

8/12/15

Summary of Results of Survey of US Academic Departments that Include Planetary Science

A survey was sent out to university departments around the US that were thought to include faculty involved in planetary science research and/or offer planetary science undergraduate or graduate degrees. This is Part A of a study of the demographics of planetary science carried out by the American Institute of Physics (AIP) and sponsored by NASA's Planetary Science Division. Part B is a survey of the planetary scientists with PhDs working in the US, being carried out by the AIP in mid-2011. A description of the study, the steering committee and the survey sent to the departments can be found at <http://lasp.colorado.edu/home/mop/resources/related-links/planetary-science-workforce-survey/>

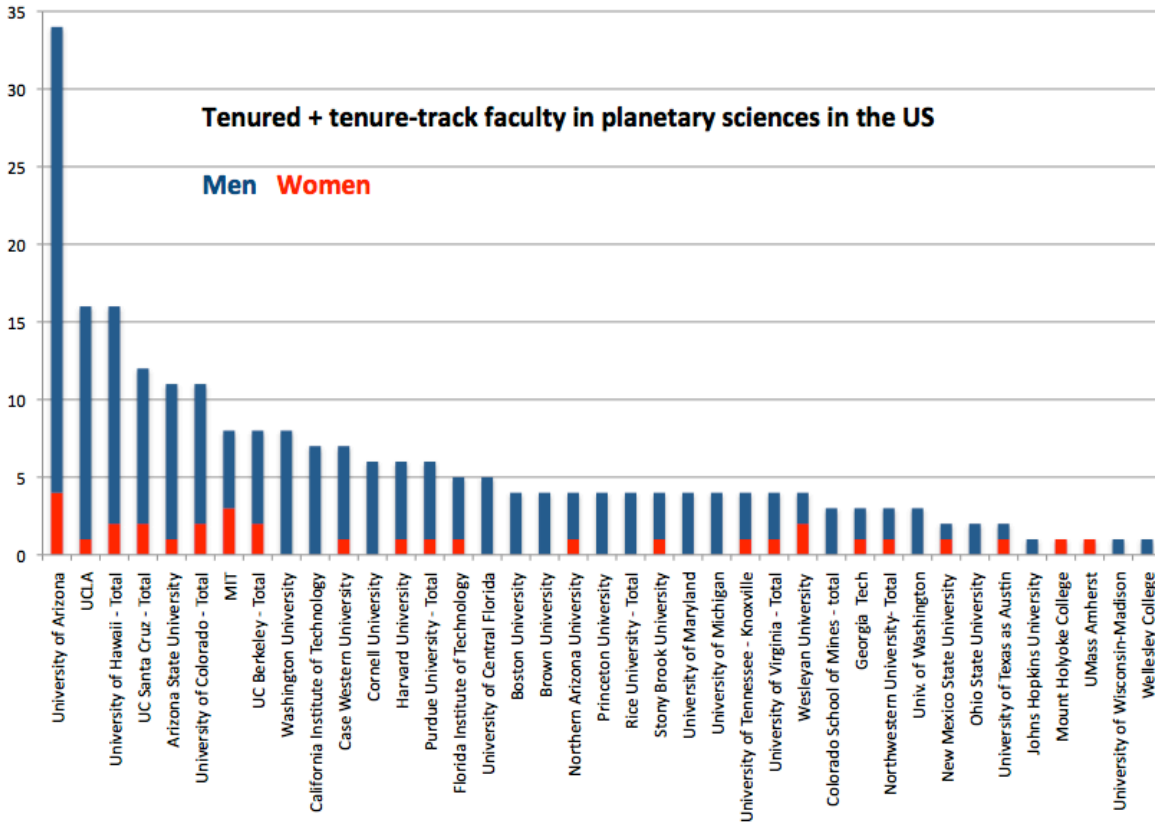
Departments Including Planetary Science

Starting on December 8th 2010 surveys were sent out by email the study chair, Fran Bagenal, University of Colorado, to department chairs. A total of 53 departments responded between December 9th (Stonybrook) and April 8th (MIT). Additional departments within an institution were contacted when mentioned in a survey response. The full list of 53 departments at 43 universities is given below. There is only U of Arizona that has a department that is called planetary sciences – the rest are combined with Earth sciences (16), astronomy (17), geology/geophysics (8), physics (8), atmospheric science (5), something else or combinations thereof.

