

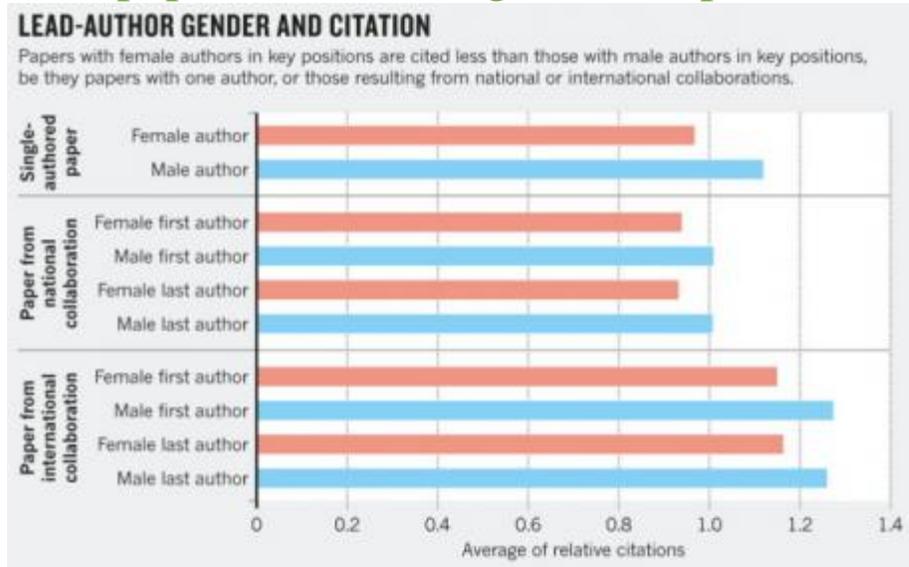
## UC Davis ADVANCE Blog Entries

BLOG ENTRY

December 12, 2013

Jonathan Eisen

### New paper on “Global gender disparities in science”



From Larivière et al. 2013. Nature 504, 211–213 (12 December 2013) doi:10.1038/504211a.

There is an interesting new paper in Nature of interest. The paper is titled “[Bibliometrics: Global gender disparities in science](#)” and is by Vincent Larivière, Chaoqun Ni, Yves Gingras, Blaise Cronin & Cassidy R. Sugimoto. In the paper the authors report a detailed analysis three parameters:

1. authorship of published scientific papers (which they use as a surrogate for research output)
2. co-authorship on papers (which they use as a surrogate for collaboration)
3. citations (which they use as a surrogate for scientific impact)

They then assigned gender to authors using multiple sources and examined the relationships between the 3 listed parameters and gender. And the findings are pretty striking.

I note – it is worth going to the Nature web cite for this article because some of the figures are interactive and one can click on different fields and change the plots.

The authors state – before digging into the details of their analysis “In our view, the scale of this study provides much-needed empirical evidence of the inequality that is still all too pervasive in science. It should serve as a call to action for the development of higher education and science policy.” A pretty strong statement that at least to me seems to be worth considering given their analysis.

Among their findings

1. Globally men make up > 70% of the “fractionalized authorships” of scientific papers.

2. Countries in S. America and E. Europe have somewhat better (on average) gender equity in authorship
3. As shown previously, the gender ratio varies enormously between fields
4. In terms of collaboration women tended to be more “domestically oriented” (i.e., focused on within country collaborations) than men.
5. And the finding getting the most press — papers for which a woman had a prominent author position received fewer citations (on average) than those in which a man had such prominent position.

The authors then discuss the implications of their findings and make some recommendations for future actions. Among their conclusions (which I quote directly so as to not alter any implied meaning):

1. “barriers to women in science remain widespread worldwide, despite more than a decade of policies aimed at levelling the playing field”
2. “programmes fostering international collaboration for female researchers might help to level the playing field”
3. “Any realistic policy to enhance women’s participation in the scientific workforce must take into account the variety of social, cultural, economic and political contexts in which students learn science and scientific work is performed”

This paper is definitely worth looking at in detail. And I note there is also a lot of supplemental material that might be worth downloading and playing around with. Data is critical for understanding the gender disparities in science and for planning and then testing ways to correct such disparities.

