

***Sustainability of Scientific Society
Business Models: What is the
outlook for the future?***

**Dr. Catherine O’Riordan
American Institute of Physics**

**STM Annual US Conference 2016
Society Day**

My Society's Vision

- Staff and volunteers will work together to keep *My Society* membership essential.
- Programs will respond to the complex and changing environment.
- *My Society's* members will be recognized as world leaders in scientific research, teaching, and outreach.

Thriving

Relevant

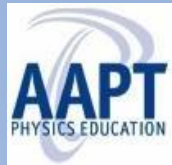
Growing

Vibrant

AIP Scope

As a federation of physical science societies, AIP offers programs, products and services that:

- Advance and distribute the knowledge of the physical sciences and its applications;
- Enhance and cultivate the physical sciences disciplines;
- Enable and foster collaborative efforts among stakeholders in the physical sciences; and
- Promote the physical sciences to the public, leaders, government officials, agencies, and the media.



AIP: An umbrella organization of physical science societies

AIP supports and promotes the physical sciences and their value to humanity.

10 Member Societies

(~119,500 combined membership)

AAPT American Assoc. of Physics Teachers (8,300)

AAPM American Assoc. of Physicists in Medicine (8,200)

AAS American Astronomical Society (6,800)

ACA American Crystallographic Assoc. (2,100)

Numbers rounded to the nearest 100

AMS American Meteorological Society (14,000)

ASA Acoustical Society of America (7,600)

APS American Physical Society (50,000)

AVS Materials, Interfaces, and Processing (4,200)

OSA The Optical Society (17,500)

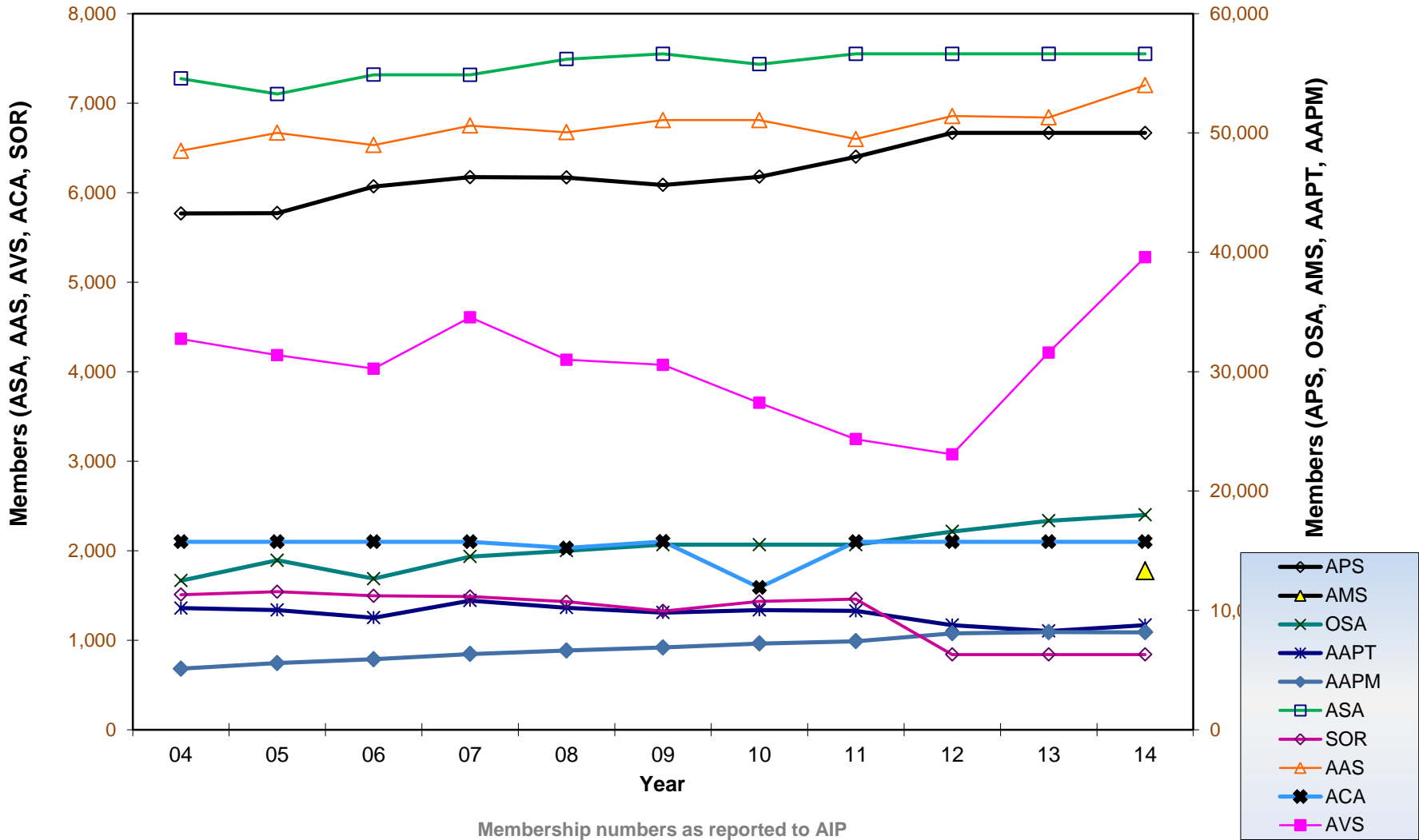
SOR Society of Rheology (900)