Tenured / Tenure-Track Faculty

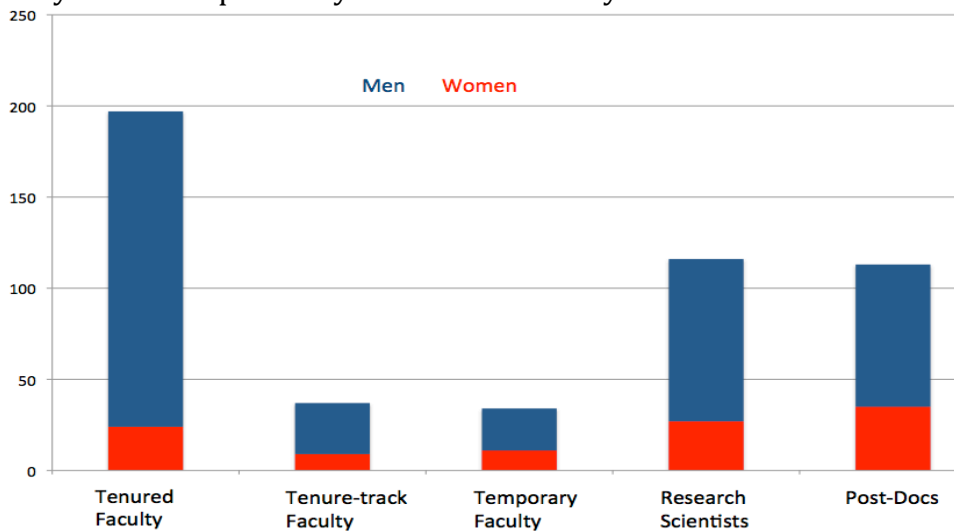
Summing responses from all 53 departments we find there are 233 tenured and tenure-track faculty in who call themselves planetary scientists. Nearly half of these (105) are in just 6 departments (U Arizona, UCLA, U Hawaii, Arizona State U, UC Santa Cruz, U Colorado). Only 14% of planetary faculty are women. This is well below the 40% of PhDs from these same departments awarded to women over the past 2 years. Of even greater concern than these low average numbers of women faculty is the wide range between departments. Of the top 8 departments, MIT has the highest percentage of women faculty at 38% (3 out of 8). Of the 16 departments that have 5 or more faculty members, four of these do not have any women faculty. The numbers of minority faculty in planetary science are even lower with only 4 minority faculty amongst the 233 across the nation.

A total of 11 planetary faculty left academia and 23 were recruited over the past 2 years. Those departments who had been recruiting recently say that there are plenty of good applicants. Several departments commented that the weak economy was limited hiring so there is hope that faculty positions may increase over the next few years.



