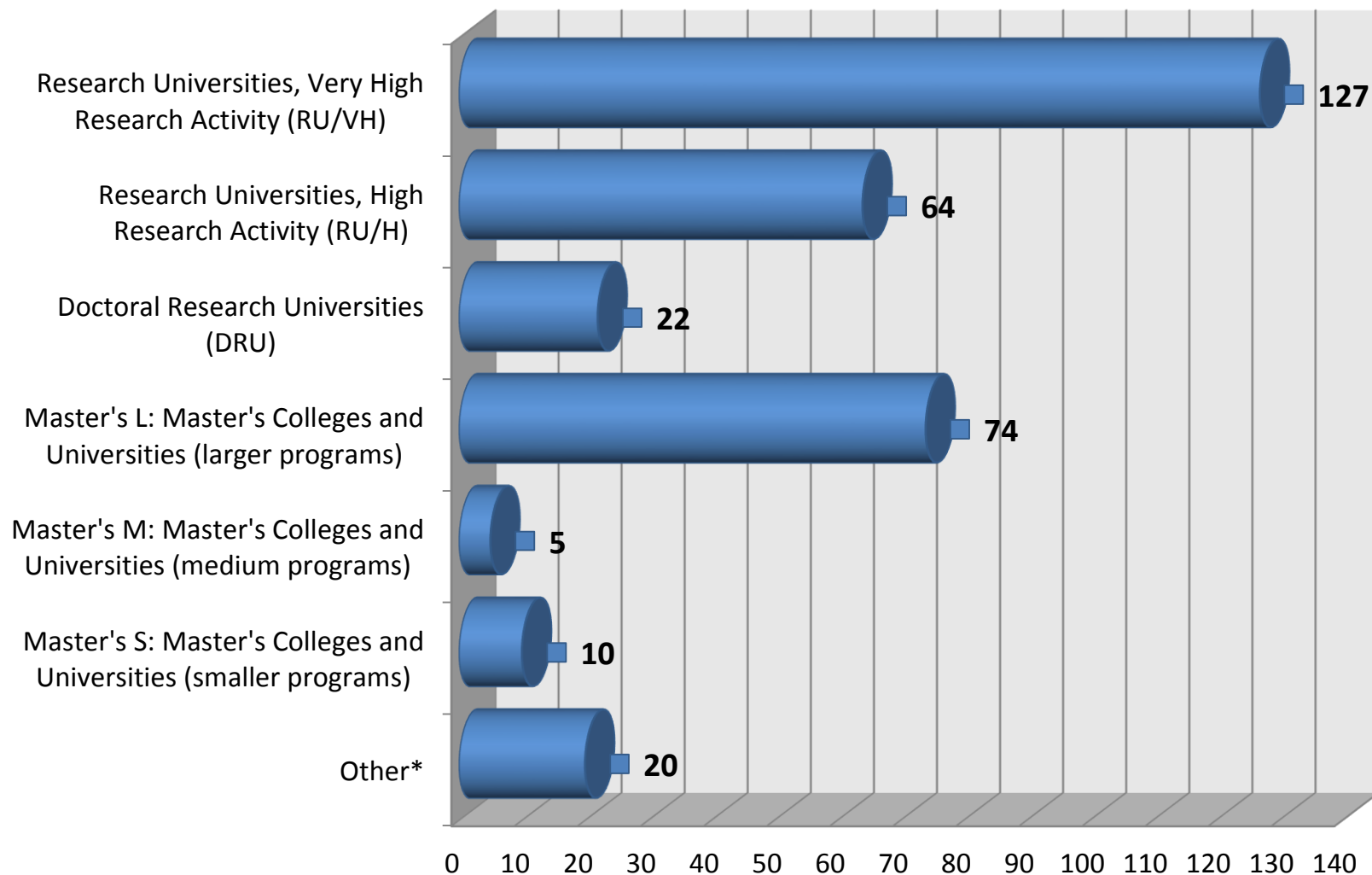
"PSM graduates understand the contribution of STEM knowledge to real issues. They will become the leaders in innovation that will spur the next generation of economic development."