AIP fosters the scientific enterprise

Our Stakeholders:

A word cloud of stakeholder groups. The words are arranged in a roughly rectangular shape and vary in size and color. The colors include shades of blue, green, yellow, and brown. The words are: Public Media, Scientists, Educators, Students, Researchers, Affiliated Societies, Member Societies, Universities, Government Agencies, Physicists, Librarians, Industry, Engineers, Donors, and Colleges.

Member Society Membership Trends 2004 - 2014



AIP Member Society Characteristics

Members outside the US: 12 to 43%

Student members: 10 to 30%

About half the societies offer an early career membership

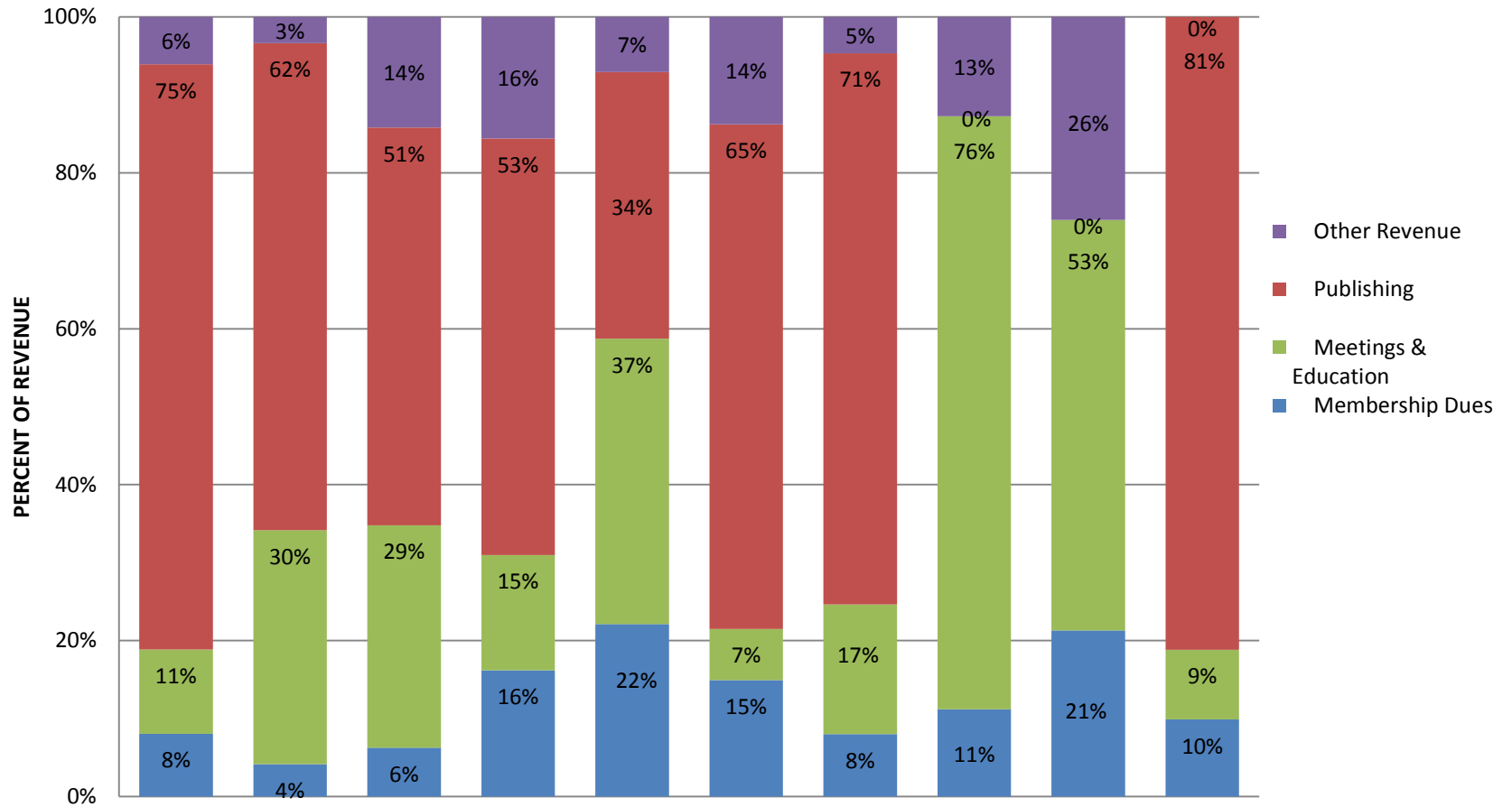
Operating expenses: \$500K to \$55M

Revenue from publications: \$0 to \$40M (0 to 81%)

