



UC San Diego

PHYSICAL SCIENCES

**Task Force on the Status of Academic Women in the
Division of Physical Sciences**

BACKGROUND AND CHARGE TO THE TASK FORCE



Maria Goeppert Mayer

BACKGROUND:

In April 2017, a Task Force on the Status of Women in the Physical Sciences was established. The charge of this task force mirrors the campus-wide Committee on the Status of Women (CSW), with a specific focus on our division.

CHARGE:

- To identify and analyze issues relating to the status of women in the division, including faculty and students.
- To inform and educate our community on issues affecting the status of women within the division.
- To advise and make recommendations to the Dean and Chairs regarding policies and procedures aimed at improving conditions for women.

IDENTIFY AND ANALYZE ISSUES

Multiple Issues Identified and Analyzed

1. Demographics: Faculty, Postdoctoral Scholars, Graduate Students and Undergraduate Students (2016 compared to 2006)
2. Faculty Salaries, Promotions, Retentions and Committee Assignments
3. Graduate Student Advancement and Retention
4. Undergraduate and Graduate Student Awards
5. Undergraduate Student Research Participation

OVERVIEW OF SOURCES OF INFORMATION – UC SAN DIEGO

Data Type	Data Collected From
Faculty committees, student awards, qualifying exams for graduate students	Individual departments
Graduate Student Demographics Advancement (Candidacy and Degree)	Graduate division
Participation in Undergraduate Research 199	Division of Physical Sciences – Class Lists
Faculty promotions, accelerations and retentions	Division of Physical Sciences
Faculty Salaries	Data collected and analyzed by a working group led by AVC Tamara Wall
Demographics – Undergraduate and graduate students, postdoctoral associates and faculty	<p>For UC San Diego data:</p> <p><i>Undergraduate students</i>: Office of the Vice Chancellor for Equity, Diversity, and Inclusion for 2016 data and for 2006: http://ir.ucsd.edu/undergrad/stats-data/enrollment/index.html).</p> <p><i>Graduate students</i>: the Graduate Division.</p> <p><i>Postdoctoral Associates</i>: 2016 data from Office of Research Affairs (Note no data for 2006).</p> <p><i>Faculty</i>: Office of the Vice Chancellor for Equity, Diversity, and Inclusion</p>

**DEMOGRAPHICS:
FACULTY, POSTDOCTORAL SCHOLARS,
GRADUATE STUDENTS AND UNDERGRADUATE STUDENTS
2016 COMPARED TO 2006**

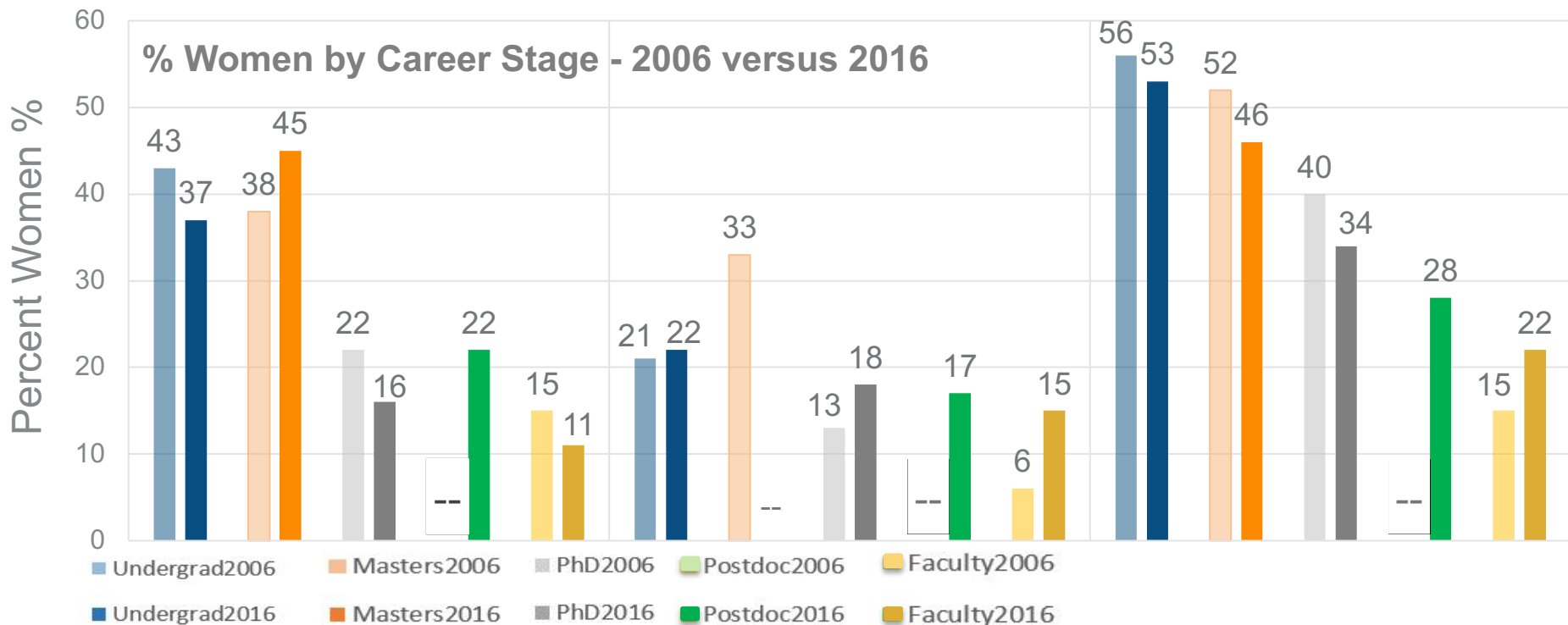
DEMOGRAPHICS FOR DEPARTMENTS: 2006 VERSUS 2016