BLOG ENTRY

February 6, 2014

Jonathan Eisen

## The UK House of Commons Committee Takes on Low # of Female Scientists

Well, this is both important and very interesting. There is a new report just released by the UK House of Commons Science and Technology Select Committee entitled "[Women in scientific careers](#)". The report covers many issues of direct relevance of the UC Davis ADVANCE program and in general to issues of diversity in the sciences. The Nature News Blog has a story by Daniel Cressey on the report: "[UK politicians demand action over dearth of female scientists](#)". The news story focuses on how the report is placing a lot of the blame for the lack of women scientists in the UK on universities themselves.

From Nature News:

*Many universities are devolving their responsibilities to deal with this issue down to the level of research groups, the report says, and are thus failing in their obligation to improve science careers for all researchers.*

I am not sure if I interpret the report in the exact same way but there is no doubt this is part of it's theme. The summary of the report has a bit more breadth than this. Below is the summary with some bolding emphasis by me:

*Many attempts have been made to improve the under-representation of women in science, technology, engineering and mathematics (STEM) careers in the UK. Yet currently **only 17 per cent of STEM professors are women**. It is astonishing that despite clear imperatives and multiple initiatives to improve diversity in STEM, women still remain under-represented at senior levels across every discipline. One compelling reason to tackle this problem is that **the UK economy needs more STEM workers and we cannot meet the demand without increasing the numbers of women in STEM**.*

***There is no single explanation for the lack of gender diversity in STEM; it is the result of perceptions and biases combined with the impracticalities of combining a career with family.** Scientists often consider themselves to be objective and unbiased, yet studies have shown that scientists are susceptible to the same biases as the rest of the population.*

*Therefore we have recommended that **diversity and equality training should be provided to all STEM undergraduate and postgraduate students**. It should also be **mandatory for all members of recruitment and promotion panels and line managers**.*

*Early academic STEM careers are characterised by short term contracts, which are a barrier to job security and continuity of employment rights. This career stage coincides with the time when many women are considering starting families, and because women tend to be primary carers, they are more likely than men to end their STEM career at this stage. We call on the Government to work with the higher education sector to **review the academic career structure and increase the number of longer-term positions for post-doctoral researchers**. We have found that what benefits women benefits everyone in the STEM workplace.*

*Emphasis is often placed on inspiring young girls to choose science, which is commendable, but such efforts are wasted if women are subsequently disproportionately disadvantaged in scientific careers compared to men. The Government recognises the importance of gender diversity in STEM, but its efforts appeared to be largely focused on encouraging girls to study STEM, with little focus on enabling them to stay and progress in STEM careers. We were disappointed that BIS spending dedicated to improving diversity in STEM was virtually halved in the 2010 Spending Review and we recommend that the Government should monitor the effects of its policies on cutting and “mainstreaming” diversity funding.*

The report has a lot of useful detail and references throughout and is definitely worth reading. If you only look at one part I recommend looking at the Conclusions and Recommendations section which goes through the “Business case for retention of women in science” and “The role of Government” and “Women in academia” “The nature and funding of research careers” and “Management of research careers by higher education institutions”. It is good to see these issues rising up to higher and higher levels in government. We need to make the scientific workplace more fair and figure out ways to improve the diversity of scientists and this will hopefully help some.

BLOG ENTRY

February 19, 2014

Jonathan Eisen

## Interesting blog post regarding sociological literature on women in science

There is an interesting blog post worth checking out by Nathalie Pettorelli entitled "[Ill-informed prophecies and the future of women in ecology](#)". The post is a response to an article that was published in the journal "Frontiers in Ecology and Evolution" entitled: "[The future of ecology: a collision of expectations and desires?](#)" by Jeffrey A Lockwood, Derek S Reiners, and William A Reiners.

