

Thank you to everyone who attended our first meeting of the semester at the beginning of October! For those of you who couldn't make it: We had a great conversation about the importance of women role models and mentors in positions of leadership and how that influences our own path in science. We are excited about the enthusiasm and direction of LSU Women in Science and look forward to seeing you all at our next meeting!

-Your LSU WIS Leadership Team

The next meeting will be open to everyone. Come as you are and bring anyone you want. It doesn't matter if you're male, female, neutral, trans, gay, straight, black, white, brown, or purple, **if you love science and want to be part of the conversation, join us!**

Fall 2016 meetings

Meetings will be the first Tuesday of the month at 5pm! The December meeting will be a social – More information will be announced in the coming weeks!

NEXT MEETING

Tuesday Nov 1st @ 5pm
Renewable and Natural
Resources Building Rm 141

“Life is not easy for any of us. But what of that? We must have perseverance and above all confidence in ourselves. We must believe that we are gifted for something and that this thing must be attained.”

– Marie Curie



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Perception of Women in Science: #distractinglysexy

By Cassandra Skaggs

Many of us recall the #distractinglysexy social media explosion that occurred in 2015 over Dr. Tim Hunt's remarks at the World Conference of Science Journalists in Seoul, South Korea. Dr. Hunt, who won the 2001 Nobel prize in physiology or medicine, said: "Let me tell you about my trouble with girls... three things happen when they are in the lab... You fall in love with them, they fall in love with you and when you criticize them, they cry." He continued on to describe his idea of single-sex labs in support of women scientists.

These remarks created an instant firestorm resulting in Dr. Hunt's dismissal from multiple posts. Whether or not Dr. Hunt's comments were in jest, the questions arise: do other prominent male scientists have the same opinion or bias towards women in science? If they do, does it really matter?

Topics of this nature continue to spur debate and discussion among scientists and policymakers around the globe. So, let's do what we do best, and no, I'm not talking about falling in love or crying. Let's look at some data and trends! Women who seek science, technology, engineering, and mathematics (STEM) degrees have continued to increase substantially over the last few decades, even over men in biological sciences. However, overall STEM disciplines have not reached parity, and those women who do receive a STEM degree often do not make it into the workforce (Figure 1). Women make up 50.8% of the United States' population, but only 29.0% work in science and engineering (S&E) occupations. So, where is the leak in the STEM pipeline?

The disparity between the sexes does not end with the percentage of women seeking STEM degrees, but includes the support system needed to be successful in STEM occupations that often times favor men. Rosser and Taylor discuss two primary factors that affect women in science: the need to balance a family and career (Figure 2) and a lack of professional networks. Differences in professional referrals, marital status, biological clock to have children, and federal and institutional familial support have created a disparity that can lead to slower career advancements for women. Couple this with the already low numbers of women seeking STEM degrees, and it is easy to see why there is a leak. So yes, negative opinions and bias toward women in STEM from leaders and decision makers does matter. These opinions compound the issue and stagnate the change needed for solutions.

Now, if you are a woman scientist, please do not run and change your major or career just yet. These numbers do show some challenges, but it is important to note the positive changes that are occurring as well. For instance, the backlash over Dr. Hunt's remarks were swift and expressed worldwide by both men and women, resulting in an asterisk next to his impressive career. In addition, the growth rate of women working in S&E jobs, while not up to par, is staggering for some disciplines. The number of women in life sciences shows an increase of 181% and in social science, an increase of 122%, from 1993 to 2013. These trends show potential for future improvement that will require both men and women to work together to close the gap. After all, our strength is in our diversity to form creative solutions to society's problems and how can we do that if we leave out half of the population?