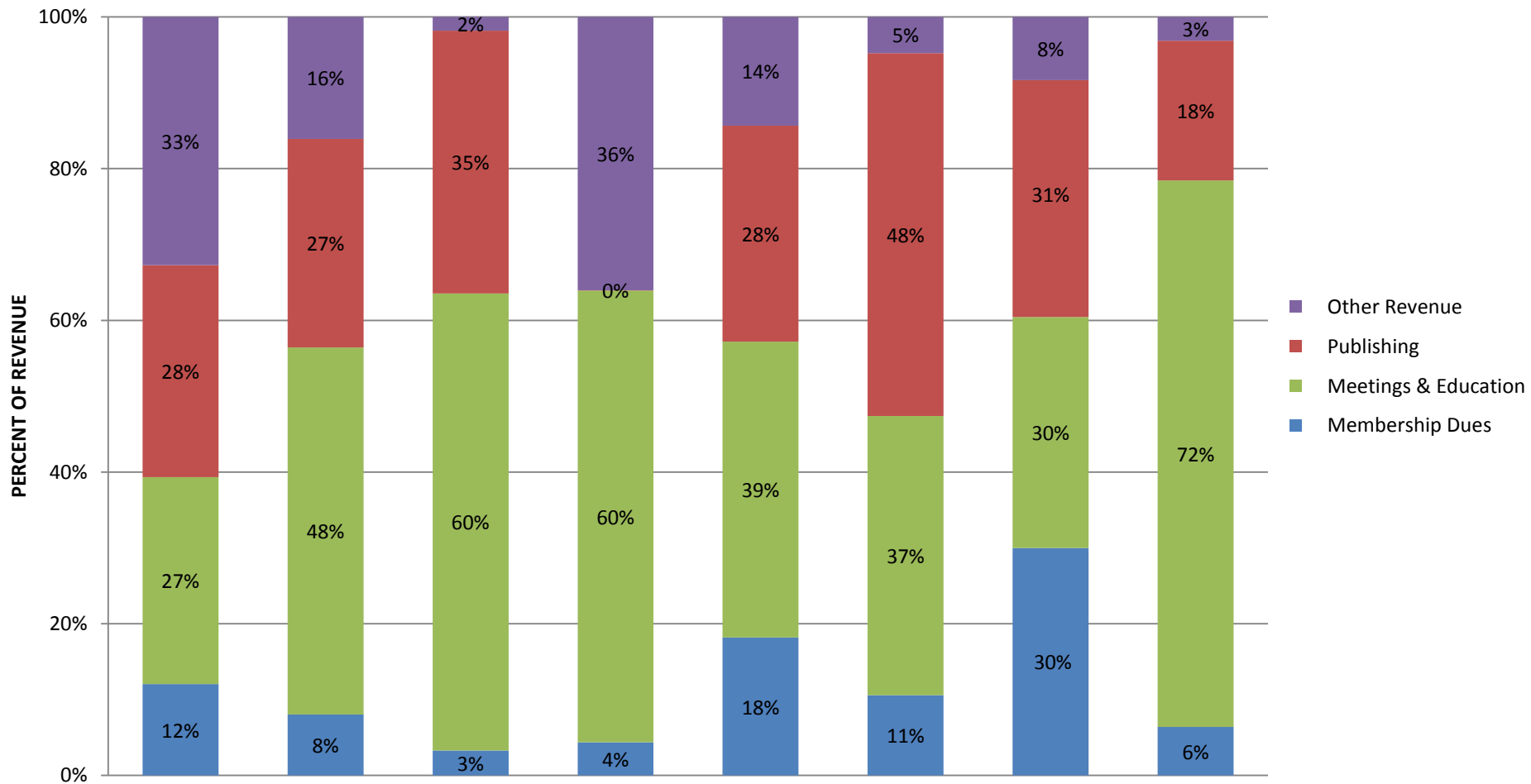
Employees: 0 to 260

Volunteers: 50 to 5,000

MEMBER SOCIETY OPERATING REVENUE



AFFILIATE SOCIETY OPERATING REVENUE



Primary Society Revenue

- Journals
- Meetings
- Dues – supports governance, advisory committees, and awards
- Reserves/endowments (donors)
- Grants/contracts