In the response Dr. Pettorelli discusses multiple aspects of the Lockwood et al. paper and related issues regarding women in science and sociological studies of women in science. It includes a nice collection of references and some important conceptual points. For example, she asks about why a sociological study of women and men in ecology was published in an ecology journal and not in a journal that focuses more on sociological studies. She also discusses what she (and others) believe are flaws in the Lockwood et al. study.

This blog post is definitely worth a look.

BLOG ENTRY

February 23, 2014

Jonathan Eisen

## Wanted – participants and helpers for a “Women in Science” Wikipedia Editathon at #UCDavis March 4

[Dawn Sumner](#), a Geology Professor at UC Davis has suggested it might be good to host a Wikipedia Edit-athon on Women in Science at UC Davis March 4 to go with the one happening at the Royal Society. Some more detail is below:

- What is an Edit-athon? It is a coordinated effort to create and edit Wikipedia pages in an area in need of more / better content.
- Why have one for Women in Science? Well, many have identified a need for more information in Wikipedia about various women scientists.
- What is happening at the Royal Society? They are hosting an Edit-athon on March 4. More information is [here](#). And also see this article from the [Guardian](#).

So – anyone interested? I think this is a wonderful idea and am posting about it here since it seems like it has a great connection to the UC Davis ADVANCE program. I am hoping to find some other people at UC Davis who are interested in participating. If you are send me an [email](#), post to Twitter, or comments below.

BLOG ENTRY

February 24, 2014

Kim Shauman

## Nature News Blog: Chemists call for boycott over all-male speaker line up

Scientists are using blogs, social media and other web tools to call attention to inequities in the practice of science and, perhaps more importantly, to create opportunities for redressing them. Case in point:

A [Nature News Blog](#) posting by Elizabeth Gibney, highlighted an effort by scientists to highlight the absence of women on a preliminary list of invited speakers for a major international chemistry conference. The post reads (in part):

*An [open letter](#) on the website [Change.org](#) has called for a boycott of the 15th International Congress of Quantum Chemistry (ICQC), to be held in Beijing in June 2015. The move came after a list was posted on the conference website that allegedly showed no women among 24 speakers and 5 chairs and honorary chairs. The list, screenshots of which were seen by Nature, has since been taken down.*

*The letter, which has gained more than 600 signatures in 48 hours, was authored by three eminent theoretical chemists: Emily Carter of Princeton University in New Jersey; Laura Gagliardi of the University of Minnesota; and Anna Krylov of the University of Southern California in Los Angeles.*

The letter prompted a response and a potentially positive (i.e., more inclusive) outcome:

*In an e-mail to Nature, Josef Michl, president of the International Academy of Quantum Molecular Science (IAQMS), which runs the congress, said that the three letter writers had pointed out “a very serious problem” and were “justifiably concerned” with the partial list, which accounted for two-thirds of the eventual speakers.*

*According to Michl, Zhigang Shuai, a theoretical chemist from Tsinghua University who heads the conference organizing committee, had already asked Michl to send academy members the partial list and ask for suggestions of speakers — specifically women — to complete the line-up. The response to this had been excellent and the final list would be gender-balanced, Michl adds.*

But the response also highlights a reliance on practices that reinforce the inertia of culture change:

*Michl’s letter, a draft of which has been seen by Nature, adds that a large fraction of the people already on the list were outside the control of the organizing committee, including medalists and newly elected IAQMS members and previous organizers.*

Perhaps such practices that limit opportunities for broader inclusion of scholars in communities of inquiry should be examined? A systematic and balanced examination of these “the way we do it” practices might reveal their drawbacks and open the way for practices that benefit both the community of scientists and the scientific endeavor.

BLOG ENTRY

February 25, 2014

Jonathan Eisen

## Interesting article in the Guardian on Women in Academia

There is an interesting article in the Guardian of direct relevance to the ADVANCE program. Entitled "[Women in academia: what does it take to reach the top?](#)" – it is an article by Carol Black and Asiya Islam – two prominent UK female academics. And it is a sort of follow up on a [call published last week from Cambridge University academics](#) criticizing how Cambridge appoints staff as being biased against women.