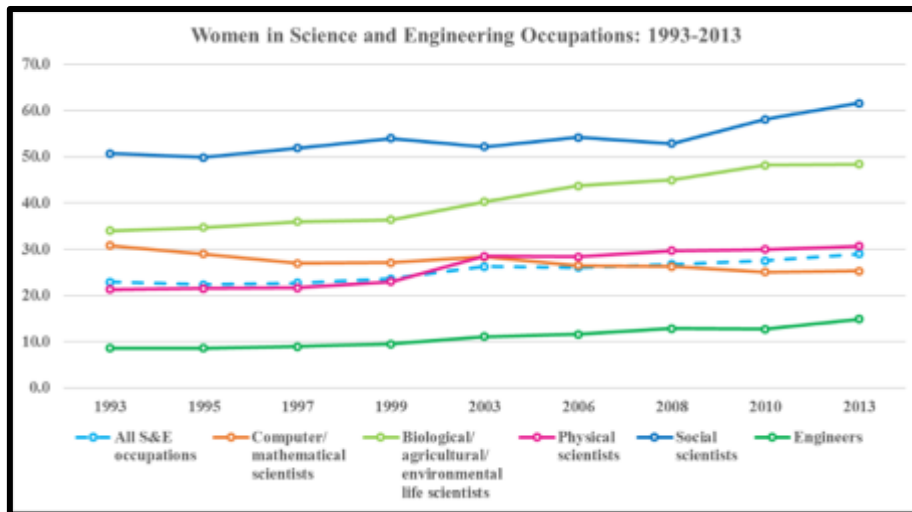


Figure 1. 29% of women worked in science and engineering occupations in 2013. Out of the total jobs for each occupation, 14.9% in engineering were women and 61.6% in social science were women. Note: 2001 data was unavailable.

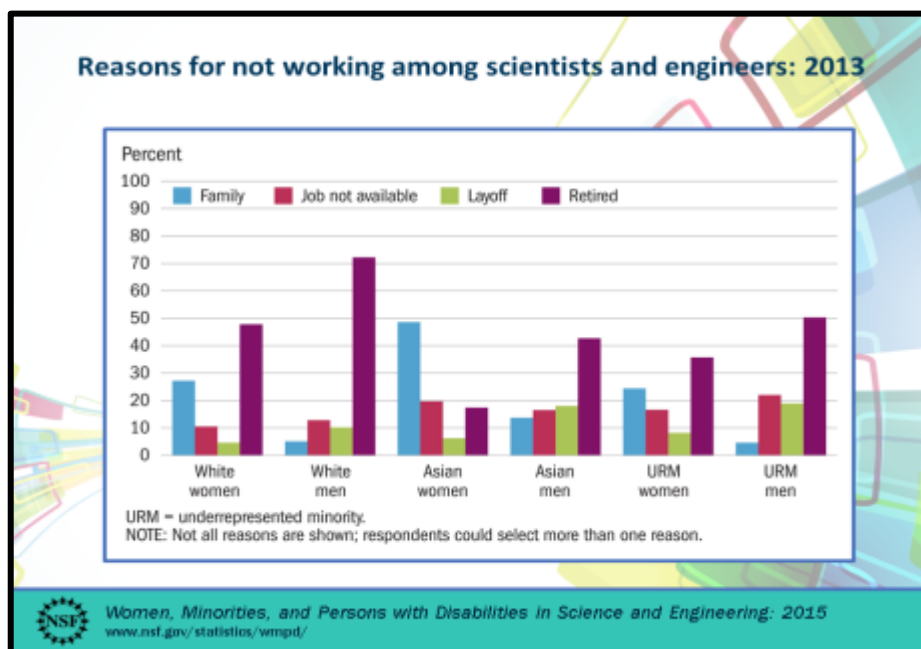


Figure 2. Women across all groups measured, identified family as a reason for not working in science and engineering jobs at a higher percentage than men.

References

- Ratcliffe, R. 2015. "Nobel scientist Tim Hunt: female scientists cause trouble for men in labs." UK News 10 June 2015. <<https://www.theguardian.com/uk-news/2015/jun/10/nobel-scientist-tim-hunt-female-scientists-cause-trouble-for-men-in-labs>>
- Rosser, S. V., and M. Z. Taylor. 2009. "Why Are We Still Worried about Women in Science?". American Association of University Professors. <<https://www.aaup.org/article/why-are-we-still-worried-about-women-science#.wbtt1vkrkm->>>
- National Science Foundation, National Center for Science and Engineering Statistics. 2015. *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2015*. Special Report NSF 15-311. Arlington, VA. <<http://www.nsf.gov/statistics/wmpd/>>
- National Science Board, Science & Engineering Indicators 2016. (NSB-2016-1). Digest (NSB-2016-2). January 2016. <<https://www.nsf.gov/statistics/2016/nsb20161/#/report>>
- National Science Foundation, National Center for Science and Engineering Statistics, SESTATE (1993-2013), Science and Engineering Indicators 2016. <<http://sestat.nsf.gov>>

Historical Woman in Science: Barbara McClintock

By Amie Settlecowski

Dr. Barbara McClintock was an American cytogeneticist who made several revolutionary contributions to the field of genetics over the course of her career, garnering notoriety as a pioneer of modern genetics. McClintock earned her bachelor's, master's, and doctoral degrees in Botany at Cornell University between 1921 and 1927. Despite the fact that women were not able to receive degrees in Genetics from Cornell at that time, her passion for the subject was undeniable and as an undergraduate she was invited to enroll in a graduate genetics course.