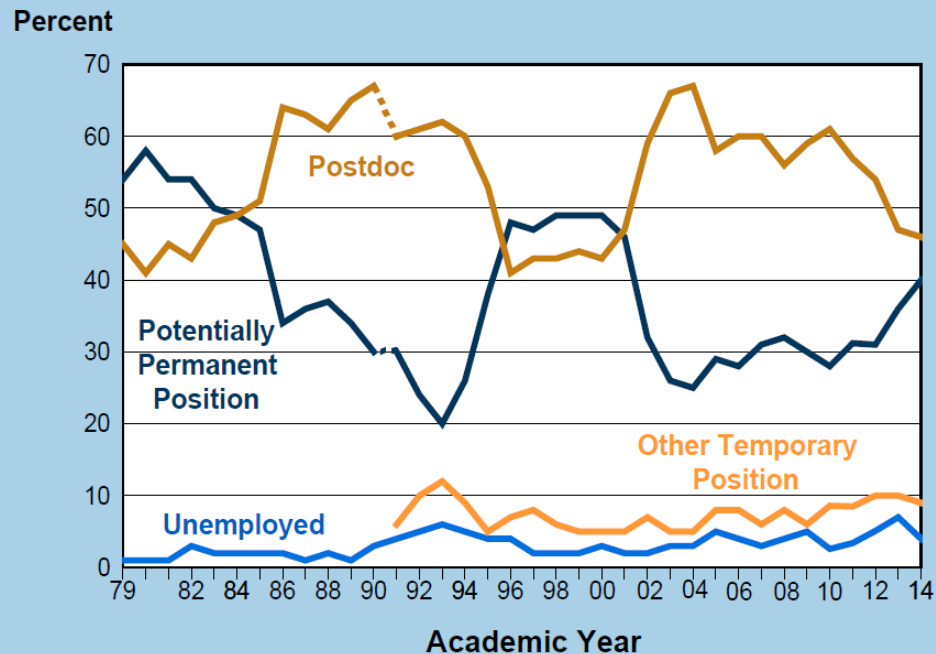
Additional Society Program Areas

- Education (cert., workshops, inclusion)
- Student services (career services, job boards)
- History programs
- Media promotion for meetings/journals
- Public outreach (news, events)
- Magazines/newsletters
- Government Relations/public policy
- Industrial outreach

More PhD physicists accepting potentially permanent positions; fewer taking postdocs

- Fewer than 50% of new physics PhDs accepted postdocs in 2013 & 2014
- Lowest level in over a decade
- Number of physics PhDs granted in 2014 (1,803) was an all-time high

Initial Employment of Physics PhDs, 1979 through 2014.



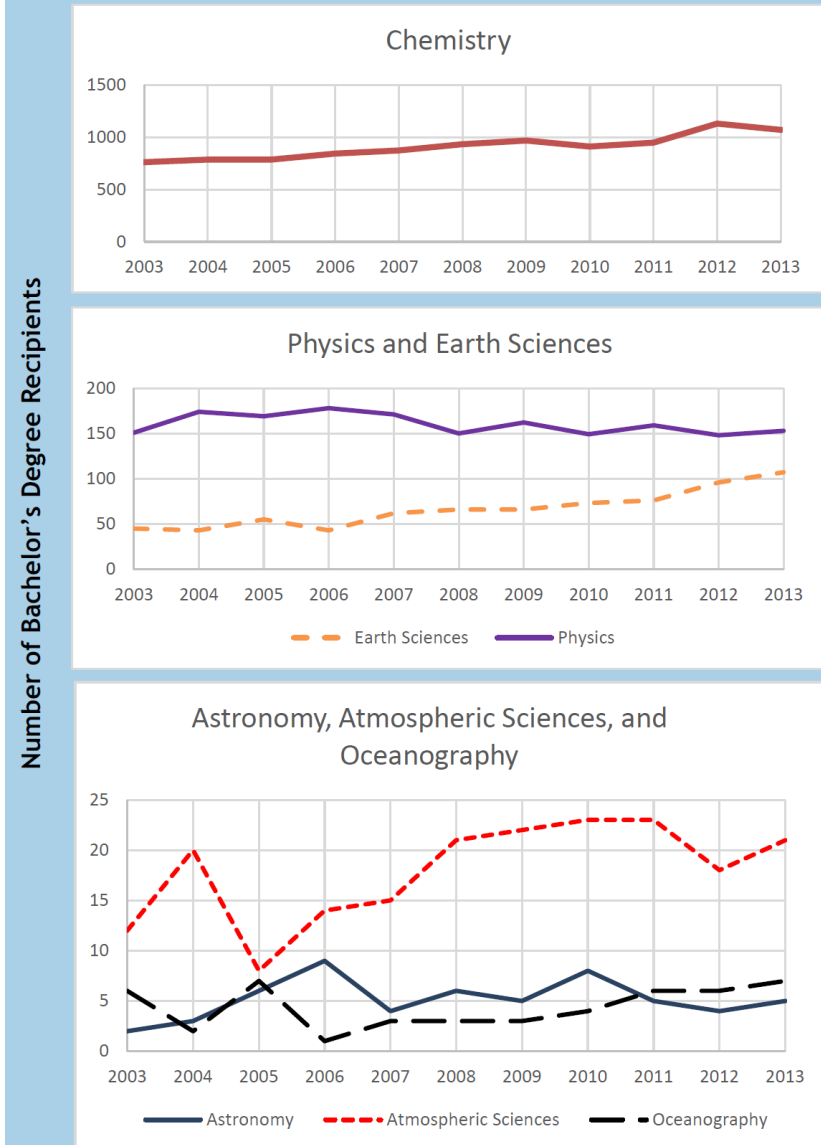
In 1991, the survey questionnaire was changed to measure "other temporary" employment as a separate category. Data are limited to PhDs who earned their degrees from a US university and remained in the US.

