

19 July 2021

Planetary Science Academic Department Surveys 2011 & 2018

Fran Bagenal

University of Colorado, Boulder

With special thanks to Lucia Illari,
George Washington University

Academic Department Surveys 2011 & 2018

Planetary Science:

54 Departments >1 PS faculty

250 faculty

100 Undergraduates / year

PhDs: 50-65 / year

40-45% women

30% non-US

8% minority

For comparison.....

Astronomy (AIP):

93 Departments (40 Astro, 53 Astro+)

550 faculty

666 Undergrad degrees / year

159 PhDs / year

<https://www.aip.org/statistics/reports/roster-astronomy-2019>

- Planetary Science: Very interdisciplinary, dispersed, poorly defined
- Astrobiology & Exoplanets not included
- Only a dozen universities dominate field
- 7% growth in faculty over 7 years
- Fraction of women faculty increasing 14%→20%
- Untenured women → 30%

Need to find way to systematically gather department data

(community agreement on scope of planetary science, mechanism for data collection, analysis, posting, etc)

Surveys of Workforce & University Departments that Include Planetary Science - 2011 & 2018 Reports

Quick history:

- It's 2010. About to start Decadal Survey of Planetary Science. But we – the profession – had little knowledge about how many planetary scientists we have in the field – or where/how they are trained.
- A group works with the American Institute of Physics to do a workforce survey
- Fran Bagenal contacts ~50 academic departments that have some planetary connection
- 2011 Results:

<https://lasp.colorado.edu/home/mop/resources/planetary-science-workforce-survey/2011-planetary-science-survey/>

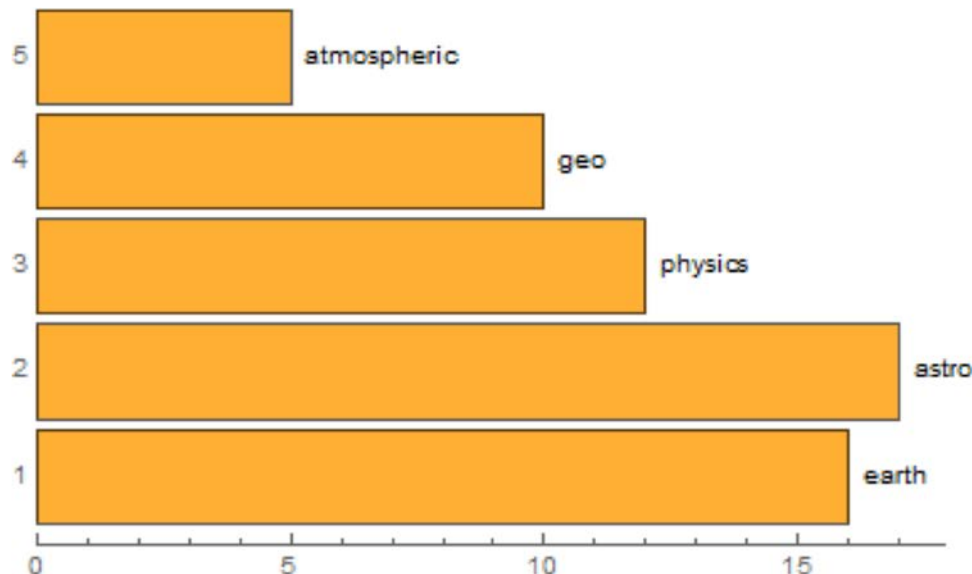
- 2017. Time to repeat surveys. Fran contacts departments. NASA stalls on funding workforce survey. And stalls. And stalls. Finally DPS picks up the ball and does the 2020 workforce survey.
- 2021. Next Decadal includes a State of the Profession Working Group. They not only want to know how the workforce has changed over the past decade – but also what how the departments might have changed
- We compare the 2010/11 departmental survey with the 2017/18 numbers
- Some key departments are missing....
- We chased up – but less complete than 2011

2011 & 2018 Departmental Surveys

- Sent to American university depts thought to have PS faculty and/or offer PS Bachelors/Masters/PhD
- Emailed by Fran Bagenal to dept chairs
- Only U. of Arizona has a dept called just Planetary Science
- Planetary science faculty in multiple depts at same university

