

# Quality Assurance and the Professional Science Master's Degree

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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”

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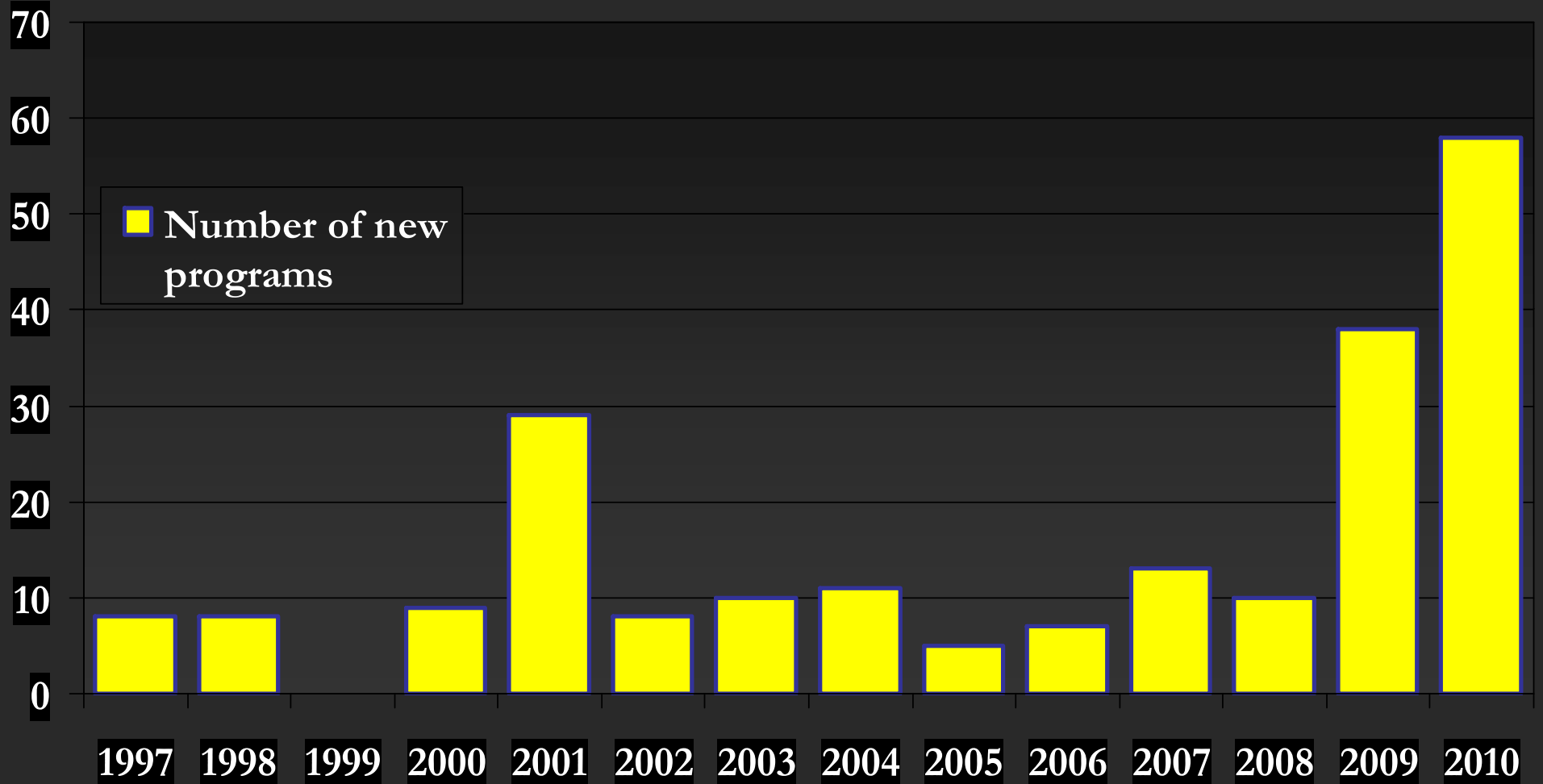


# PSM Programs...

- Emphasize written & verbal communication skills, leadership, & team-building in professional settings.
- Include project/team experience vs. thesis.
- Provide connections to potential employers through internships.
- Often include multi-disciplinary approaches.