Dr. James Moran,
Vice Chancellor
Pennsylvania State System
of Higher Education (PASSHE)

PSM PROFESSIONAL
SCIENCE MASTER'S



Carnegie Classifications for PSM Programs (n=322)



* 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 3

Respondent's STEM field of study (N = 632)

STEM field	N	%
Biotechnology	136	20.7
Bioinformatics / Computational	20	3.0
Pharmaceutical Sciences / Pharmacology	16	2.4
Other Biological Sciences	56	8.5
Chemistry / Chemical Sciences	8	1.2
Computer / Information Sciences	132	20.1
GIS / Remote Sensing	4	.6
Agriculture/ Natural Resources	15	2.3
Environmental Sciences / Climate Sciences	77	11.7
Earth / Atmospheric / Ocean Sciences	19	2.9
Energy / Power	5	.8
Forensic Sciences	7	1.1
Statistics / Biostatistics	23	3.5
Financial Mathematics	3	.5
Biomathematics	1	.2
Industrial Mathematics	13	2.0
Other Mathematics	53	8.1
Medical-Related Sciences	10	1.5
National Defense	7	1.1
Physics / Applied Physics	1	.2
Nanoscience	18	2.7
Other Interdisciplinary Science	8	1.2



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

PROGRAM TYPE	PROGRAM #	FEE	MINIMUM CURRICULUM OVERLAP
Standalone program	1	\$1500	<50%
Cluster of programs	1	\$1500	>50%
	2	\$1000	
	3+	\$500	
Program with tracks	1	\$1500	>75%
	2	\$750	
	3+	\$300	



PSM Marketing Resources

Websites, Annual Surveys, Flyers, Social Media, +Others

sciencemasters.com psmmilestone.com npsma.org

Enrollment and Degrees in Professional
Science Master's (PSM) Programs: 2013



PSM
PROFESSIONAL
SCIENCE MASTER'S

CGS
COUNCIL OF
GRADUATE SCHOOLS

Outcomes for PSM Alumni: 2013/14



PSM
PROFESSIONAL
SCIENCE MASTER'S

KGI
KECK GRADUATE INSTITUTE

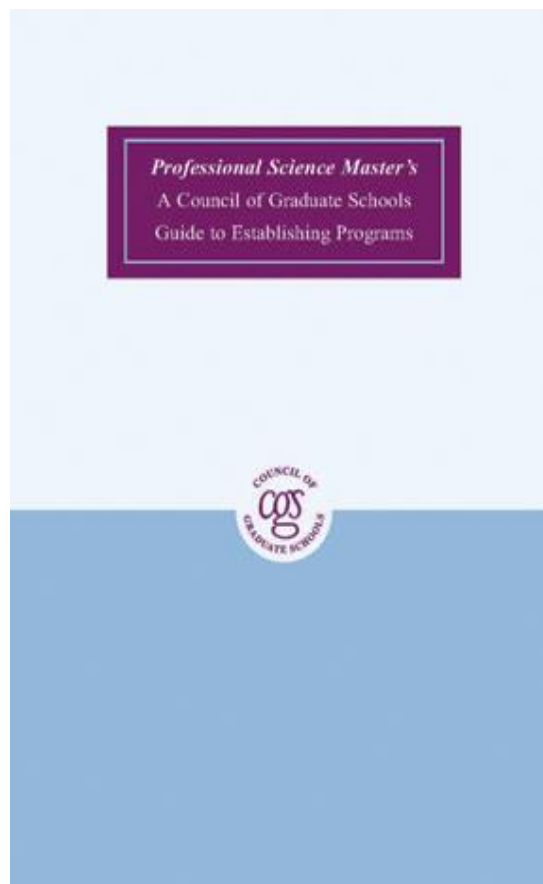
PSM
PROFESSIONAL
SCIENCE MASTER'S





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