www.aip.org/statistics

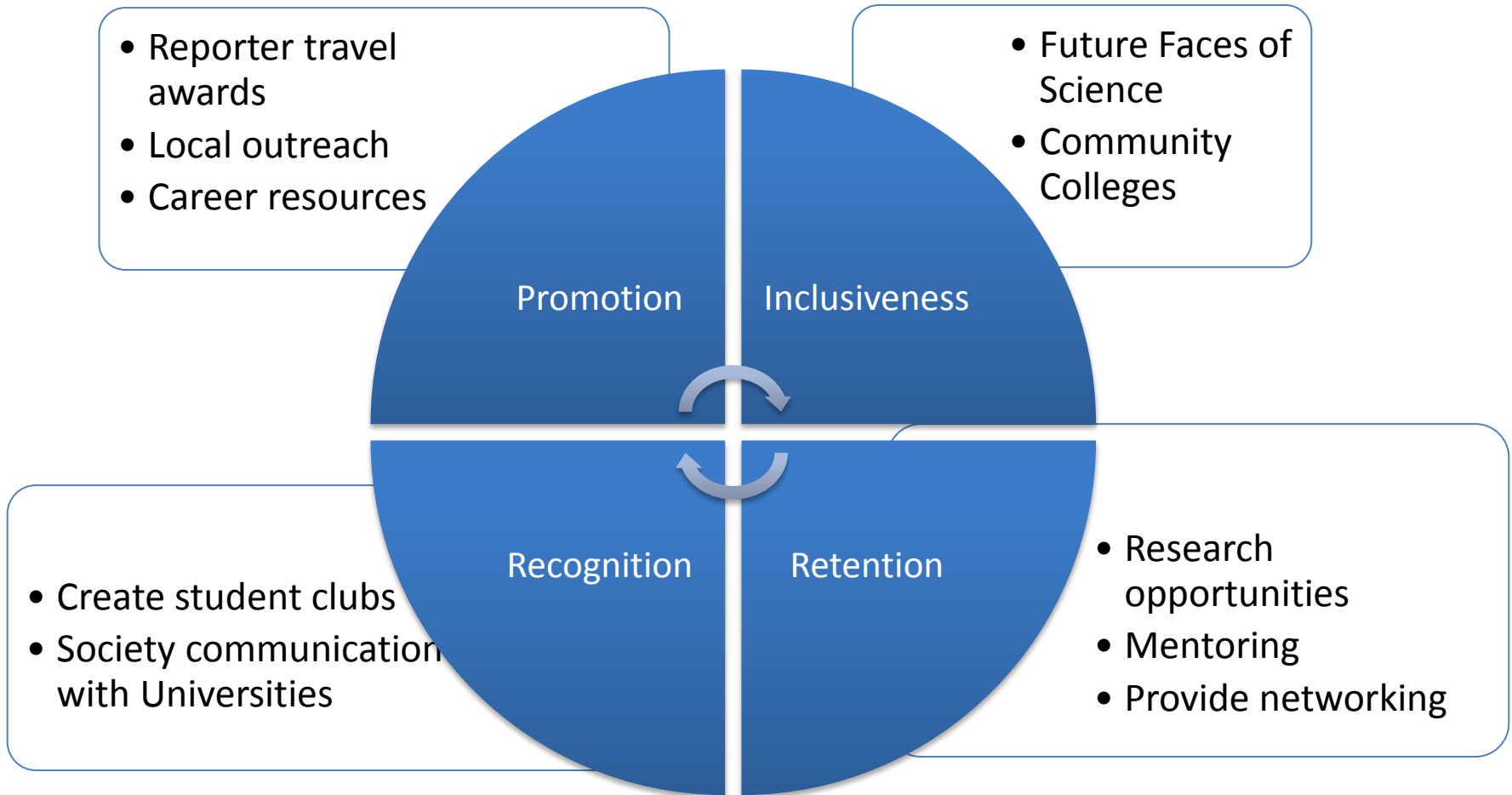
African Americans earning physical science degrees

- The number of physics bachelor's degrees earned by African Americans has been stagnant at ~150 since 2003.
- Fewer than 40 African Americans earned in bachelor's degrees in astronomy, atmospheric sciences, or oceanography in 2013.