The article gives their personal point of view relative to the Cambridge letter and in regards to the struggles many women have in advancing their scholarly careers even when their scholarship is excellent.

I call attention in particular to the last sentence"

*No matter how much women promote themselves and learn confidence through training courses, the only way the current shocking scarcity of women in higher positions can change is through eliminating systemic and structural bias in policies and procedures that favours white men.*

Hat tip to Rachel Armstrong on Twitter for pointing me to this article.

*Women in academia: what does it take to reach the top?*<http://t.co/Gz7MXuUBKZ> via [@guardian](#)  
— Rachel Armstrong (@livingarchitect) [February 25, 2014](#)

BLOG ENTRY

March 4, 2014

Jonathan Eisen

## A must read: How to Level the Playing Field for Women in Science by Mary Ann Mason

This is a must read for anyone interested in Science / Academia: [How to Level the Playing Field for Women in Science – Advice – The Chronicle of Higher Education](#). By [Mary Ann Mason](#), who is a professor at UC Berkeley and has extensive experience on studying issues relating to women in science and academia. She details in this article four key things that can be done to reduce the “baby penalty”:

- Better (and more) child-care options
- Effective dual-career policies
- Childbirth accommodations
- Compliance with Title IX

Definitely worth reading. And worth checking out some of the web material from her including

- [Dobabiesmatter.com](#)
- [Toolsforchangeinstem.org](#)

(Thanks to Madhu Katti – who posted this to Facebook). Crossposted from The [Tree of Life Blog](#).

BLOG ENTRY

March 13, 2014

Jonathan Eisen

## New PNAS paper on stereotypes leading to bias against women in math

There is a new PNAS paper of interest: "[How stereotypes impair women's careers in science](#)". It just came out a few days ago and has generated a bit of press including these stories:

- John Bohannon in Science: [Both Genders Think Women are Bad at Math](#)
- Mark Prigg in the Daily Mail: [Can women do math? New study finds both sexes believe men are better – regardless of a person's actual ability](#)

Basically, in the study the authors created an "experimental market" and tested how people "hired" subjects to perform an arithmetic task. And they found that both women and men were more likely to choose men for the task, even though both genders were expected to perform equally well. It is worth looking at, though I am by no means expert enough in the methods used to know how sound it is.

BLOG ENTRY

March 13, 2014

Jonathan Eisen

## Interview of Eileen Pollack by Tom Levenson on "Why So Few Women in Science"

There is a very interesting interview on "Blog Talk Radio". Tom Levenson interviews Eileen Pollack about "Why So Few Women in Science". [Levenson](#) is a science journalist, professor and all around brilliant scholar at MIT. Pollack is a wonderful writer, scholar and Professor at the University of Michigan and also author of an [upcoming book on women in science](#) (she has a background in physics). The interview is wide ranging and worth listening to - all the way through.

New Science Podcasts with [Virtually Speaking Science](#) on BlogTalkRadio

BLOG ENTRY

April 29, 2014

Jonathan Eisen

## Exactly the type of thing that should not happen: Penn denied prof tenure for taking child-care leave

Well, this is not a good (as in feel good & happy) kind of story: [Penn denied prof tenure for taking child-care leave](#). The article, at Philly.Com says that this professor (Kristen Stromberg Childers) is suing U. Penn over the case.

A grievance panel that reviewed her denial of tenure reported that the chairwoman of Penn's School of Arts and Sciences' personnel committee "inappropriately" wrote to the school's dean that "committee members found it especially hard to judge productivity in light of Dr. Stromberg Childers' family leave time and her junior leave." The dean later said in a letter that it was "difficult to give a balanced assessment" of the professor's productivity "because of the amount of family leave she has had."

Really? How about just assessing her without considering the amount of time she has been there but just her body of work? That would be one option. Another would be – rather than denying her tenure – to figure out how to assess her because that is your job. Seems like people should not be denied tenure just because some evaluators have a problem assessing people who take approved leaves. I hope the policies and practices we are working on at UC Davis will prevent such nonsense.