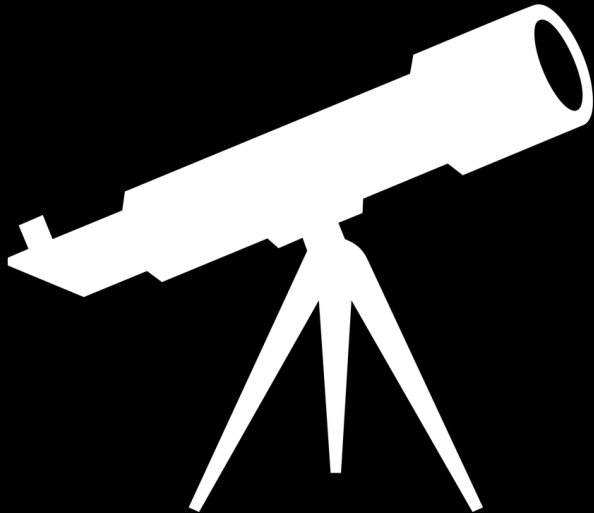


Perspectives on the Wellesley College Physics Department

*Where We've Been and Where
We're Going*

Presenters: Rayna, Caroline, and Mehak
Advised by: Prof. Tracy McAskill



2016 Physics Undergraduate Recipients

In 2016, out of the **8440** graduating physics majors in the country,

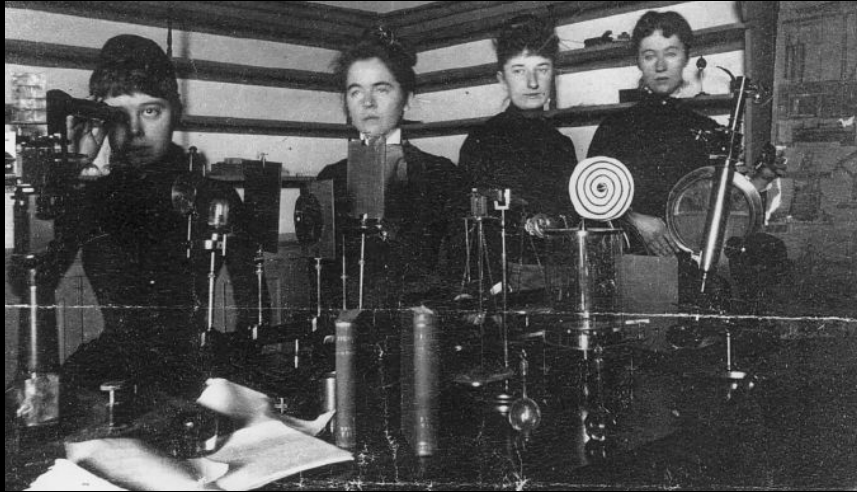
1519 (20%) were women (APS)

In 2016, **16** students graduated from the **Wellesley College** Physics department



of female physics majors in the country in 2016 came from Wellesley College

And those physics majors come from a department with a long *history*...



...and helped build the *future* of the department



Origins of the Wellesley College Physics Department

Sarah Frances Whiting (1876-1916): Founder of the Department of Physics

- Upbringing
 - Ingham University
- Henry & Pauline Durant (1876)
 - Commitment to higher education for women (in science)
- Edward Pickering (MIT & Harvard)
 - Hands-on approach to teaching
- Mentorship
 - Annie Jump Cannon, Isabelle Stone, Louise McDowell