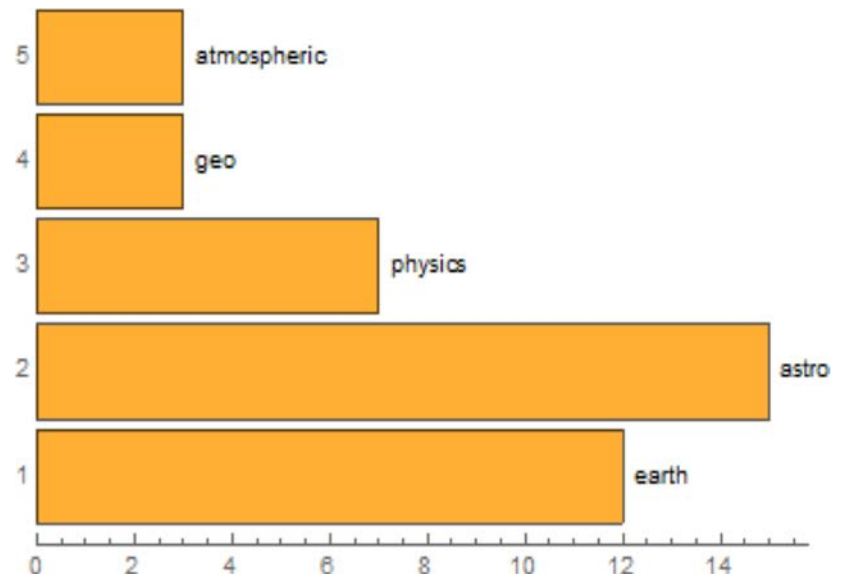
2011 Survey:

- 40 universities, 54 departments
- words appearing in department names:

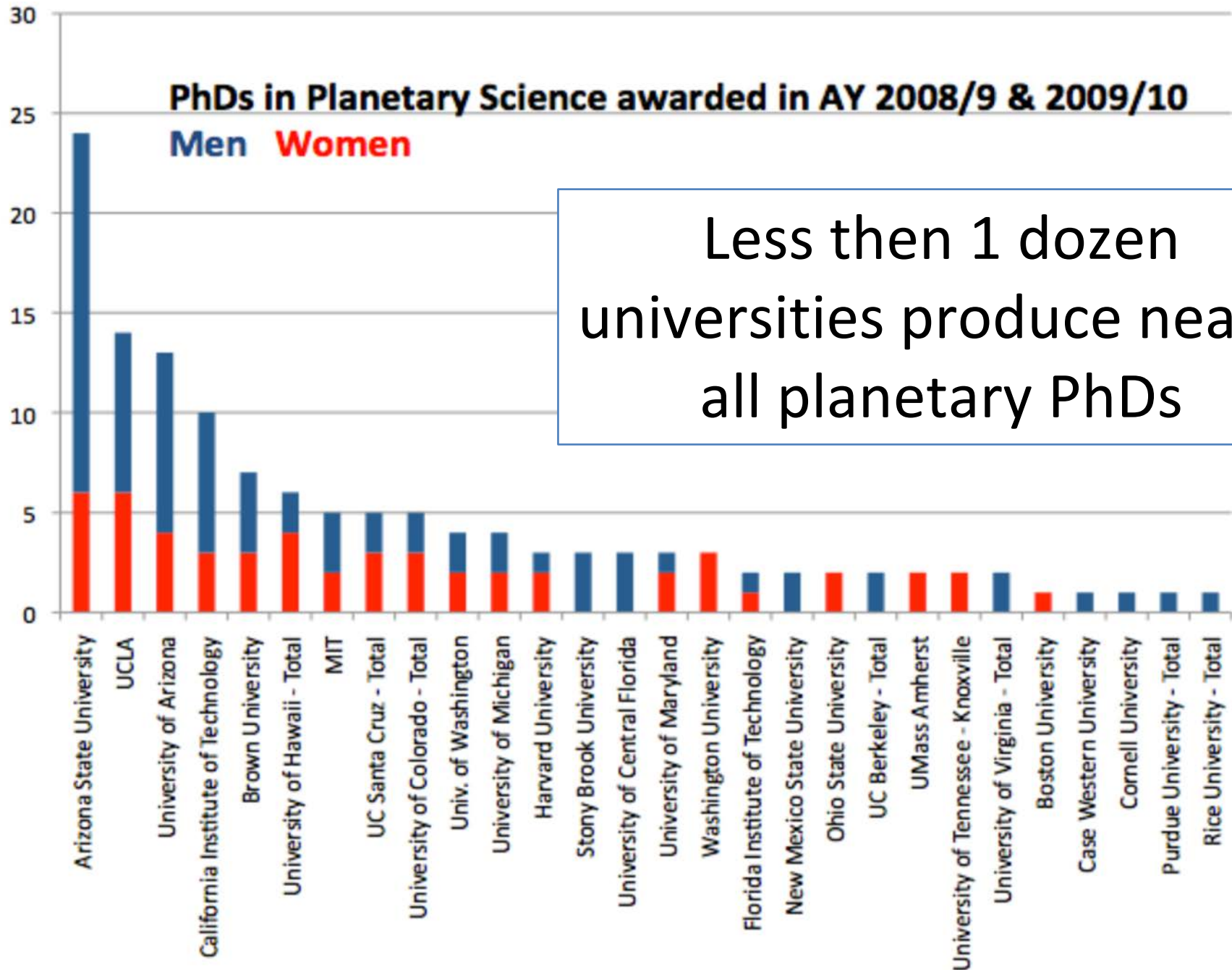


2018 Survey:

- 29 universities, 36 departments
- words appearing in department names:

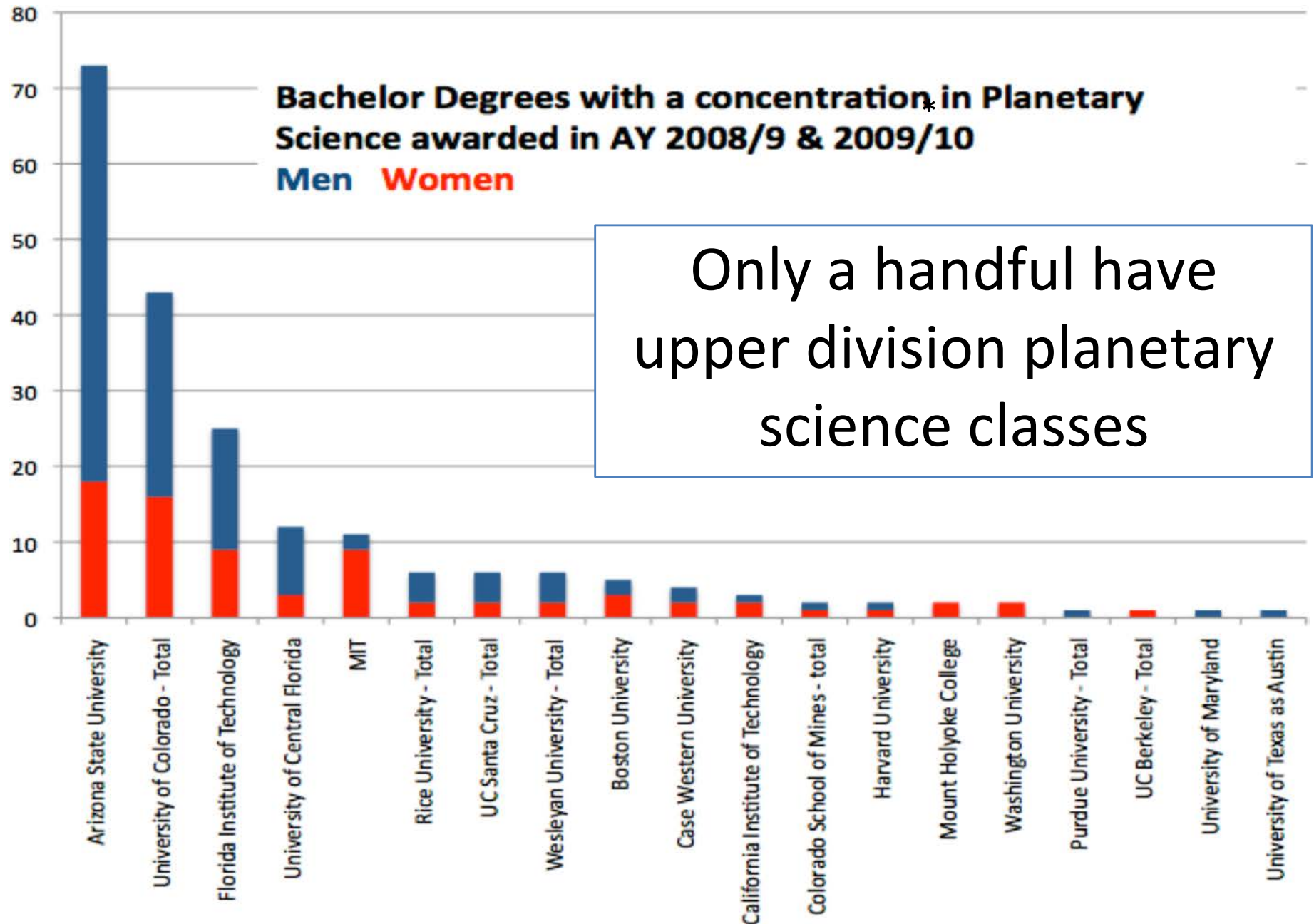


2011 Department Survey



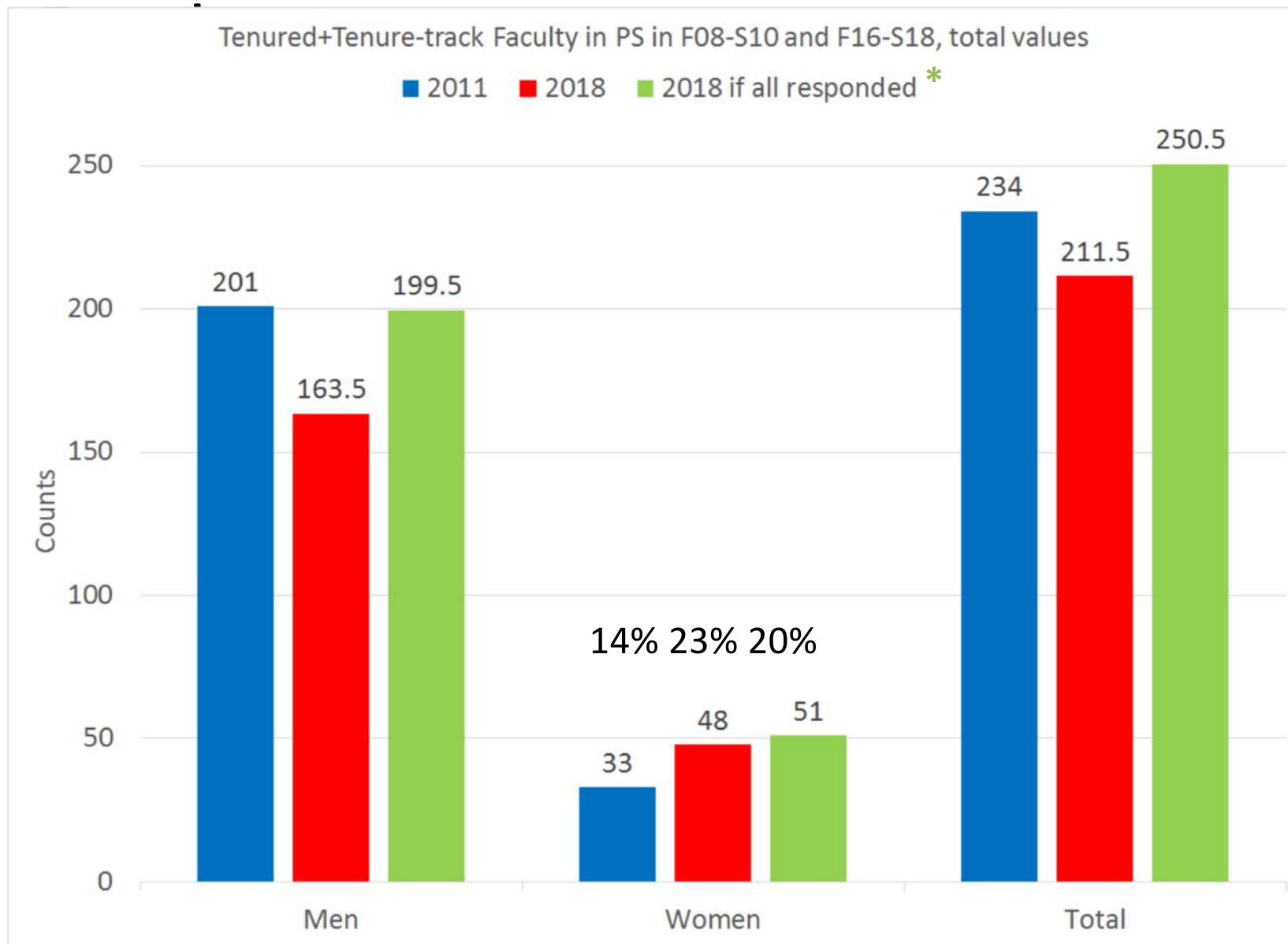
Less than 1 dozen universities produce nearly all planetary PhDs

2011 Department Survey Results



* took 2 or more upper division courses in planetary science

2011 & 2018 Departmental Surveys:

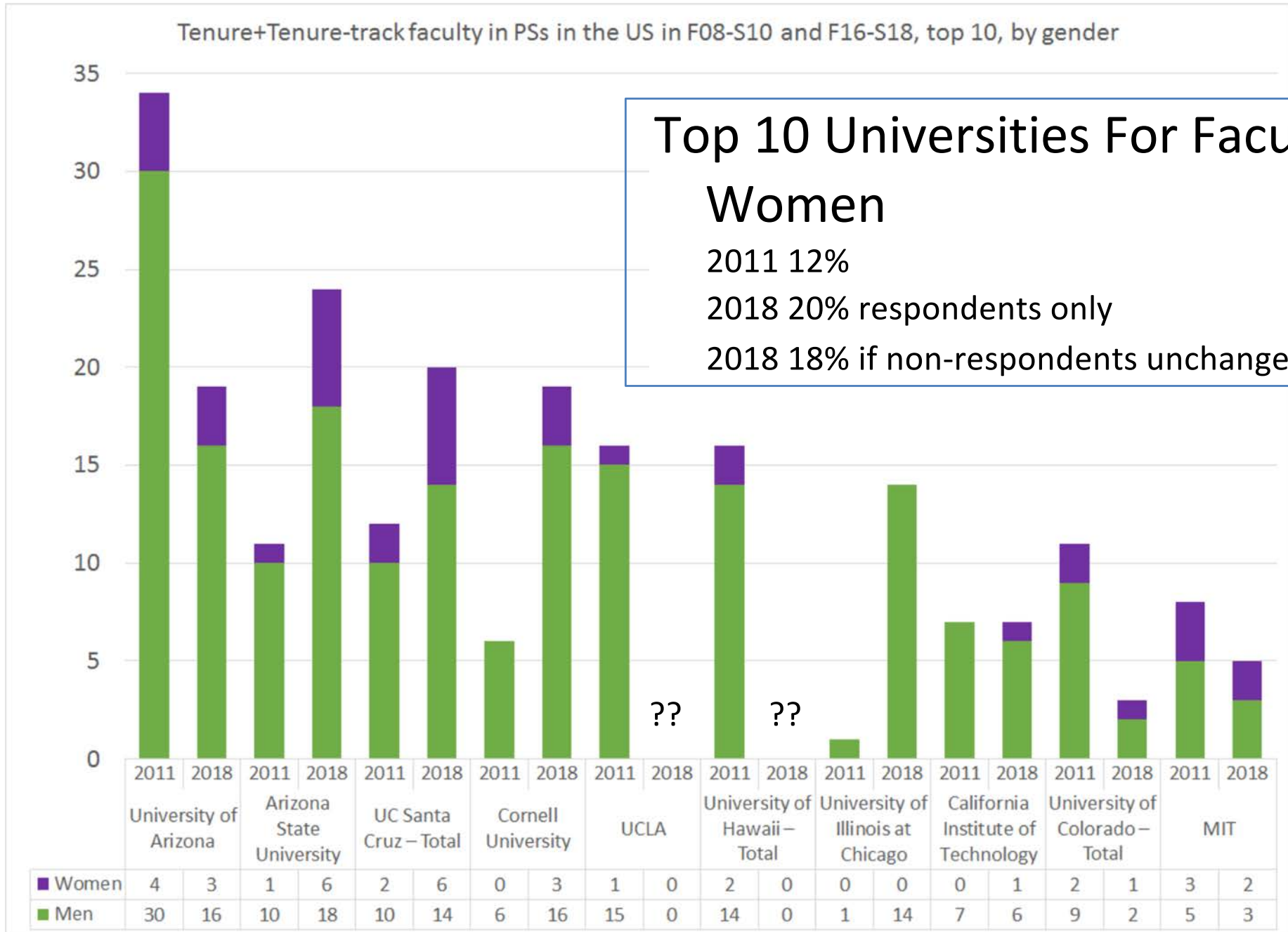


* Assuming no change for non-responding departments

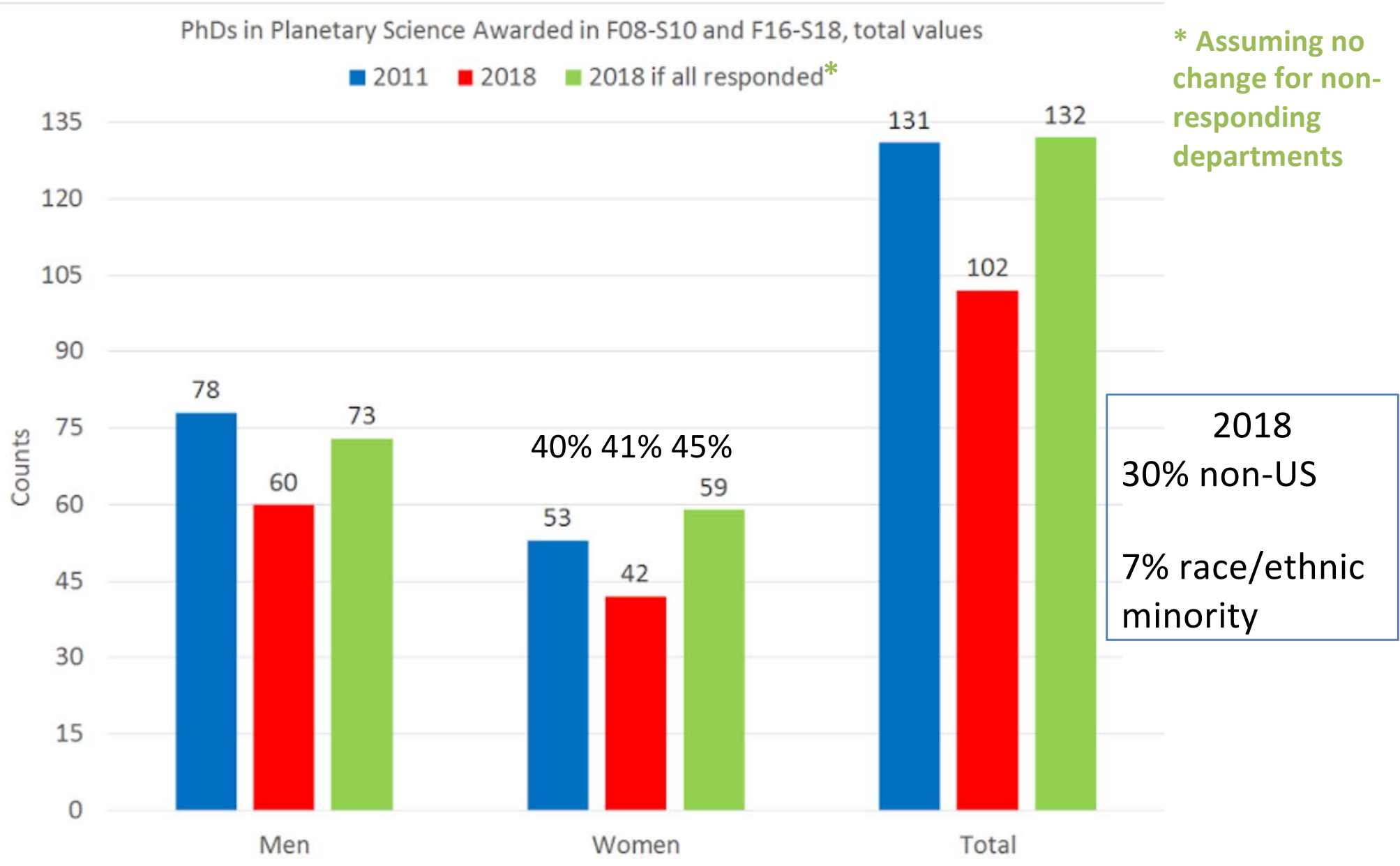
234 → 250
= 7% growth