McClintock's interests in cytology and genetics led her to pursue graduate research in maize cytogenetics. McClintock and other Cornell graduate students, including George Beadle, Charles Burnham, and Marcus Rhoades, established a maize cytogenetics working group credited with launching the discipline of maize cytogenetics.

In collaboration with another student at Cornell, Harriet Creighton, McClintock used cytogenetic techniques to provide physical evidence for genetic recombination via crossing-over of genes on chromosomes, supporting Thomas Hunt Morgan's previous hypothesis that the exchange of genetic material via chromosomes influenced genetic traits. This success in her early work resulted in several prestigious post-doctoral fellowships, taking her to the University of Missouri, the California Institute of Technology, and, for a short stint, to Germany at the Kaiser Wilhelm Institute in Berlin and the Botanical Institute in Freiburg. Finally, McClintock was offered an assistant professor position at The University of Missouri at Columbia, a position she left after several years because she doubted she would have the opportunity to receive tenure. Eventually she became a staff research scientist at the Cold Spring Harbor Laboratory through the Department of Genetics at the Carnegie Institution of Washington, where she remained throughout her long career.

In addition to describing the physical nature of recombination, McClintock discovered transposons. As she anticipated, her findings were met with some scrutiny. However, the field eventually recognized the ubiquity of transposable elements, and attributed McClintock with their discovery. Evidence for the non-static nature of genetic material ultimately led to paradigm shift, and prompted McClintock's early speculation on epigenetics, or how some genetic elements can control the expression of others. Later in her career McCormick continued to expand her research program, acquiring funding through the National Science and Rockefeller Foundations to study the evolution of different maize varieties throughout Central and South America.

McClintock's strong scientific reputation and achievement led to consistent recognition throughout her career, including being elected as the 3rd woman to the National Academy of Sciences in 1944 and the first woman president of the Genetic Society of America in 1945. She was recognized by the American Association of University women in 1947 and received the first MacArthur (aka "genius") grant in 1981. For her achievements she earned numerous prestigious awards including the Distinguished Service Award from the Carnegie Institution, a National Medal for Science, and for her discovery of genetic transposition she was the first woman awarded an unshared Nobel Prize in Physiology or Medicine.

Further reading

"The Barbara McClintock Papers." Profiles in Science. U.S. National Library of Medicine, National Institute of Health, Bethesda, MA. Web. 24 Oct 2016. <<https://profiles.nlm.nih.gov/LL/>>

"Barbara McClintock." Personal Collections. Library and Archives, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. Web. 24 Oct 2016. <<http://library.cshl.edu/personal-collections/barbara-mcclintock>>

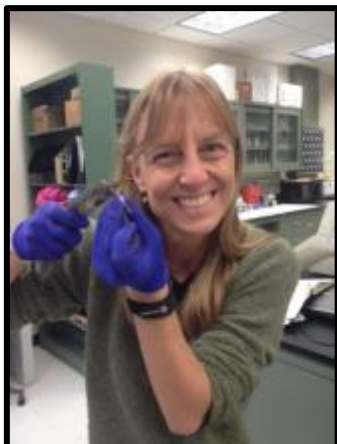
"Barbara McClintock - Biographical". Nobelprize.org. Nobel Media AB 2014. Web. 24 Oct 2016.

<http://www.nobelprize.org/nobel_prizes/medicine/laureates/1983/mcclintock-bio.html>

Pray, L. and Zhaurova, K. (2008) Barbara McClintock and the discovery of jumping genes (transposons). *Nature Education* 1(1):169.



Faculty Spotlight: Dr. Karen Maruska



Karen is currently an Assistant Professor in the Department of Biological Sciences at LSU. She graduated with a B.S. degree from University of New Hampshire, and then got her M.S. degree at Florida Tech and Ph.D. degree at University of Hawaii working with Tim Tricas. She then did a Grass Fellowship in Neuroscience at the Marine Biological Lab in Woods Hole with Al Mensinger, and was a NIH postdoctoral scholar with Russ Fernald at Stanford University. Her research has used fishes as vertebrate models to study how sensory systems function, how hormones influence sensory processing, how animals communicate, and how the social environment influences behavior, brain function, and reproductive capacity.

Who is/are your female role model(s) in science? As a kid, there weren't many female role models in science, but I remember being inspired by strong and successful women from TV and movies (Princess Leia, the bionic woman, Charlie's Angels), from sports, and from family members. One of my first female science role models was Genie Clark ("the shark lady"), who I finally got to meet when I was a graduate student. Now, I see amazing female scientists all around me that serve as role models – from colleagues in the department to famous MacArthur genius fellows.

What is your favorite way to spend free time? I enjoy reading, biking and walking, watching football, playing with my cats, and dabbling in art and photography.

