How to create healthier research labs in a hypercompetitive world

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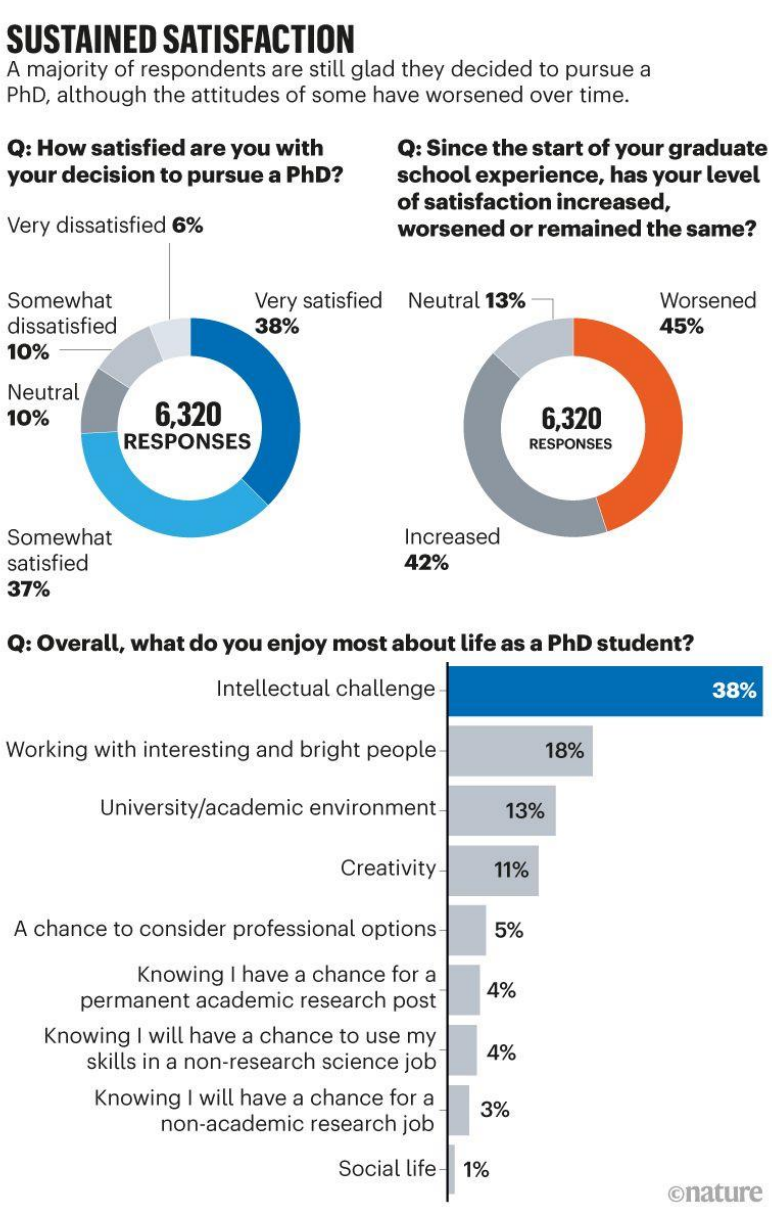
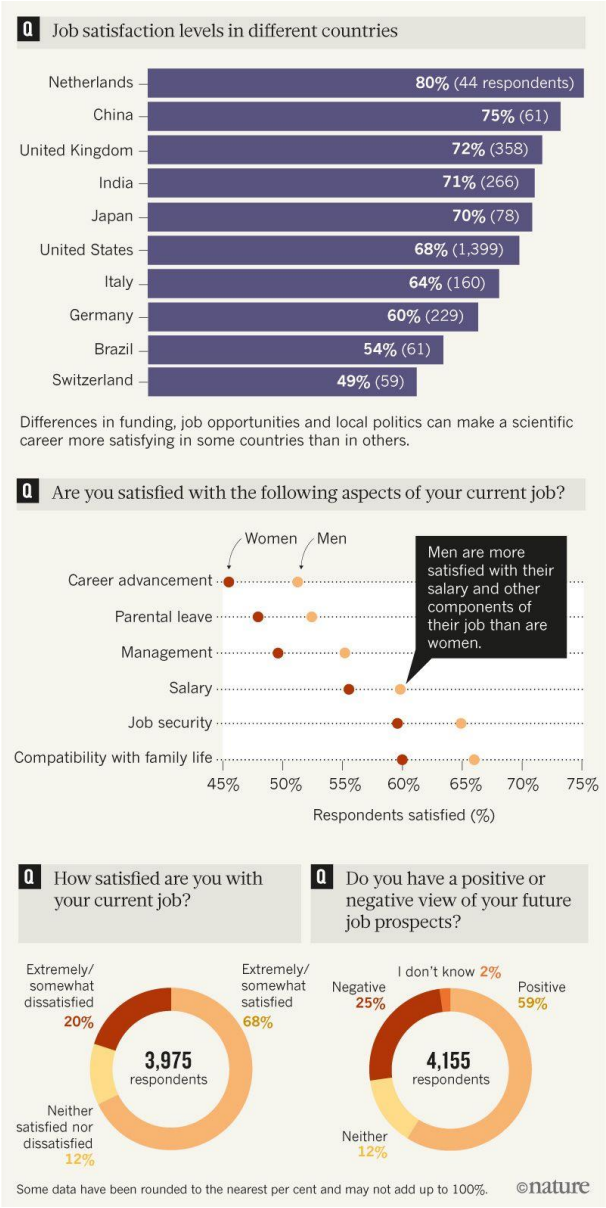
Doing science today: the good, the bad and the ugly