Non-tenured 24%, 35%, 30% suggests increase in women recruited

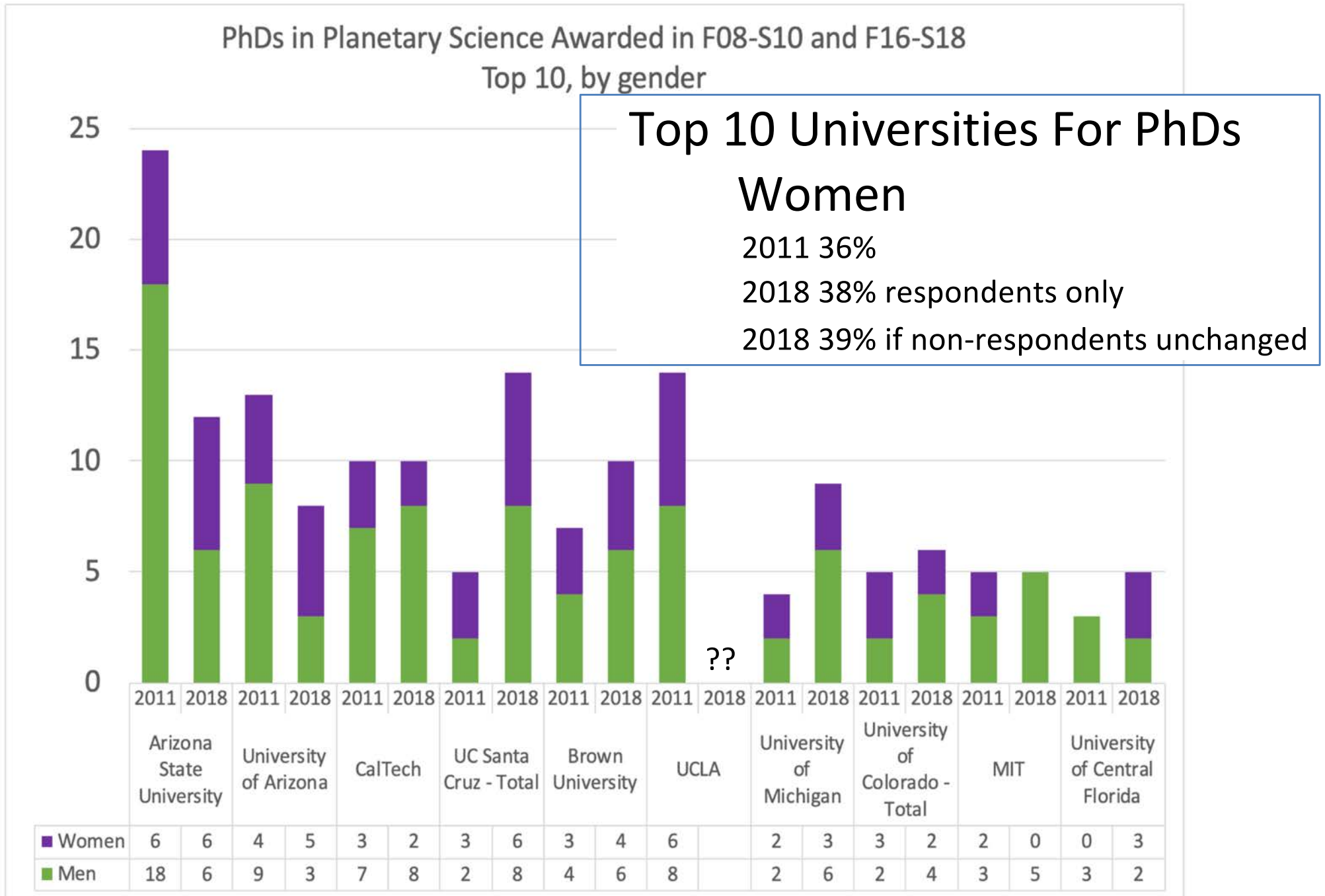
2011 & 2018 Departmental Surveys: Faculty