How did you end up at LSU? It was Spring and I had ~1 year remaining on my postdoc funding, so I decided to start regularly checking for job ads and preparing my materials (CV, teaching & research statements, cover letter) for the upcoming application season, which usually increases in late-Summer to Fall. A couple of weeks later I saw the LSU ad and since the description was a good match for me, I decided to apply to get in the groove. When I visited during my interviews, I was impressed with the collegial atmosphere and diverse research interests of the faculty in Biological Sciences, the beautiful campus, nice people, and the great resources and opportunities available. It was a good fit for me, so I took the job, deferred it for a year to finish up my postdoc work and to start collecting preliminary data to start my own lab at LSU.

Is this where you thought you would end up? Yes and no. I knew I wanted to end up in a tenure-track position in a diverse biology department at a major university, but the exact location didn't matter too much to me. I'm pretty adaptable and have lived in lots of different places, so I always knew I could make it work just about anywhere. Since academia is getting so competitive, we don't always have a lot of choices of where we end up – the timing of job opportunities somewhat dictates that.

What are you trying to accomplish this semester? One of my primary goals this semester is to finish and submit several papers (including the last bit of work from my postdoc 4 ½ yrs ago!), and as always, help keep my students moving forward on their awesome research projects and professional development skills.

What is your favorite thing about being a scientist? Lots of things! I love the curiosity aspect of science, the freedom to ask interesting questions and then design experiments to test ideas, interpret results in a broader context, and then share it with others via talks, publications, and outreach venues. Always learning and discovering new things that no one in the world yet knows is awesome, and the opportunities to travel, mentor students, and have a flexible work schedule are also great perks.

What advice do you have for female postdocs and grad students? Go for it! Don't let anything or anyone derail you from your scientific or personal goals. Surround yourself with people (peers, mentors, family, friends) that support and encourage you, and take every opportunity to gain experience, learn new things that will advance your career, and get advice from multiple perspectives. Lastly, make sure you are passionate about what you're doing, and happy and having fun! – if not, don't be afraid to make a change.

Member Spotlight: Dr. Lorelei Patrick

If you called Dr. Lorelei Patrick bat-crazy, she'd probably take it as a compliment. That's because she's been studying these creatures of the night most of her academic career. Originally from the west coast (near Portland, OR), she completed part of her undergraduate and all of her Master's degree at Portland State University studying morphological differences in Costa Rican bats. She then studied the community structure of bats in North American deserts to earn her Ph.D. from LSU. She's currently a Post-Doc for the Tigers, but has also worked at the Oregon Health and Science University as an administrative assistant for an immunology lab, claiming that the experience was better than "slinging pizzas" at Papa Murphy's Pizza.

Describe the research you do in one sentence. I am a mammalian ecologist currently working to understand how confidence and self-efficacy in research change with time and experience in undergraduate and graduate students.

What do you enjoy most about being a scientist? The thrill of discovery! I know it sounds really cliché but it's true. I also like sharing my passion for science with the students I teach.

What is your favorite thing to do on the weekends? I try not to work much or at all on the weekends unless I have a looming deadline. I've found that I am much more productive if I take the time to do things I like to do on the weekends. This includes sleep, watching movies, cooking, baking, needlework, and reading books with plots.

What advice would you give to a woman pursuing higher education (M.S., Ph.D.) in the sciences? It's the same advice I give anyone thinking about pursuing an advanced degree: Will the degree help get you where you want to go in life? If so, then go for it! But it's okay to reassess part way through your degree program (or multiple times) to make sure that you're still getting what you want and need out of it.

What are your future career goals? Ideally, I'd like a tenure-track position at a smaller college/university where teaching and research are valued. But, I'm also interested in non-academic positions if they would allow me to pursue research or outreach.

What lessons have you learned in your career so far? A lesson I learned early on: never work for assholes if you can help it. As an undergrad, I worked in a biomedical research lab run by a rather egotistical MD. His research associate (a really gifted woman who helped me a lot) and the research technicians kept the lab running and publishing important papers, but his arrogance really bothered me. It made me realize I don't work very well for someone who doesn't value the people that work for them. I've made a point ever since to make sure that I can work well with a person before I ask them to be an advisor or mentor.

You're a new addition to the crayon box. What color would you be and why? I guess I'd be kind of a smoky purple color since that's my favorite color (nothing to do with LSU, I just like purple).

If you were given a million dollars to do any research project you wanted, what would it be and why? Most bat studies tend to be short term or only collect data once a year, so I think I would use the money to start a long-term bat monitoring program to assess community and population dynamics throughout the field season for as many years as the funding lasted. Preferably somewhere with a nice field station and hiking nearby or close to where I live 😊.