Early - Mid 20th Century: Era of Alumnae as Faculty

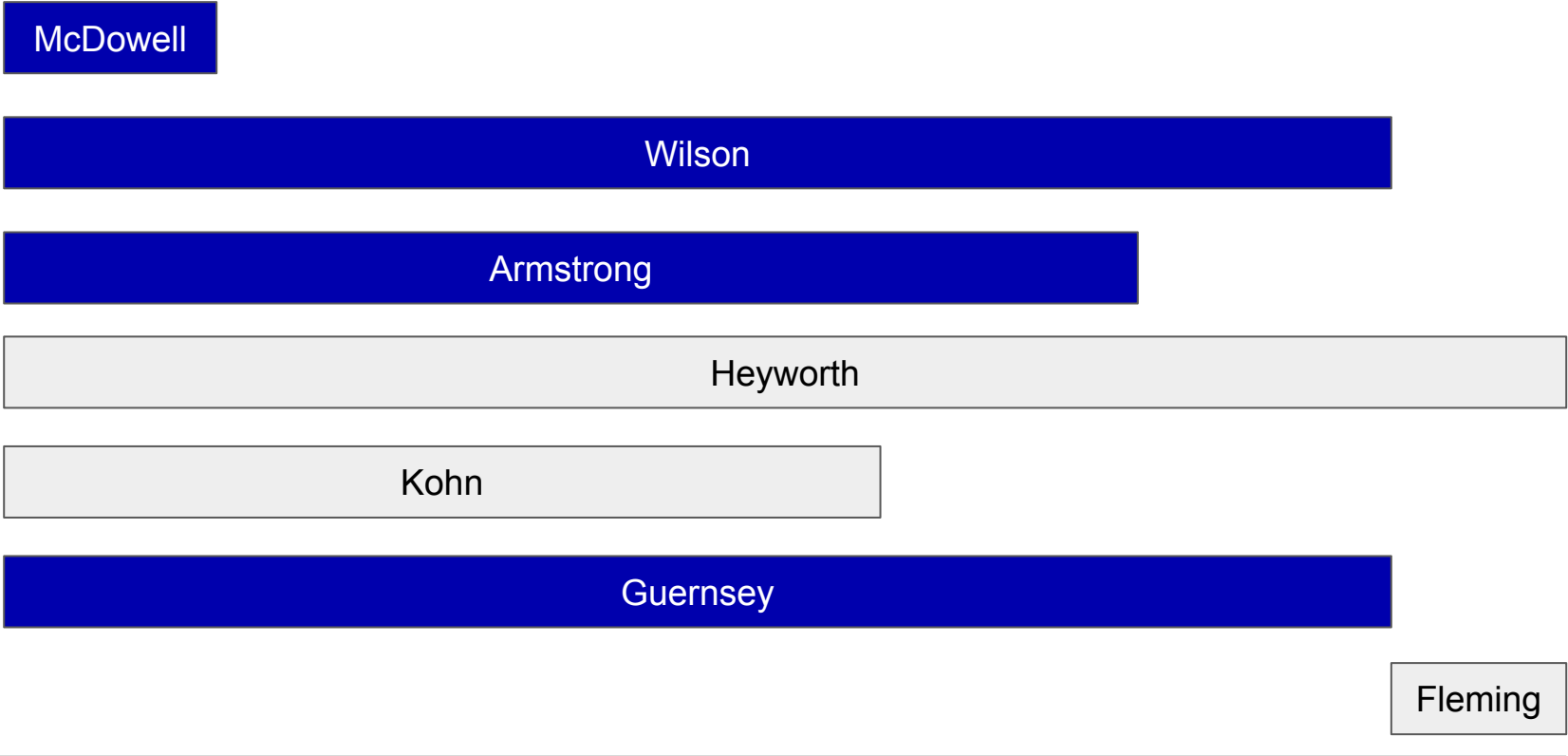
- Major emphasis on mentorship - many Wellesley students come back to teach later on in their careers
- Curriculum changes: Heat, automobile, radio telegraphy, recent developments in electricity, sound, atomic physics, biophysics

Leo Goldberg (Professor at Harvard and University of Michigan president of both the International Astronomical Union and the American Astronomical Society) (1983):

*“I keep thinking of Wellesley. **Everybody** teaches at Wellesley at some time or another”*

Physics Department Associate and Full-time Professors

**Blue Indicates Wellesley Alumnae



1940

1956

Louise Sherwood Mcdowell (1909-1945)

- B.A., Wellesley 1898
- 1909: PhD at Cornell
- First female PhD at National Bureau of Standards (NIST)
- Contributed to: *Principles Underlying Radio Communication during WWI* (not recognized)
- Closely mentored by Sarah Frances Whiting - returned to Wellesley to chair the Physics department



Lucy Wilson (1917-1954)

- B.A., Wellesley 1909
- 1917: Asst. professor of physics at Wellesley
- 1935: Wilson becomes professor of both physics and psychology at Wellesley
- 1939: First dean of students for the college
- 1945: named Sarah Frances Whiting Professor
- 1954: Retired and senior students established a scholarship in her name at Wellesley.



Lucy Wilson

*“I taught about **automobiles**... **Some of the faculty, as we’d say, in the liberal arts, didn’t really approve of the course. It was too near the vocational.** So it gave only one hour credit, but it met for three hours.”*

Janet Guernsey (1942-1978)

- First girl at her high school to take calculus
- B.A., Wellesley 1935
- Master's at Harvard, PhD at MIT while already teaching at Wellesley
- President of AAPT, fellow of APS: AAPT
New England Janet Guernsey
Excellence in Teaching Award



Janet Guernsey

*“I think physics is considerably healthier today, than it was 25 years ago. By that I mean **physicists are beginning to realize that they’ve got to come down out of their ivory tower.** ... Letting them know that **physicists really are, in many ways, making an effort to deal with those components of society’s problems that can be dealt with by physics.** I think this effort is going to continue, because it’s become quite clear that we can’t be just a little elite society of people **who can talk to each other, but not to anybody else.**”*

Late 20th Century-Present: Phyllis Fleming (1953-early 2000s)

- Born and raised in Indiana
- 1946: B.S. at Hanover
- 1955: Ph.D at University of Wisconsin
- 1953-2003: Wellesley College
 - Dean of College
 - Chair and director of Science Center
 - Organized MIT/Wellesley Exchange Program
 - Pinanski Prize for teaching
 - Intro textbook published by Addison-Wesley (1978)
 - Janet Guernsey Award for Exceptional Lifetime Achievement



Past



Present



Conclusions

Wellesley College Physics Department has had historical and important role in expanding the pipeline for underrepresented groups in physics

- Hands-on applications of physics
- Staying Current with Curriculum
- Long lineage of mentorship
- Community-building
- Continue as the department gets larger and more diverse
 - Average number of students doubled (14 vs. 7)

Goals for this project

- Use this historical study to inform Department's future goals
- Develop charts/spreadsheets that consolidate major, faculty, and curriculum information
- Create webpage with this information
- Create faculty profiles to have around physics lounge

Acknowledgements

Special thanks to Prof. McAskill, Prof. Brown, Prof. Hall, Prof. Stark, Prof. French, Prof. McLeod, and Wellesley Archives.