2011 & 2018 Departmental Surveys: PhDs



2011 & 2018 Departmental Surveys: PhDs

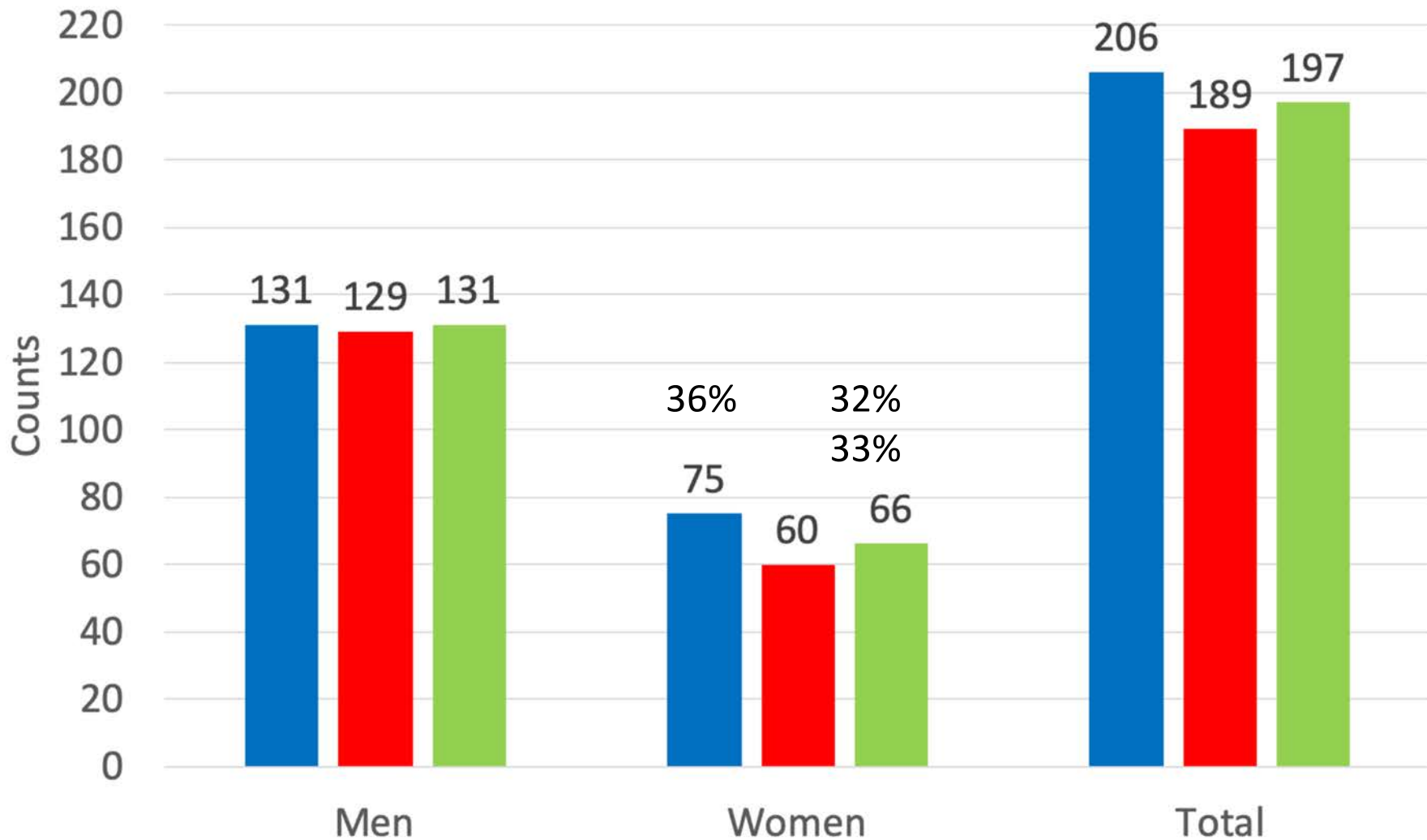


2011 & 2018 Departmental Surveys: Undergrad

Bachelor Degrees with concentration in Planetary Science awarded
in F08-S10 and F16-S18, total values