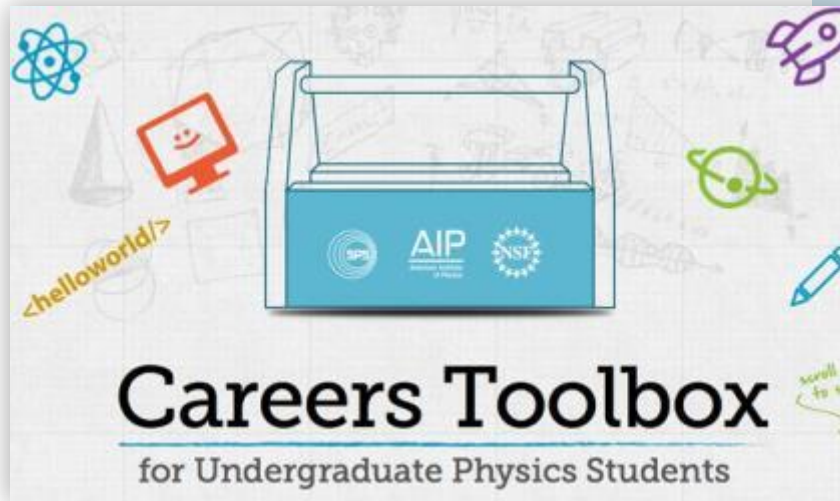
Trends in Bachelor's Degrees Earned by African Americans in Physical Science Fields, 2003-2013