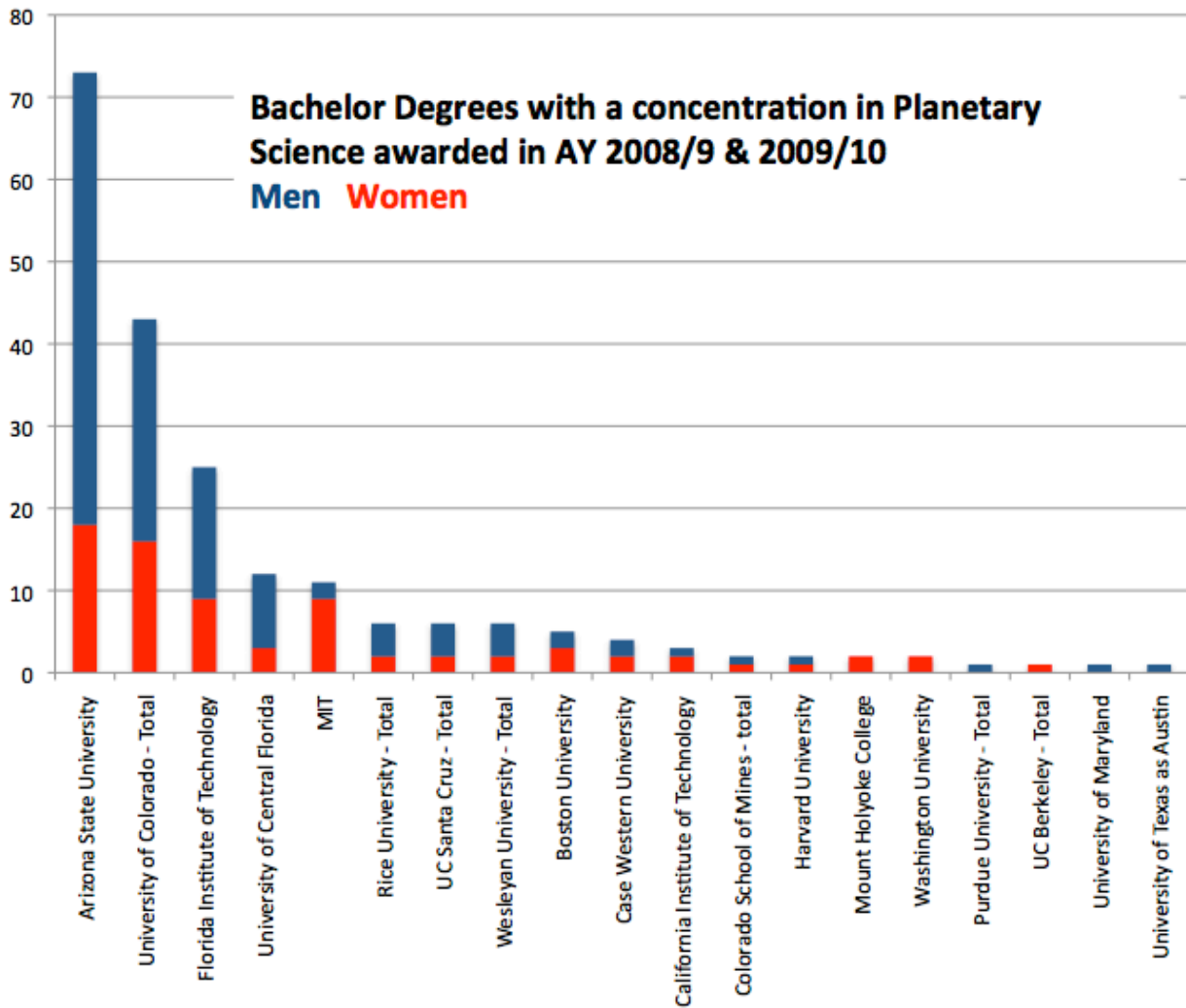
Non-Tenure-Track Staff

When the departments were asked how many temporary faculty, research scientists and post-docs were employed in their department all 53 responses added up to 263 (28% women). But this number is probably a gross underestimate because 26 departments mentioned other units (e.g. research labs or institutes rather than academic departments) within their university where planetary researchers are employed. The demographics of the non-faculty researchers in planetary sciences will be explored with Part B of the study that will survey the whole planetary science community.



Bachelor Degrees

Few of the 53 departments offer an undergraduate degree with a concentration in planetary science, producing only 206 bachelors (36% women) over the past 2 years, predominately from ASU, U of Colorado, Florida Institute of Technology and U Central Florida. It will be useful to compare these numbers with the types of UG degrees reported by the planetary science community. It should be noted, however, that departments offering UG degrees incorporating planetary science are not necessarily aiming to produce future PhDs and it could be argued that any UG science degree is of value to the student – and to the nation – whatever their future career.