■ 2011 ■ 2018 ■ 2018 if all responded*

* Assuming no
change for non-
responding
departments



2011 & 2018 Departmental Surveys: Undergrad

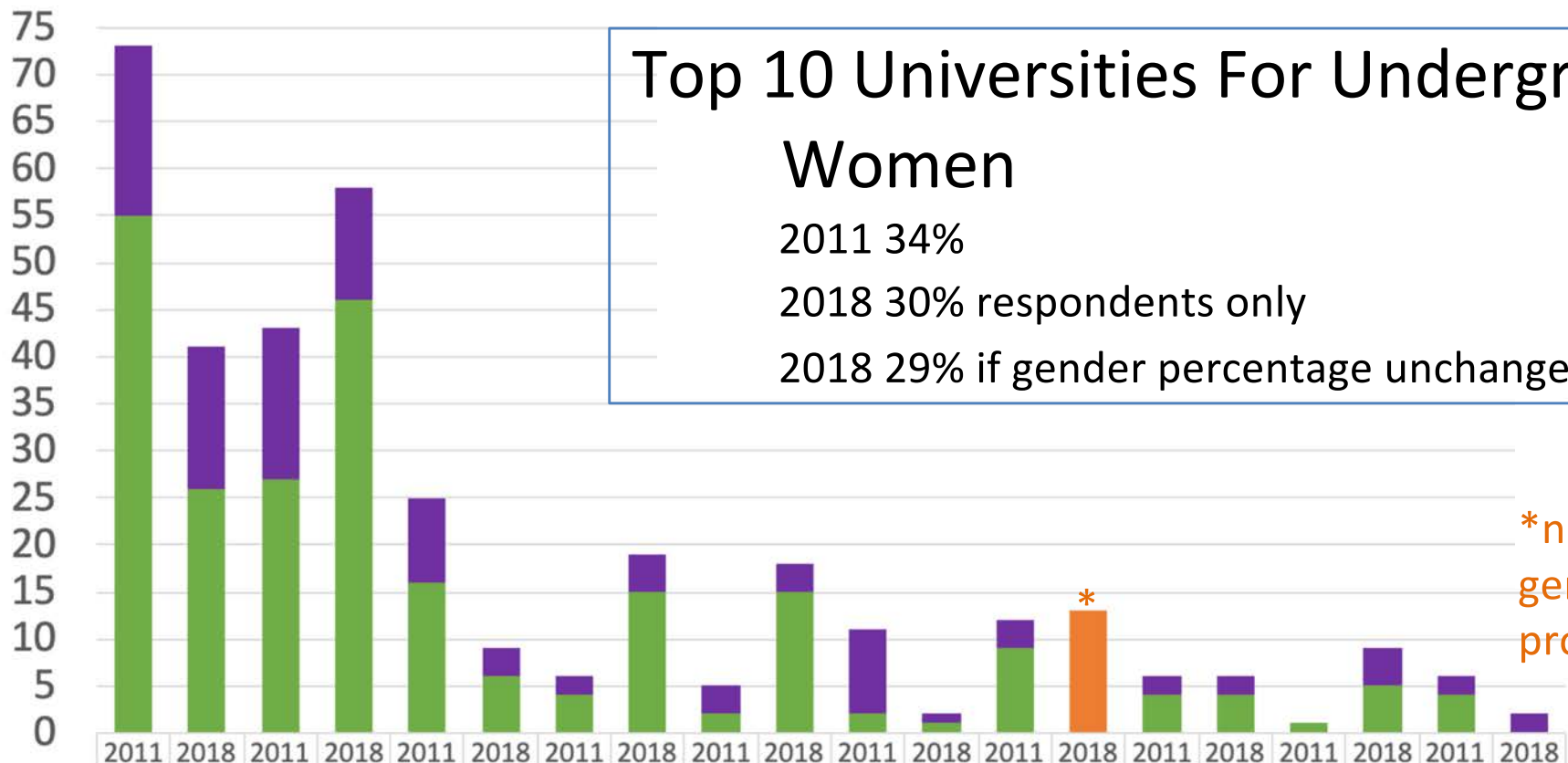
Bachelor Degrees with a concentration in Planetary Science awarded in
F08-S10 and F16-S18, top 10, by gender

Top 10 Universities For Undergrads Women

2011 34%

2018 30% respondents only

2018 29% if gender percentage unchanged



*no
gender
provided

Total	73	41	43	58	25	9	6	19	5	18	11	2	12	13	6	6	1	9	6	2
Women	18	15	16	12	9	3	2	4	3	3	9	1	3		2	2	0	4	2	2
Men	55	26	27	46	16	6	4	15	2	15	2	1	9		4	4	1	5	4	0