Doing science today: the good





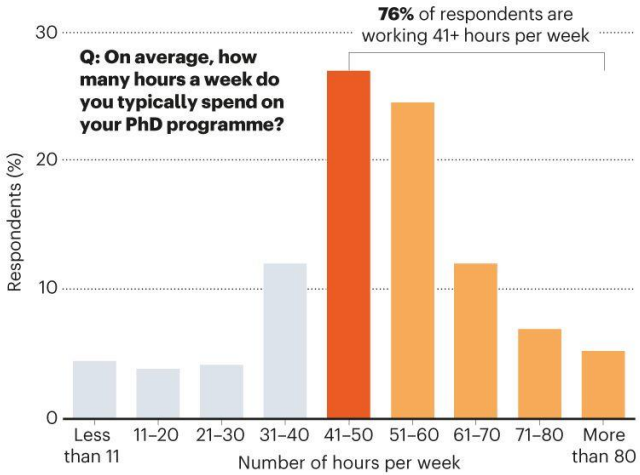
Woolston. 2019. *Nature* 575: 403-406

Woolston. 2018. *Nature* 562: 611-614

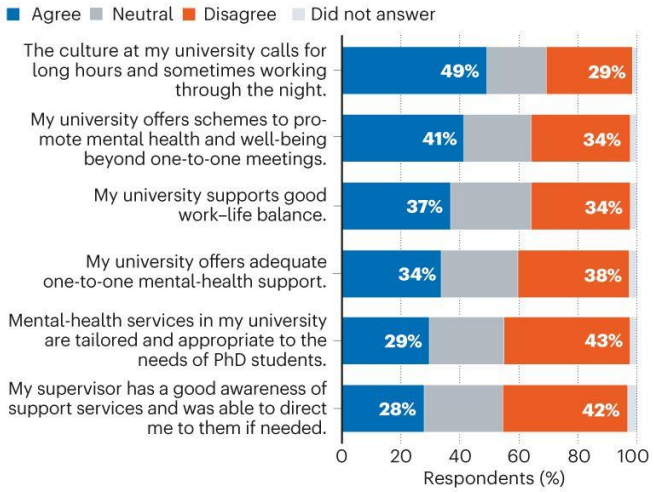
Doing science today: the bad and ugly

OVEREXTENDED AND STRESSED

Long hours in the laboratory and other demands have taken a toll on PhD students' well-being and mental health.



Q: Do you agree or disagree with the following statements?



36% of respondents have sought help for anxiety or depression caused by PhD studies. One-third of them sought help from places other than their institution, and 18% sought help at their institution but didn't feel supported.

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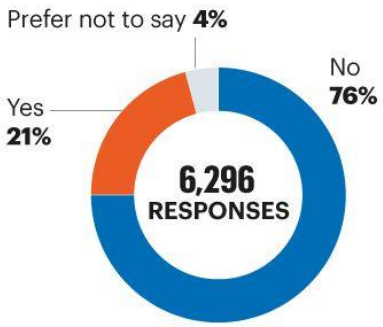
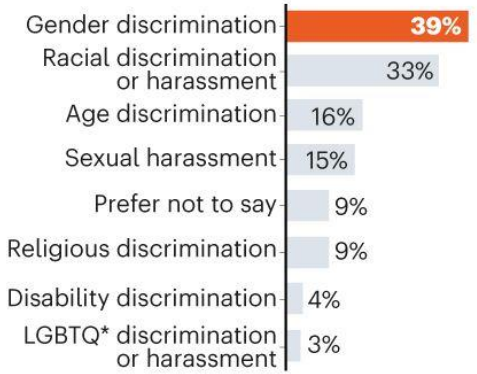
BAD BEHAVIOUR

Instances of harassment and gender or racial discrimination remain distressingly commonplace. The most frequently reported perpetrators are supervisors.

Q: Have you experienced discrimination or harassment in your PhD programme?



Q: If yes, which of the following have you experienced?



*People from sexual and gender minorities.

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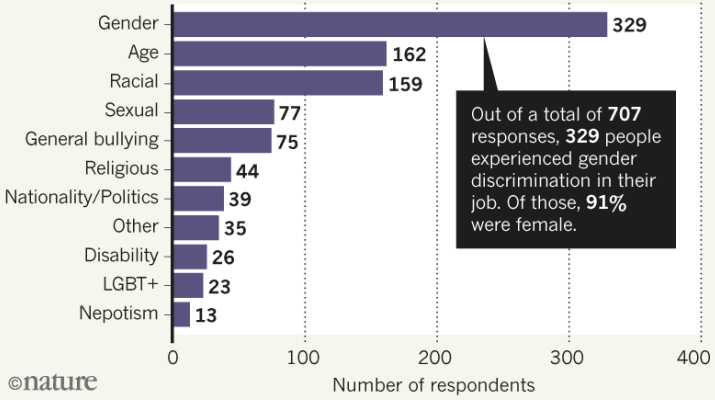
Q Have you experienced discrimination or harassment at your current job?