UC SAN DIEGO

Mathematics

Physics

Chemistry and Biochemistry



DEMOGRAPHICS : HIGHLIGHTS

- **2016 versus 2006:**

Overall, the data show some progress made in increasing the number of women faculty in two of the three departments.

- **Some specific differences between departments:**

- **Math** – fewer undergraduates, more M.S., fewer Ph.D. women students and fewer women faculty in 2016 compared to 2006
- **Physics** – more undergraduates (slightly), more graduate students and more women faculty in 2016 compared to 2006
- **Chemistry & Biochemistry** – fewer undergraduate and graduate women students and more women faculty in 2016 compared to 2006

DEMOGRAPHICS DATA : RECOMMENDATIONS

- “Moving the needle” is slow; a decade later, there is evidence of some progress in some areas (Physics faculty and Chemistry & Biochemistry faculty) but not in others (Math faculty).
- Continue to prioritize Excellence searches within the division.
- Proactive outreach to potential faculty candidates can substantially broaden the applicant pool. Is this being done well by the departments? If not, a strategy should be developed to increase the pool of women and URM applicants for all searches.
- Strategize with departments to reverse trends where women are decreasing in numbers and thus their participation is decreasing (Math, undergraduates, Ph.D. students; Chem, undergraduates, M.S. and Ph.D. students) or is stagnant (Physics, undergraduates). This is important in order to prepare more women students for STEM fields.

FACULTY SALARIES, PROMOTIONS, RETENTIONS AND COMMITTEE EQUITY

FACULTY SALARIES – BACKGROUND

Senate-Administration Faculty Equity Review Workgroup. Work completed in the fall 2016-spring 2017 using primarily salary data from 2015-16.

Alison Coil summarized these data for the Task Force and presented at a Task Force meeting. The workgroup was led by Tamara Wall, AVC-AP (Associate Vice Chancellor of Academic Personnel).

The main analysis of these data were led by Peter Shearer, Associate Dean, SIO, with input from Senate Faculty including Judy Kim (Chemistry & Biochemistry) and Alison Coil, as well as others around campus.

DEMOGRAPHICS DATA : RECOMMENDATIONS

- Data show that there are gender gaps in salary within the university and within DPS. Women make less in all divisions across the university. However, some of these salary differences are small. In DPS, there is a 3% difference. It is important for DPS to continue to monitor salary data and analyze every 2-3 years.
- There are many outlier salaries – both high and low. DPS should look at these outliers further to ensure there are no gender inequities in either high or low salaries.
- Spot compressions may become available again as a mechanism to correct for salaries.
- Collect data yearly and analyze results regularly.

ANALYSIS OF FACULTY PROMOTIONS

Analysis of several issues for faculty members going up for promotions, either to associate professor with tenure or to full professor (2012 to 2017)

- The proposed action from the department
- Votes: numbers for, against, abstain and absent
- Whether the faculty member wrote a clarifying letter either before or after the department vote
- Whether CAP requested additional information (meaning department didn't give enough information on the file)
- Whether CAP modified the department's proposed action up or down
- Whether the department asked CAP to reconsider or accepted what CAP proposed
- Whether the final outcome was what the department proposed or was modified up or down (after going through dean , CAP and EVC)

FACULTY PROMOTIONS AND RETENTIONS – HIGH LEVEL OVERVIEW

- Women are writing clarifying letters more often than men (50% compared to 31%) for their files in Physics and Chemistry.
- CAP requests additional information more often for women (30%) than for men (10%).
- At the department level men are preferentially proposed for accelerations compared to women (57% compared to 20%).
- CAP modifies women up more than men, also modifies men down more than women.
- While women are not put up for accelerations as often as men by departments, they do end up receiving them more equitably (40% for women, 55% for men) because of steps external to the department (Dean and/or CAP).
- Women are offered retentions (incl. pre-retentions) at rates commensurate with their representation, and retentions for women are successful as often as they are for men.