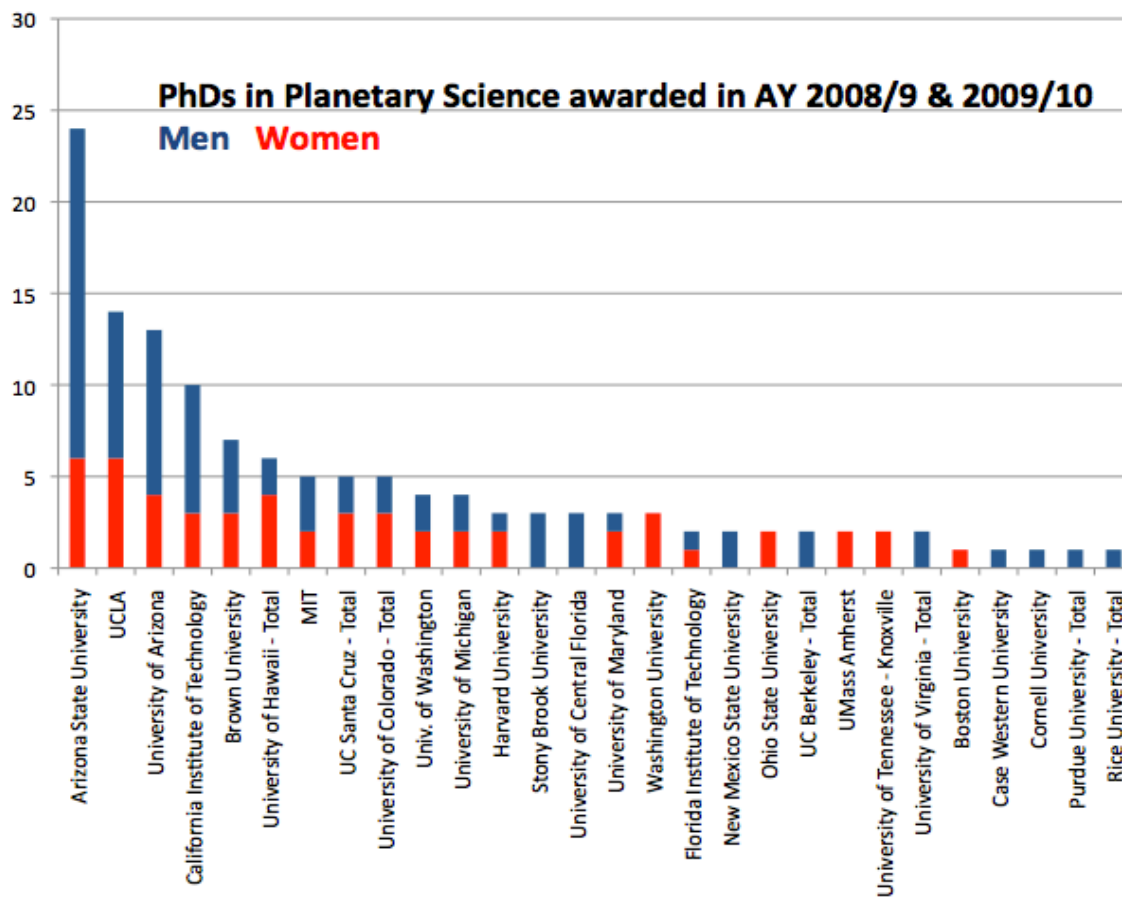
Graduate Admissions

The departments were asked to rank the factors they might use in their graduate admissions process (General GRE Score, Physics GRE Score, Grades in Math & Physics Courses, Grades in Topics Related to Proposed Graduate Research, Undergraduate Research Projects, Applicant’s Personal Statement, Letters of Recommendation). Most departments said they used pretty much all of these factors, the only exception being the