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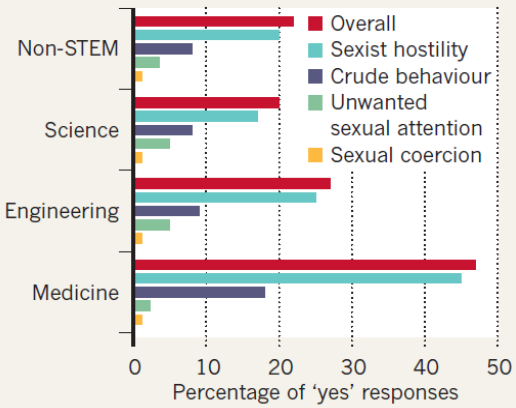
Doing science today: the bad and ugly

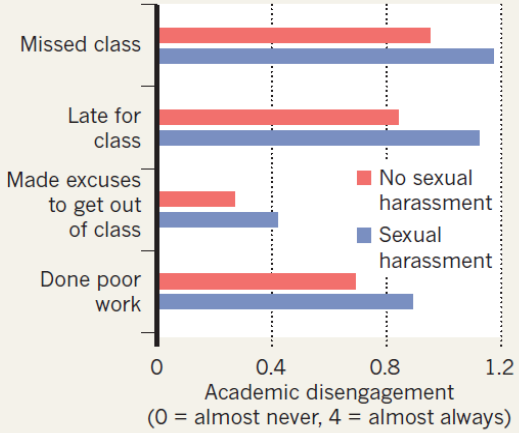
PERVASIVE PROBLEM

All forms of sexual harassment are prevalent in US academic science, a new report finds.

Harassment by major. The proportion of female students in the University of Texas system who report having been harassed by faculty members or staff varies between those who major in science, technology, engineering and medicine (STEM) and those who do not.

Academic impact. Female science majors at the University of Texas who say they have been harassed by faculty members or staff also report higher rates of disengagement with their studies.





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Study Digs into Sexual Harassment During Fieldwork

Ambiguous rules and absent consequences are linked to harassment.

Ashley P. Taylor
Oct 17, 2017

ISTOCK, MARQUESPHOTOGRAPHY

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NEWS · 24 FEBRUARY 2020

Biologist exits prestigious post years after violating sexual-harassment policy

The incident raises important questions about how institutions handle accusations of harassment that occurred at different universities – particularly in the #MeToo era.

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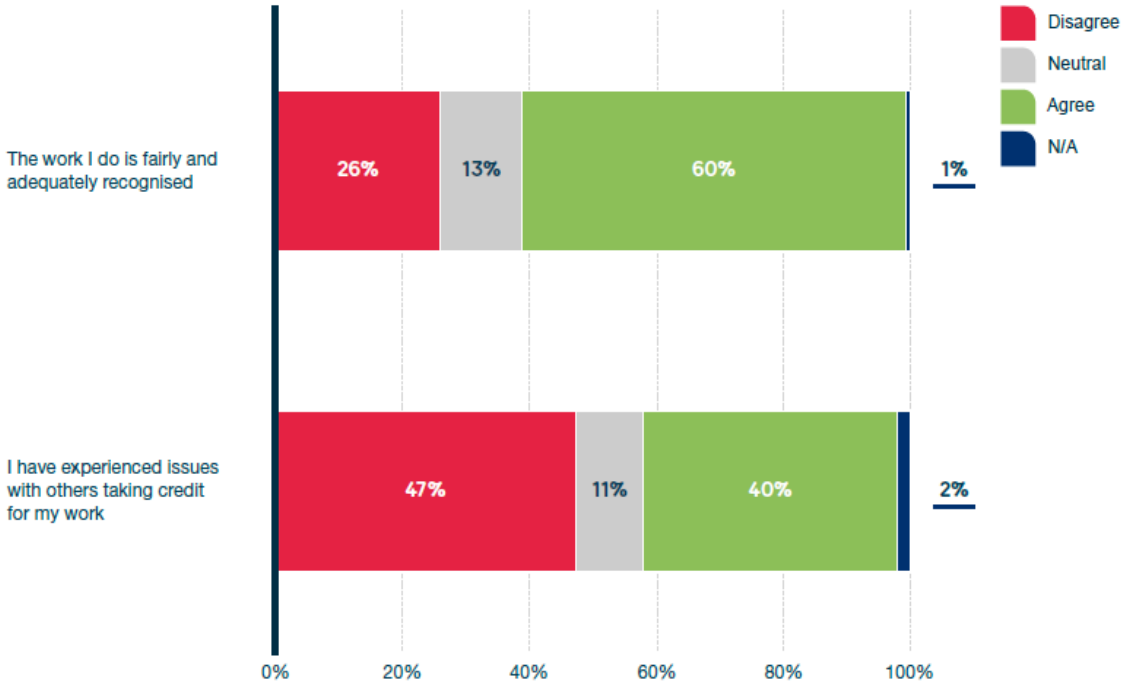
SHARE

