

From making discoveries to sharing knowledge – how to make publishing better

Milka Kostic, Ph.D.

Chemical Biology Program
Dana-Farber Cancer Institute

Twitter: @MilkaKostic



HARVARD
MEDICAL SCHOOL



DANA-FARBER
CANCER INSTITUTE

What is (scientific) publishing?

“Publishing is an information technology business.”
Publishing is a way for scientists to keep up their

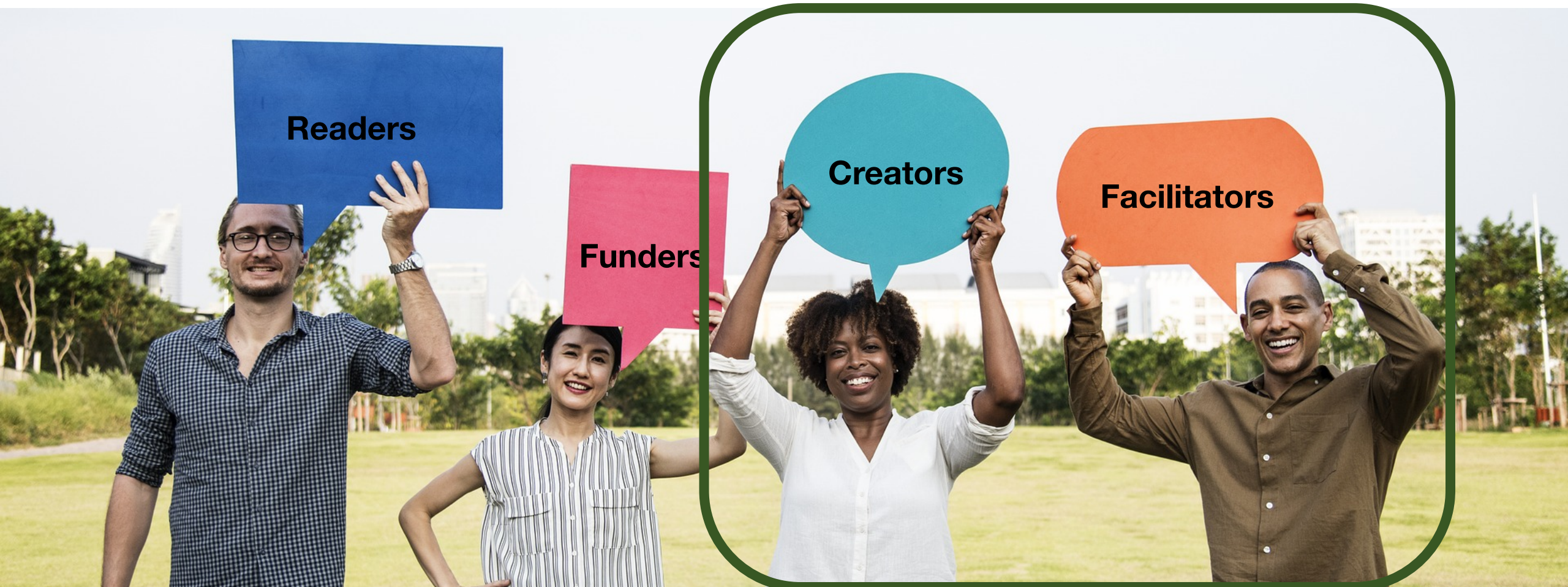
Quote from Why Is It So Hard to Solve Problems with Technology?

By PHILL JONES, JUN 6, 2019, Scholarly Kitchen

side of the grand societal bargain –
society provides them with funding and freedom –
scientific publishing is not about a ‘publish or perish’ – it
is about your responsibility with an understanding that
you will share what they will share with the world.