Physics GRE Score that was ranked highly by many departments but not used at all by about half of the departments, particularly the more geology-oriented departments. When asked which 2 criteria were the most important the responses often included grades, GRE scores, letters of recommendation and research, but there was a wide range of responses. Similarly, when asked about the quality and quantity of applicants, the departments expressed very different opinions. The larger programs and the higher-ranked universities tended to express satisfaction with the supply of good students. Others expressed concerns about available financial support, difficulty in attracting good applicants and competition with bigger and better-known programs.

Graduate Degrees

A total of 131 PhDs in planetary science were awarded in the past 2 years. Of these 74 were awarded by just 6 universities (Arizona State University, UCLA, University of Arizona, California Institute of Technology, Brown University, University of Hawaii). Students admitted to graduate programs in planetary science come from a wide range of undergraduate degrees (physics, geological sciences, astronomy, math, chemistry, engineering being the commonly quoted subjects). The percentage of degrees going to women over the past 2 years varied between departments and averaged at 40%. An average of 24% of PhDs in planetary science were awarded to non-US students with little difference between men and women.



Responding Departments

Arizona State University	School of Earth & Space Exploration
Boston University	Astronomy
Brown University	Department of Geological Sciences
California Institute of Technology	Division of Geological and Planetary Sciences
Case Western University	Geological Sciences
Colorado School of Mines	Department of Geophysics
Colorado School of Mines	Environmental Science and Engineering
Cornell University	Astronomy
Florida Institute of Technology	Physics & Space Sciences
Harvard University	Earth and Planetary Sciences
Georgia Tech	Earth & Atmospheric Sciences
Johns Hopkins University	Earth and Planetary Sciences
MIT	Earth, Atmospheric & Planetary Sciences
Mount Holyoke College	Astronomy
New Mexico State University	Astronomy
Northern Arizona University	Dept. of Physics and Astronomy
Northwestern University	Physics and Astronomy
Northwestern University	Earth & Planetary Science
Ohio State University	Civil & Environmental Eng. & Geodetic Sci.
Princeton University	Dept. of Geosciences
Purdue University	Physics
Purdue University	Earth & Atmospheric Sciences
Rice University	Physics & Astronomy
Rice University	Earth Science
Stony Brook University	Dept. of Geosciences
UC Berkeley	Earth & Planetary Science
UC Berkeley	Astronomy
UC Santa Cruz	Astronomy & Astrophysics
UC Santa Cruz	Applied Math
UC Santa Cruz	Earth & Planetary Sciences
UCLA	Earth & Space Sciences
UMass Amherst	Geosciences
Univ. of Washington	Earth and Space Sciences
University of Arizona	Dept. of Planetary Sciences
University of Central Florida	Department of Physics
University of Colorado	Chemistry and Biochemistry
University of Colorado	Department of Physics
University of Colorado	Department of Astrophysical and Planetary Sciences
University of Colorado	Geological Sciences
University of Colorado	Department of Atmospheric and Oceanic Sciences
University of Hawaii	Department of Physics and Astronomy
University of Hawaii	Hawaii Institute Geophysics and Planetology
University of Illinois, Chicago	Earth & Environmental Sci
University of Maryland	Department of Astronomy
University of Michigan	Atmospheric, Oceanic and Space Sciences
University of Tennessee - Knoxville	Earth and Planetary Sciences
University of Texas at Austin	Astronomy
University of Virginia	Materials Science & Engineering: Engineering Physics
University of Virginia	Astronomy

University of Wisconsin-Madison
Washington University
Wellesley College
Wesleyan University
Wesleyan University

Astronomy
Earth & Planetary Science
Astronomy
Earth & Environmental Sci
Astronomy

If you know of a department not on this list that has a planetary program please ask the department chair to contact Fran Bagenal at bagenal@colorado.edu.