Christian Ott and other Caltech astronomers are housed in the Cahill Center on campus. LANCE HAYASHIDA/CALTECH STRATEGIC COMMUNICATIONS

Caltech suspends professor for harassment

Witze A. 2018. *Nature* 558: 352-353

Doing science today: the bad and ugly



	Disagree	Agree
I think current metrics have had a positive impact on research culture	58%	14%
My institution/workplace places more value on meeting metrics, than it does on research quality	33%	43%
I feel pressured to meet Key Performance Indicators/metrics, e.g. REF, grant funding	22%	54%

https://wellcome.ac.uk/reports/what-researchers-think-about-research-culture

An old problem that is now getting increased attention

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EDITORIAL · 13 NOVEMBER 2019

The mental health of PhD researchers demands urgent attention

Anxiety and depression in graduate students is worsening. The health of the next generation of researchers needs systemic change to research cultures.

"These results paint a shocking portrait of the research environment – and one we must all help change. The pressures of working in research must be recognised and acted upon by all, from funders, to leaders of research and to heads of universities and institutions. As a funder, we understand that our own approach has played a role. We're committed to changing this, to foster a creative, supportive, and inclusive research environment."

Jeremy Farrar, Director of Wellcome.

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WORLD VIEW · 09 MAY 2018

Harassment should count as scientific misconduct

Scientific integrity needs to apply to how researchers treat people, not just to how they handle data, says Erika Marín-Spiotta.

Erika Marín-Spiotta

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WORLD VIEW · 01 OCTOBER 2019

We are all complicit in harassment and abuse

To combat bad behaviour, researchers must collectively create ways to take responsibility, says Virginia Valian.

Virginia Valian

The National Academies of SCIENCES ENGINEERING MEDICINE

ACTION COLLABORATIVE ON PREVENTING SEXUAL HARASSMENT IN HIGHER EDUCATION

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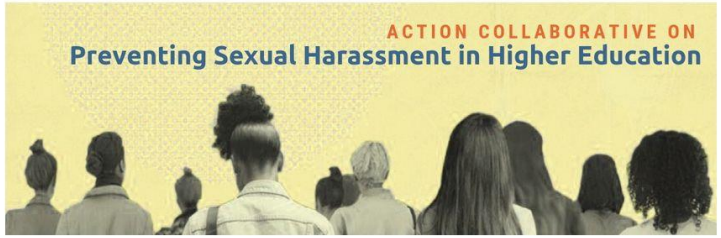

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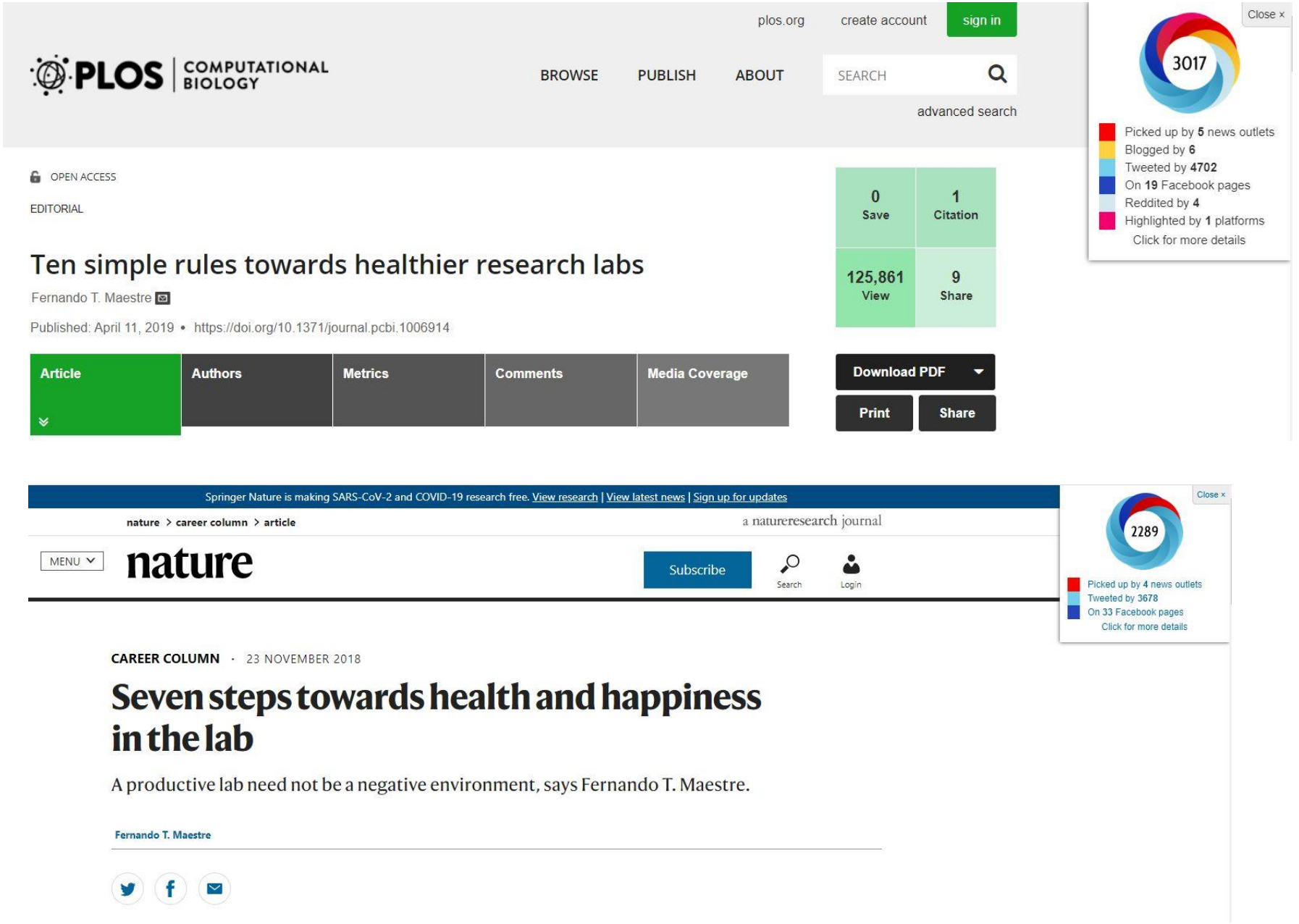
Sexual Harassment in the Sciences