FACULTY SALARIES, PROMOTIONS AND RETENTIONS: RECOMMENDATIONS

- Continue to collect data on salaries, promotions, accelerations and retentions within the division.
- Processes for promotions and accelerations need to be well-documented and transparent within each of the departments.
- Processes for promotions and accelerations need to be implemented uniformly with an eye towards past differences we have uncovered.

FACULTY LEADERSHIP AND COMMITTEES

DEPARTMENTAL CHAIRS – 50 YEARS



- No woman has ever served as Chair of the Physics or Mathematics Departments
- In the Chemistry & Biochemistry Department there has been one woman chair and one woman interim chair (20 years ago). This department has the most women in the division: 15 women as of January 2019.

DEPARTMENT COUNCIL (PHYSICS ABC COMMITTEE)

Averaged over 5 years: 2012 to 2016

Math: 3 person elected committee, 1 female, 33% women, compared to 7% tenured women faculty

Chemistry: 7 person committee, 20% women, compared to 17% tenured women faculty

Physics: 9 person committee, 0% women, compared to 7% tenured women faculty

Yearly assignments for Chemistry & Biochemistry and Physics whereas for Math it is a two-year assignment

DEPARTMENTAL LEADERSHIP AND COMMITTEES: HIGHLIGHTED RESULTS

- Examples of women in leadership roles vary across the departments.
- In Physics women very rarely serve as committee chairs or on department council (ABC, ad hoc, and search committee chair).
- Chemistry and Biochemistry also shows differences in leadership opportunities for women compared to men.

DEPARTMENTAL LEADERSHIP AND COMMITTEES : RECOMMENDATIONS

- Departments should be proactive in recruiting women to serve and chair influential committees and selectively use women in roles where they can have the highest impact.
- Service on departmental executive committees (called different names in the different departments) should be inclusive. Departments should consider having term limits on this committee, so that more faculty can have opportunities to serve on this important departmental committee.
- Continue systematic collection of data for analysis of leadership and committee opportunities in each of the departments.
- Department chairs should consult with the Dean's office before finalizing committee assignments, including leadership opportunities and search committee assignments, to ensure gender equity and inclusion.

GRADUATE STUDENT ADVANCEMENT AND RETENTION

GRADUATE STUDENT ADVANCEMENT & RETENTION: HIGHLIGHTED RESULTS

- Women take a similar time as men to advance to candidacy and to graduate.
- Women also complete the Ph.D. programs as often as men.
- It is taking women longer to pass the qualifying exam. Why is that? How can we make the qualifying exam outcomes more similar?

GRADUATE STUDENT ADVANCEMENT & RETENTION: RECOMMENDATIONS

- Departments should put more focus on recruiting women during the graduate admissions process and consider best practices for the recruitment of women specifically.
- Departments may want to consider holistic admissions for graduate students to help ensure that a diverse group of students is admitted into our programs.
- Continue to maintain statistics on equity both during the admission process and advancement through the graduate program, including retention.

RECOMMENDATIONS: QUALIFYING EXAMS

- Need a more systematic collection of data on qualifying exams in each of the departments. It is most helpful if all three departments report data in the identical manner. This should be overseen by Dean's office and collected annually. This will allow for better tracking and more uniform comparisons.
- Chemistry and Biochemistry recently changed their qualifying exams. Early indications are that the new (proposal-based) format is more equitable. This should be analyzed in more detail.
- Task force committee members discussed the role, importance and content of background courses, advising of incoming students, nature of study groups and the need to identify students where background courses are lacking of utmost importance in order to help prepare students for qualifying exams.

STUDENT AWARDS

COLLECTED FROM EACH DEPARTMENT

2012 TO 2017

STUDENT AWARDS: HIGHLIGHTED RESULTS

- Women undergraduate students are being nominated and receiving awards in Math and Physics commensurate with their representation in the department, while in Chemistry & Biochemistry the undergraduate women are not being nominated or receiving awards at the level of their representation in the department.
- Women graduate students are being nominated and receiving awards at a rate that matches or is higher than their representation in the departments within the years that have been analyzed, for all three departments.