# Number of *new* programs





# Locations of Domestic PSM Programs



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## Statewide Initiatives

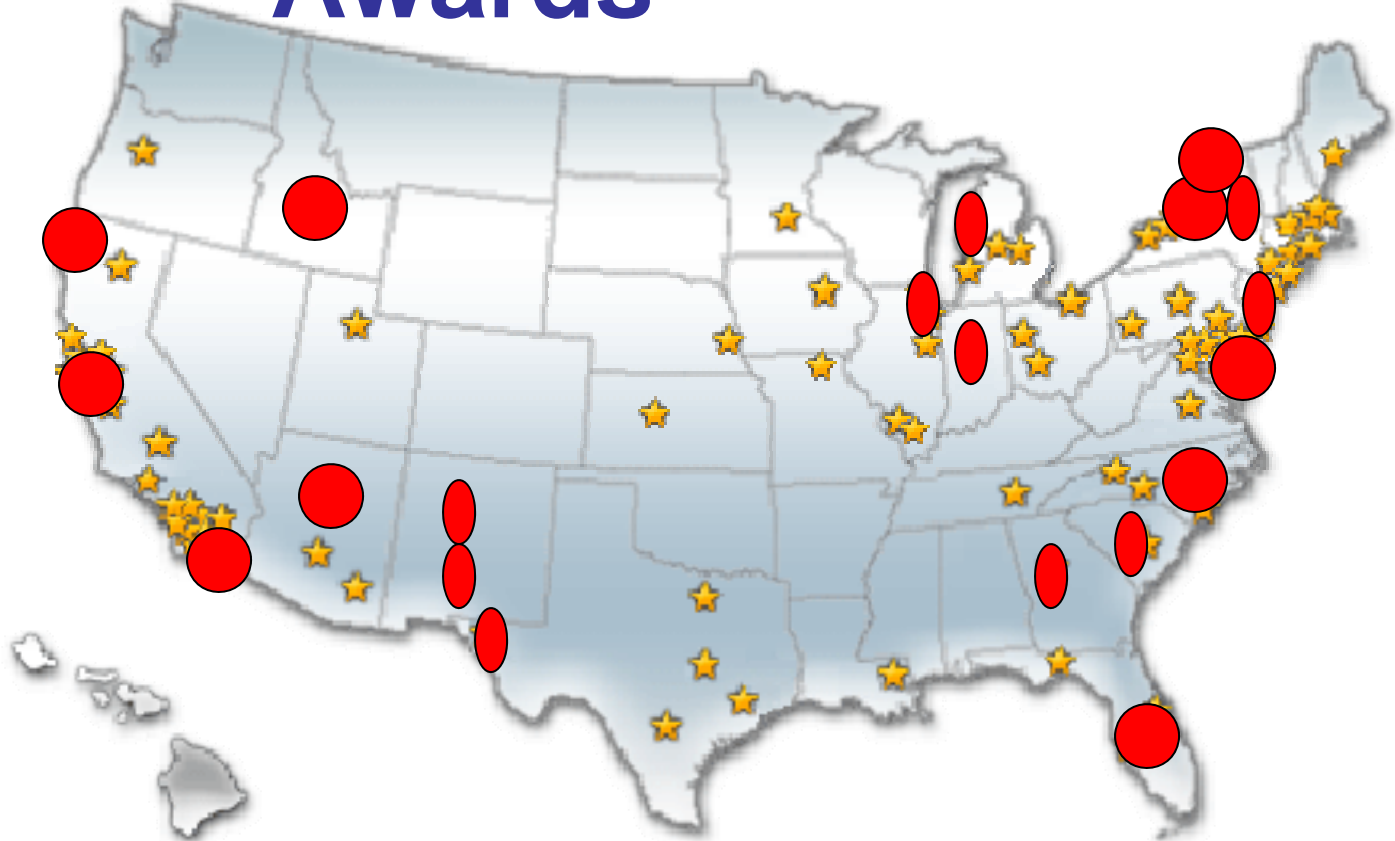
- Arizona
- California
- Florida
- HBCU Mid-Atlantic
- Massachusetts
- Minnesota
- New Jersey
- New Mexico
- New York
- North Carolina
- Oregon
- Pennsylvania
- Rutgers





# Locations of NSF SMP Awards

- Engineering
- Science



About 60% of SMP Awards are to NASH Members





# Why PSM?

- Prepares students for non-academic careers
- Takes 2 years
- Retains science students not interested in Ph.D.
- Offers more science and math than MBA & more professional skills than Ph.D. or traditional master's.
- Active employer connections







# Why Consider Establishing PSM Programs

- Bulk of new jobs in non-academic sector.
- PSM programs more popular with women & domestic students than traditional master's programs in natural sciences.
- Master's graduates are more likely to be employed in the state in which they earned a degree vs. Ph.D. graduates.
- Graduates contribute to workforce development through their ability to manage and grow science & technology based industries.