Representatives and Senators should co-sponsor the Combating Sexual Harassment in Science Act of 2019.

A 2018 National Academies report titled "Sexual Harassment of Women" shows that sexual harassment in the sciences has been an ongoing issue for decades. As an example, according to a 2003 study, 58% of women faculty across all fields experience or encounter sexual harassment in academia.

In particular, female faculty in science, engineering, and medicine who experience sexual harassment most commonly report three negative professional outcomes. They step down from leadership positions to avoid the perpetrator, leave their institution, or leave their field altogether. These consequences are damaging to the scientific community as a whole.

What can we do to fix this? Let´s start by creating healthier research environments within our labs



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EDITORIAL

Ten simple rules towards healthier research labs

Fernando T. Maestre

Published: April 11, 2019 • https://doi.org/10.1371/journal.pcbi.1006914

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CAREER COLUMN · 23 NOVEMBER 2018

Seven steps towards health and happiness in the lab

A productive lab need not be a negative environment, says Fernando T. Maestre.

Fernando T. Maestre

Maestre FT. 2018. *Nature*, doi: 10.1038/d41586-018-07514-7

Maestre FT. 2019. *PLoS Comp Biol* 15: e1006914

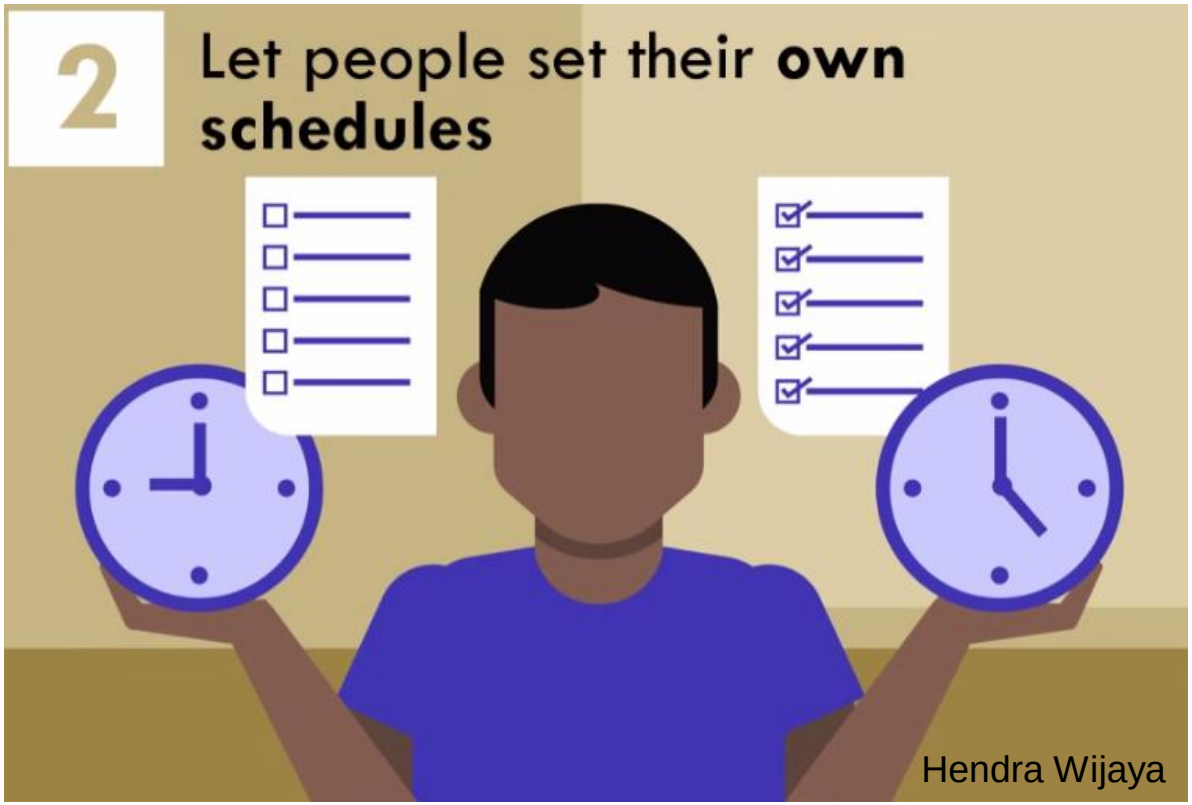
Ten simple rules for creating a healthier research environment