STUDENTS



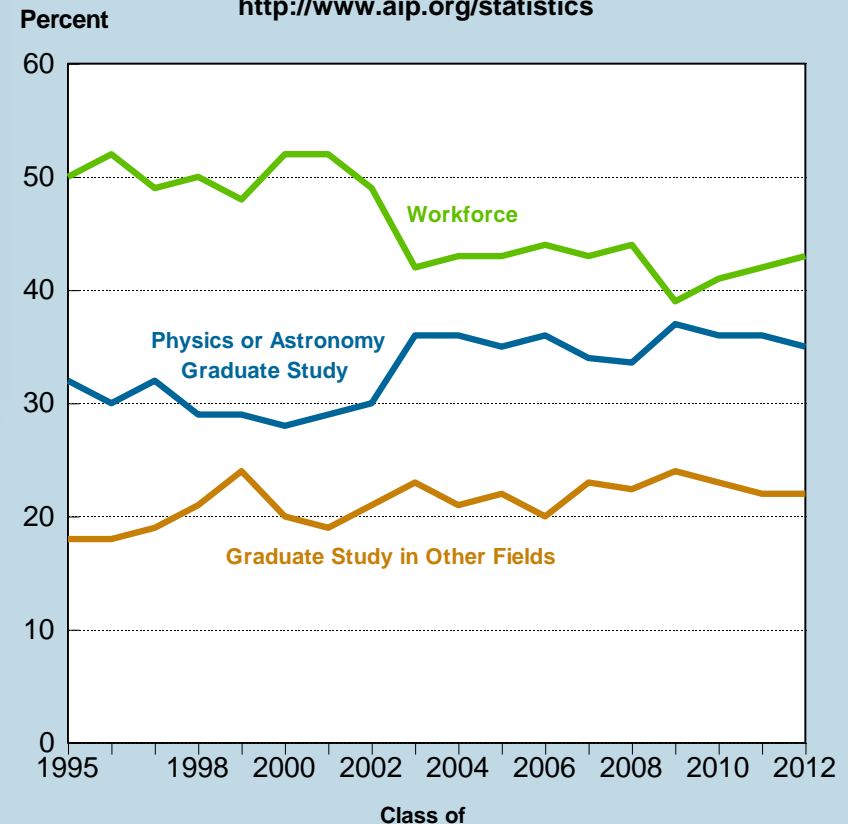
Career Pathways



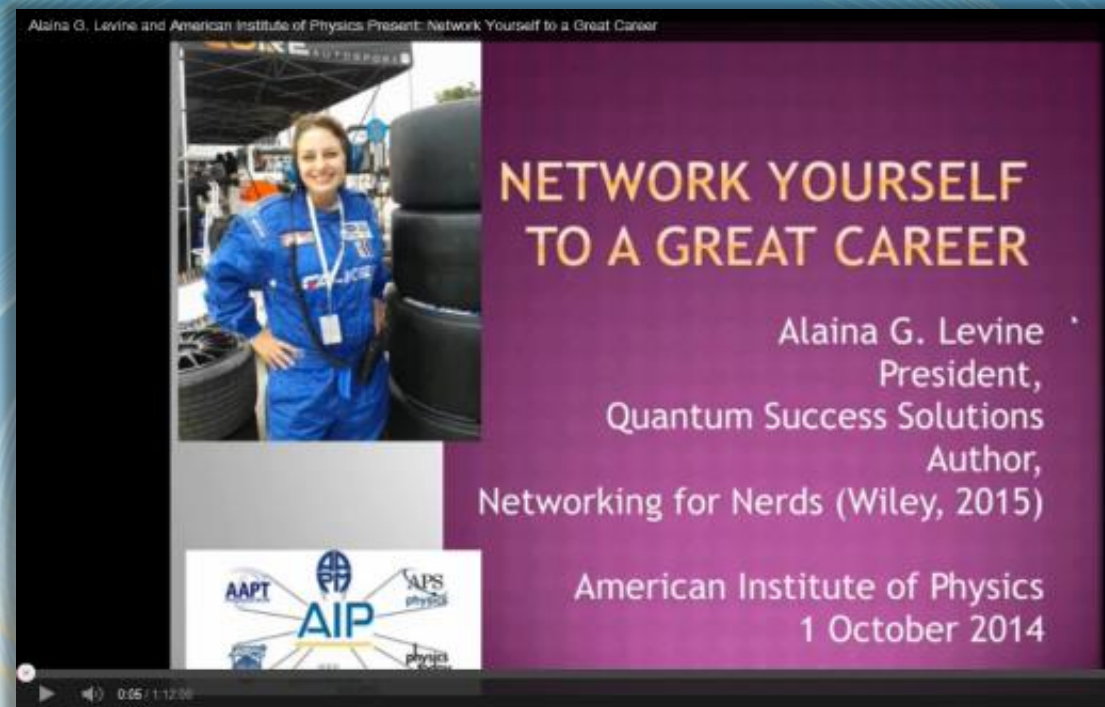
- Toolbox for **Students**
- Fact Sheet for **Career Services Office**
- Report for **Faculty**

Status of Physics Bachelor's in the US One Year After Degree, 1995 through 2012

<http://www.aip.org/statistics>



Career Webinars



- 10 Things To Do Before Graduating to Get a Job
- Identifying and Seizing Value from Conference Participation
- Transitioning Your Career Beyond Academia

Rejoin AAPT...

in time for the Summer Meeting in Sacramento, CA



Please accept this complimentary issue of *Physics Today* as an invitation to reengage with the American Association of Physics Teachers (AAPT). Whether you consider yourself to be a specialist in middle school, high school, undergraduate, or graduate physics education, with AAPT membership you will find the resources you need to change young lives, and the peers who are eager and able to support you.

Rejoin AAPT now and save \$200+ on your Summer Meeting registration!

As a member you'll receive:

- Online subscriptions to *The Physics Teacher* and the *American Journal of Physics*
- Opportunities to network with educators in physics and astronomy
- Access to the jobs board at <http://jobs.aapt.org>
- Print subscription to *Physics Today*
- Mentoring and advice from other dedicated educators

Rejoin online:

aapt.org/Membership/joining.cfm

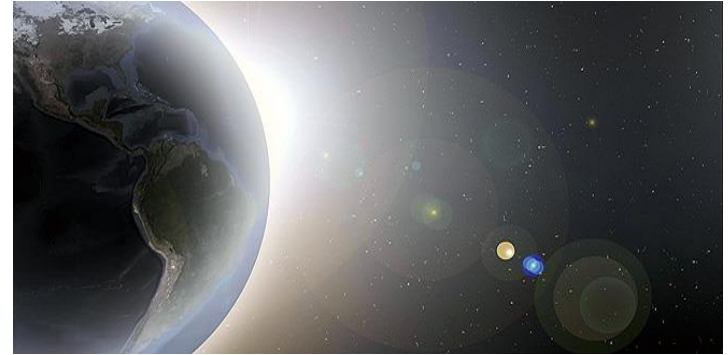
Summer Meeting 2016

aapt.org/Conferences/sm2016

Questions? Call 301-209-3333

or email membership@aapt.org

Media Services: Promoting and disseminating science



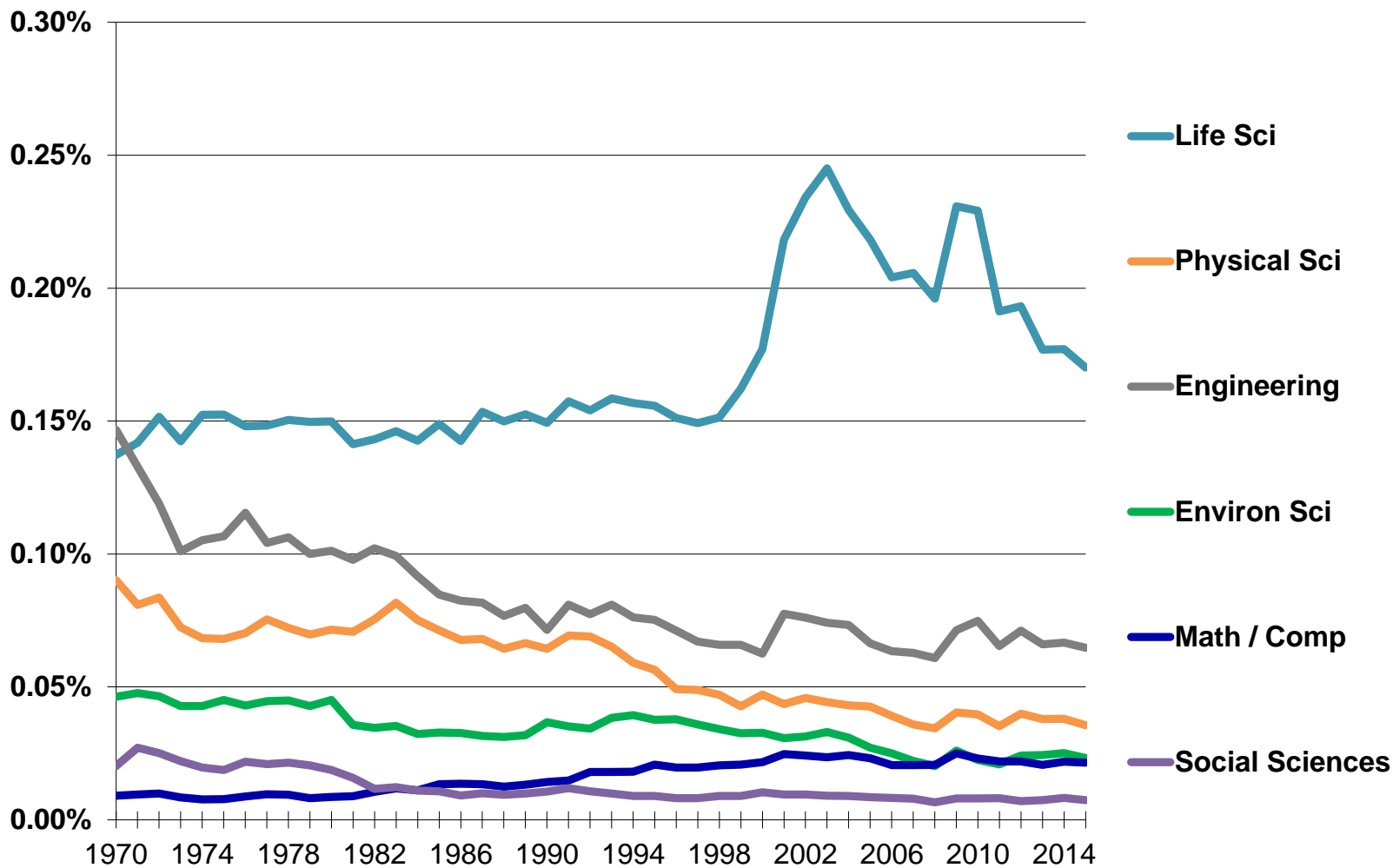
Society Technical Meeting Promotion

- Press releases
- Photo and video galleries
- Onsite and virtual press rooms
- Webcasts

Journal Promotion

- Raise the profile of journals and increase web traffic.
- Increase the number of stories in the media from journals.
- Report major research developments.
- Raise awareness and appreciation of the physical sciences among the general public.
- Provide service to journal authors.

Federal Research Funding by Discipline as a Share of GDP, 1978-2015



Source: National Science Foundation, *Federal Funds for Research and Development* series. FY 2014 and 2015 are preliminary. GDP figures are from OMB. © 2015 AAAS

Science Funding Advocacy

Political Climate



Fiscal Climate

- Reducing the deficit is a top priority for both Rs and Ds
- Increasing tax revenues is not endorsed by Rs
- *International competitiveness in scientific fields is important to both parties*

Society Program Funding

Completely volunteer
Meeting breaks even
Low expenses and overhead –
covered by dues

Sale of directories or indexes

Publishing wall – no revenue
used to support other
activities

Local chapters or sections (some
collect dues) Student programs

Surplus meetings/pubs revenue
provides GR and media activities

CEO and large paid staff
Publishing revenue subsidizes
other activities

Sustaining My Society

- Know your membership
- Make membership relevant to students
- Create campaigns with partners to rejoin
- Promote content to the media
- Seek sponsors for products and events
- Make the case to donors
- Advocate for federal funding for research