STUDENT AWARDS: RECOMMENDATIONS

- Chemistry & Biochemistry stands out in terms of preferentially low nominations for women undergraduates. Understanding the cause of this lower nomination rate should be investigated (e.g. is it the GPA cutoff that is keeping the number of women nominated low? Or are faculty not nominating undergraduate women for another reason?).
- Continue to maintain statistics on equity in student awards and report results to departments.
- In addition, consider maintaining data on faculty awards, including both nominations and final award outcomes, to help ensure equity at the faculty level as well.

UNDERGRADUATE STUDENT RESEARCH PARTICIPATION

UNDERGRADUATE RESEARCH PARTICIPATION: HIGHLIGHTS

- 199 Enrollments Analyzed For Participation in Each Department (199 - Undergraduate Research).
- Class lists for 199 for each department in the divisions spanned from Fall 2011 to Spring 2017
- Women are participating in undergraduate research at a similar rate as their representation in the departments.
- Continue to monitor outcomes every few years to ensure that all of our students are fully participating in undergraduate research.

INFORM AND EDUCATE THE COMMUNITY

INFORM AND EDUCATE COMMUNITY

Information and education thus far:

- Distributed to and notified faculty about issues related to new and existing university accommodation policies (e.g. funds for travel to bring young children to meetings, elder care leave).
- Worked with departments to update faculty mentoring plans to include best practices. Mathematics and Chemistry & Biochemistry Departments have both modified policies to take into account changes recommended by the task force. The Chemistry & Biochemistry plan was deemed exemplary. Physics is in the process of considering making changes and should look closely at the approved Chemistry & Biochemistry plan.

OTHER CONSIDERATIONS AND RECOMMENDATIONS

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- The task force envisions that the recommendations outlined here will be of benefit to all DPS faculty and students.
- Implementation of these recommendations will require leadership and cooperation within the departments and across the division.
- Mentorship of faculty and mentorship of students by faculty needs to be a high priority. For students, efforts by faculty to nominate them for awards are important for their overall success at UC San Diego.
- Establish a divisional committee to continue the work of the task force. This new committee should create a plan to monitor gender equity issues, perhaps on an annual basis, and may also want to consider issues related to intersectionality and underrepresented minority faculty and students that may lead to additional recommendations.

OTHER CONSIDERATIONS AND RECOMMENDATIONS

- Department chairs should have diversity and equity training when they begin their positions.
 - Department chairs should also be evaluated on their efforts related to equity, diversity and inclusion.
 - It may be equally important to have training for vice chairs, MSOs and members of leadership councils and graduate admissions committees.
- Consider development of an NSF ADVANCE grant to continue efforts to create a more inclusive environment. Dr. Beth Mitchneck, a former NSF ADVANCE program officer, is currently advising the division on this.
- Future analysis for all three departments within the division should be done in a systematic manner working with an analyst/statistician. Departments should develop equity plans with specific goals that align with the EDI office campus-wide strategic plan.

TASK FORCE ON THE STATUS OF ACADEMIC WOMEN IN THE DIVISION OF PHYSICAL SCIENCES: EQUITY DATA AND RECOMMENDATIONS

Task Force Co-Chairs: Alison Coil and Vicki Grassian

Task Force Members:

Chemistry & Biochemistry: Stacey Brydges, Andrew McCammon, Susan Taylor

Physics: Richard Averitt, Shelley Wright, Avi Yagil

Math: Ioan Bejenaru, Jelena Bradic, Ruth Williams

DPS: Cynthia Dillon (ex-officio member), Sylvia de la Sancha (staff support),
Rob Rome (Assistant Dean)

Task Force Advisory Board Members:

Rommie Amaro, Alina Bucur, Adam Burgasser, Ed Dennis, Ben Grinstein,
Patricia Jennings, Judy Kim, Elizabeth Komives, Katja Lindenberg, Lei Ni,
Jeremie Palacci, Karin Sandstrom

SCHEDULE OF MEETINGS

- 1) Tuesday, May 9, 2017 | 11 a.m.–12 p.m.
- 2) Thursday, June 8, 2017 | 9–10 a.m.
- 3) Friday, September 29, 2017 | 11 a.m.–12 p.m.
- 4) Monday, October 12, 2017 | 2–3 p.m.
- 5) Wednesday, November 8, 2017 | 2–3 p.m.
- 6) Monday, December 11, 2017 | 11 a.m.–12 p.m.
- 7) Monday, January 22, 2018 | 2–3 p.m.
- 8) Wednesday, February 21, 2018 | 10–11 a.m.
- 9) Wednesday, April 4, 2018 | 12–1 p.m.
- 10) Wednesday, April 25, 2018 2017 | 11 a.m.–12 p.m.
- 11) Wednesday, May 2, 2018 | 10–11:30 a.m.
Joint meeting w/Advisory Committee
- 12) Tuesday, May 22, 2018 | 2:30–3:30 p.m.

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