Hendra Wijaya, University of Sydney

→ We work more efficiently and are more creative when we are happy

→ Putting yourself in the situation of the others; being kind; banning all forms of harassment and discrimination; being sensitive when it comes to dealing with personal/family/ health situations & and carefully listening to lab members regarding any matter related to their work

Ten simple rules for creating a healthier research environment



→ As PIs, we should not strictly control lab members' schedules and be flexible regarding their working preferences

→ We should be evaluated by the outcome of our work rather than by the time we spend in our workplace

Ten simple rules for creating a healthier research environment

→ Being grateful not only has very positive knock-on effects on the work and personal well-being of lab members but also helps to build confidence and compromise among them.

→ Showing our gratitude to lab members is important because their work is crucial to ensure the smooth running of a research group.

Ten simple rules for creating a healthier research environment

→ Labs with clearly established hierarchies and “top-down” approaches may lead to toxic relationships and limit the capacity of lab members to think critically

→ Treating lab members as executors of our instructions is a huge lost opportunity

Ten simple rules for creating a healthier research environment

→ Collaboration brings multiple opportunities for learning and professional development, particularly for ECRs

→ Within-lab collaborations help lab members to get along better with each other and prepares them to set up collaborations with colleagues from other institutions

→ Creating a collaborative, rather than competitive, environment within research labs fosters motivation, productivity and creativity

Ten simple rules for creating a healthier research environment

→ We must not compare our lab members to one another or with ourselves when we were students and/or postdocs

→ Every person is different and, as PIs, we should never forget that our major role as mentors is to foster everyone's capabilities and help them to fulfill their potential and professional ambitions

Ten simple rules for creating a healthier research environment

→ Stress associated with excessive workloads is one of the main reasons behind mental health problems in academia

→ PIs should not expect lab members to work beyond normal hours, during weekends, and on holidays

→ PIs must discuss/share with lab members resources and tips to work more efficiently so they can maximize their productivity within normal working hours

Ten simple rules for creating a healthier research environment

→ We all have either experienced or heard about PIs who dictate authorship inclusion or order, or who insist on being authors on every paper produced by lab members, regardless of their contribution. This should be abolished

→ We can give proper credit in multiple ways: involving technicians in publications when they have contributed to them, leaving “senior” positions to postdocs & acknowledging the intellectual authorship of lab members

Ten simple rules for creating a healthier research environment

→ Focusing on success while living under continuous rejection may put more pressure on the work of our ECRs, increasing their frustration and anxiety levels

→ Although rejection always hurts, we must embrace it as another part of our job

→ And because successes are not so common, they must be properly celebrated!

Ten simple rules for creating a healthier research environment

→ PIs should:

i) facilitate that lab members develop their own network of contacts
ii) allow time and resources to train lab members in critical aspects for their professional development
iii) allow graduate students/postdocs to supervise BSc and MSc theses, and offer postdocs the possibility of co-supervising PhD students

And continue with some (doable) institutional measures

Take very seriously and ban all forms of harassment

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II Protocolo de prevención y actuación contra el acoso y ciberacoso sexual, por razón de sexo, por orientación sexual y por identidad y/o expresión de género en la UC3M

Second protocol for the prevention of and against sexual harassment and cyber sexual harassment, harassment based on sex, sexual orientation, and gender identity and/or expression at Universidad Carlos III de Madrid