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# 3 Process Models for Academic Program Quality Assurance

**Internal Review**

**External Recognition**

**Accreditation**





# Management of Process

## Internal Review

Control lies within the institution

Usually managed by the graduate school

## External Recognition

Control lies outside the institution

Often managed by a disciplinary society

## Accreditation

Control lies outside the institution with an accreditor

Managed by:

- an independent org
- a collaborative
- a committee or council of a disciplinary assoc
- or other



# Overall Goal

## Internal Review

Enhance the quality of programs

Make resource allocation decisions

Recognize excellent programs

Identify programs that conform to best practices

## External Recognition

Varies

- may be to recognize quality programs

- may be to identify and make public programs that meet a defined set of best practices or standards

- may be to recognize quality by bestowing an excellence designation

## Accreditation

Regulate quality and effectiveness

Provide eligibility for external funds

Facilitate transfers among institutions

Eligibility compliance for individuals to gain licensure



# Standards of Accreditation

- Requires that program meets threshold standards such as:
  - Faculty
  - Curriculum
  - Student services
  - Libraries
- Accreditation granted only if institutions and programs provide evidence of fiscal stability





# Types of Accrediting Organizations

- ***Regional accreditors.***
  - Accredite public and private, mainly nonprofit and degree-granting, two- and four-year institutions.
- ***National faith-related accreditors.***
  - Accredite religiously affiliated and doctrinally based institutions, mainly nonprofit and degree-granting.
- ***National career-related accreditors.***
  - Accredite mainly for-profit, career-based, single-purpose institutions, both degree and non-degree.
- ***Programmatic accreditors.***
  - Accredite specific programs, professions and freestanding schools, e.g., law, medicine, engineering and health professions.





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## When is Accreditation Needed?

- For external validation of quality assurance and quality improvement
- For eligibility for federal aid for students
- For eligibility for state funding
- To insure transfer of courses
- For eligibility to sit for licensure examinations

**These are not the needs of PSM programs**





# What is Needed for PSM Recognition?

- Goals and Structure of the Program
- Type of Curricular Content
- Connection with the Community





# Elements of Recognition

- Regional Accreditation
- Goals of the Program
- Student Learning Outcomes
- Curriculum
  - Balance between Research and Professional Skills
- Structure
  - Degree
  - Certificate
  - Thesis or Non Thesis
  - Capstone
    - Internship vs. Project

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# Elements for Recognition

- Advisory Board
- Program Quality Assurance
  - Program Approval by University
  - Ongoing Program Review
- Collection of Annual Data





# Submission Process

- **Submission to CGS through website:**
  - [www.sciencemasters.com](http://www.sciencemasters.com)
  - Application Form
- **Steps in Review Process**
  - Two deans and one staff member review program
  - Lead dean contacts university for clarifications
  - Project team confers on findings
  - External consultation can be sought if needed
  - Final determination made and communicated

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# PSM PROFESSIONAL SCIENCE MASTER'S

ScienceMasters Home | PSM Overview | PSM Locations Map | PSM Program List | PSM Affiliation | PSM Biennial Meeting | NPSMA.org

Students

Faculty

Employers

Policy Makers

Employers are looking for science-trained professionals who possess science or mathematics knowledge as well as business fundamentals, project management, team-building, and communication skills. By earning a PSM degree, you can acquire these desired work skills and gain an advantage in today's increasingly competitive job market.



The Professional Science Master's (PSM) is an innovative, new graduate degree designed to allow students to pursue advanced training in science or mathematics, while simultaneously developing workplace skills highly valued by employers. PSM programs consist of two years of academic training in an emerging or interdisciplinary area, along with a professional component that may include internships and "cross-training" in workplace skills, such as business, communications, and regulatory affairs. All have been developed in concert with employers and are designed to dovetail into present and future professional career opportunities.

### SEARCH

### PSM PROGRAM STATISTICS

PSM Programs: **233**  
PSM-Affiliated Institutions: **110**  
*as of February 10, 2011*

### APPLY FOR AFFILIATION

**PSM AFFILIATION APPLICATION FORM**

[More Info on How to Apply for PSM Affiliation >](#)

[Frequently Asked Questions >](#)

### NEWS & UPDATES

"The other path: The professional science master's degree is growing in popularity but is losing its initial funding. Can it survive?." PSM featured in **Nature**. [More Info >](#)

"A Master's for Science Professionals Sweeps U.S. Schools." An article in **The New York Times** discusses the emergence of the PSM as a national fixture at many universities. [More Info >](#)



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# For more information: contact the CGS PSM Project Team

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[www.sciencemasters.com](http://www.sciencemasters.com) and [www.cgsnet.org](http://www.cgsnet.org)

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# Questions and Discussion



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