Solicitud de activación del protocolo de acoso sexual

Request for activation of protocol against sexual harassment

UAB
Universitat Autònoma de Barcelona

Observatori per a la Igualtat UAB

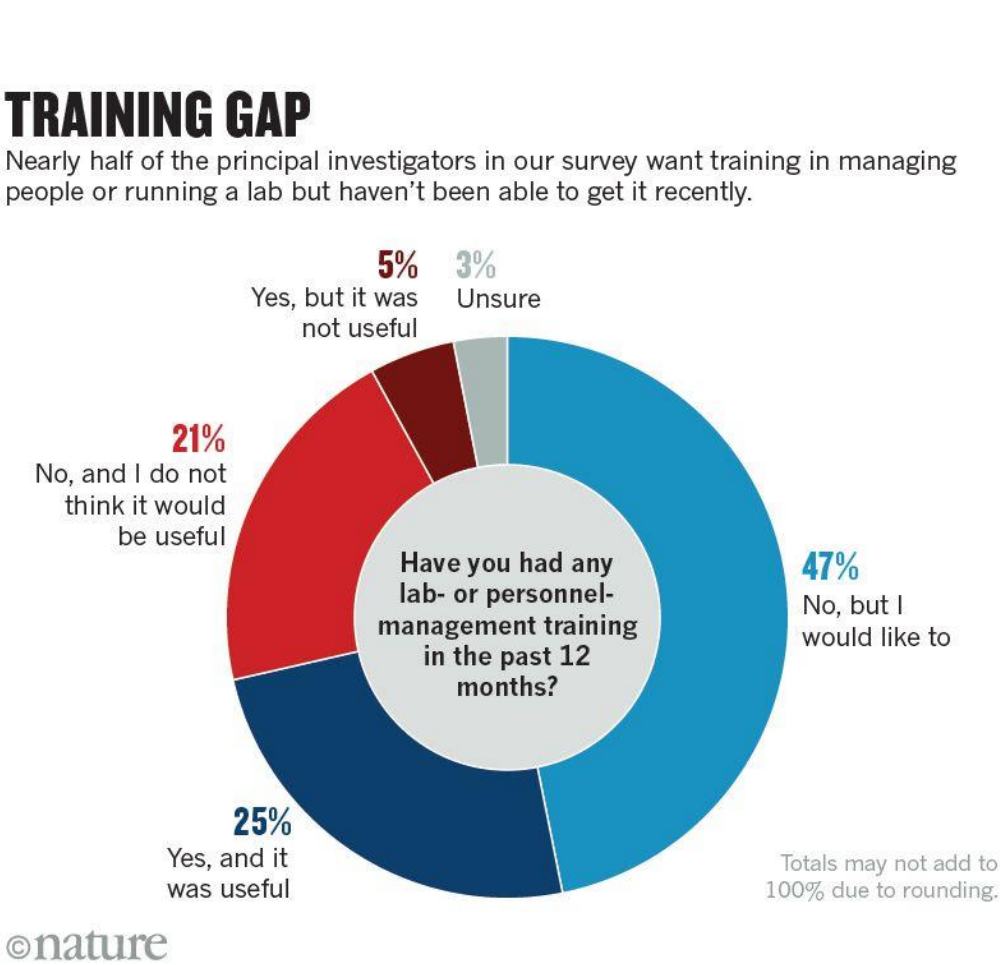
Protocolo para prevenir y actuar contra el acoso sexual, el acoso por razón de sexo, orientación sexual, identidad de género o expresión de género, y la violencia machista[1]

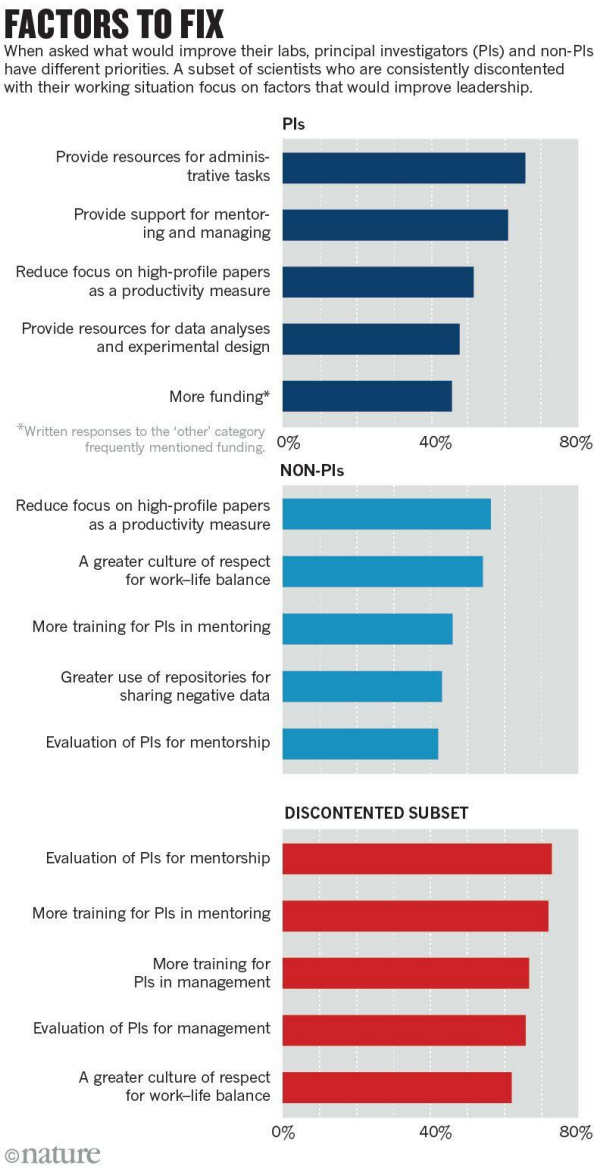
(Acuerdo del Consejo de Gobierno de 7 de noviembre de 2018)

→ We must:

i) know the magnitude of this problem in countries like Spain
ii) better protect the victims and sanction properly the harassers, taking them to court when breaking the law
iii) Setup re-education programs for harassers, which usually are repeat offenders

Improve the training of PIs





Woolston. 2018. *Nature* 557: 294-296

Modify the criteria used to evaluate research activity

HUMANS

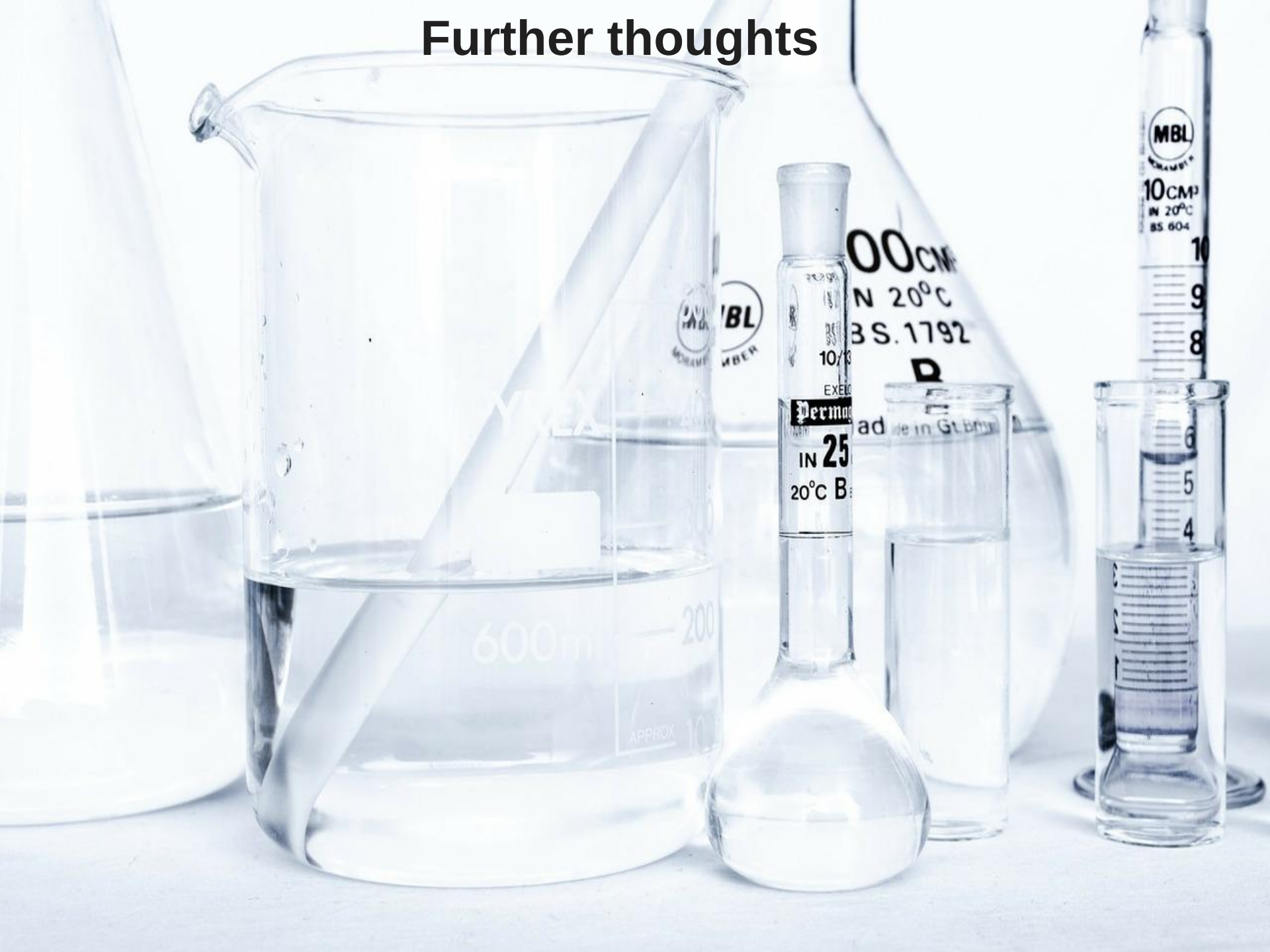
Science's 'Replication Crisis' Has Reached Even The Most Respectable Journals, Report Shows

MIKE MCRAE 27 AUG 2018

→ The "publish or perish" culture is poisoning science worldwide

→ Evaluations should be based more on content and less on the number of publications, Q1s, and JIF. Multiple metrics should be used in a comprehensive way, and research outputs other than papers (e.g. software, databases, dissemination) should be valued more

Further thoughts



→ We must reduce the pressure to publish/work so much as way to:

i) improve working conditions in academia now and in the future (if our PhDs and postdocs “grow” in an ambient of extreme pressure then it is more likely that they will reproduce it when they become PIs)
ii) reduce anxiety/depression/stress levels
iii) contribute to train healthier scientists that enjoy what they do and that will become more creative and productive at the long term

→ Please ask yourself these questions:

i) Can you enjoy your job and be creative when you are working under pressure or very stressed?
ii) Are you a better scientist for having more articles on your CV?
iii) Is your research better when published in a journal with JIF of, let's say, 4.5 vs. when it is published in another with a JIF of 3.7 or 2.5?
iv) It is acceptable to suffer from harassment and/or unethical behavior?

→ If the answer is no, then:

i) be proactive to change the current *statu quo* of scientific practice
ii) discuss these issues with your colleagues and administrators
iii) share your tips and advice with the world
iv) contribute to turn down stereotypes
v) and be a proactive force for a much-needed cultural change in academia!

Take home messages

→ If you get sick or need assistance, your papers will not take care of you (people will do!)

→ Our laboratories should be places to train scientists, not to destroy people









Thank you!

http://maestrelab.com

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