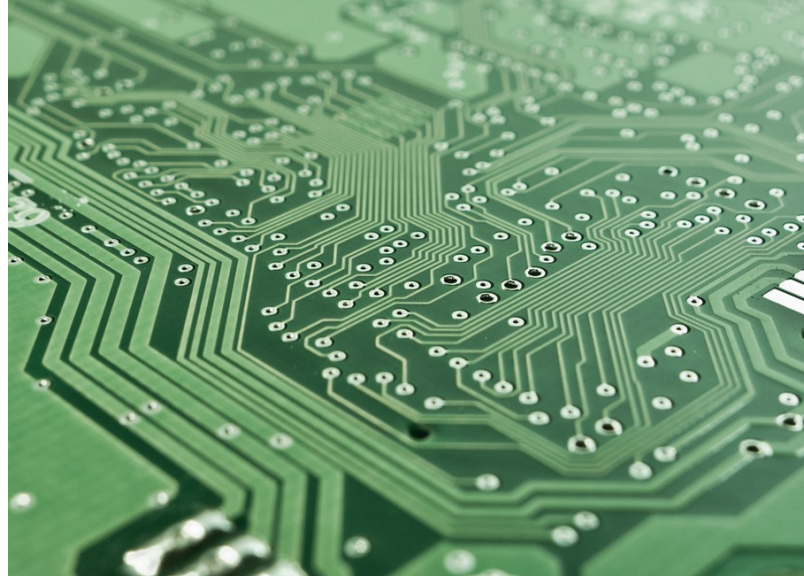
Quote from MILKA KOSTIC’s publishing class

Publishing is a social (cultural) construct
and it starts, proceeds and ends with people

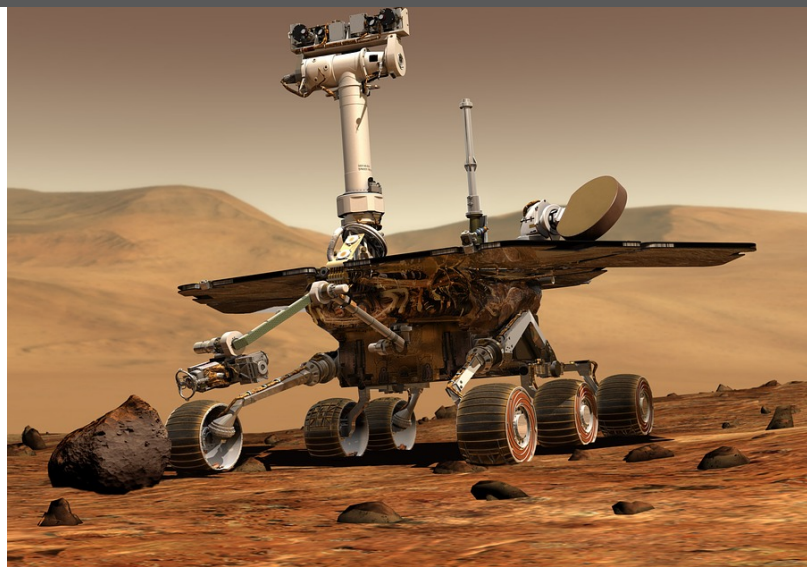




What is the world that creators of scholarly knowledge live in?



Scientists love making discoveries



Many scientists also love to make others fall in
love with their discoveries

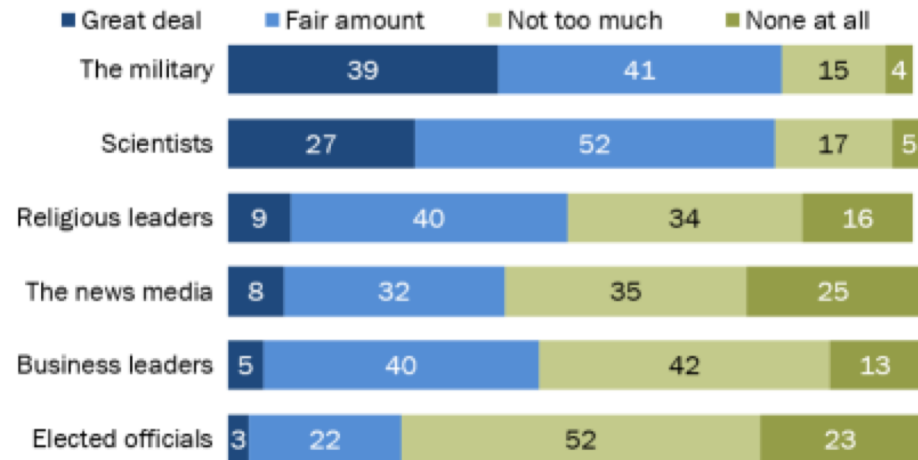
and/or see how their discoveries change the
lives of others

and/or feel that they are making a difference to
mankind

AND PEOPLE TRUST IN THE SCIENTISTS MORE THAN OTHERS

Americans' trust in military, scientists relatively high; fewer trust media, business leaders, elected officials

% of U.S. adults who say they have ____ of confidence in each of the following groups to act in the best interests of the public



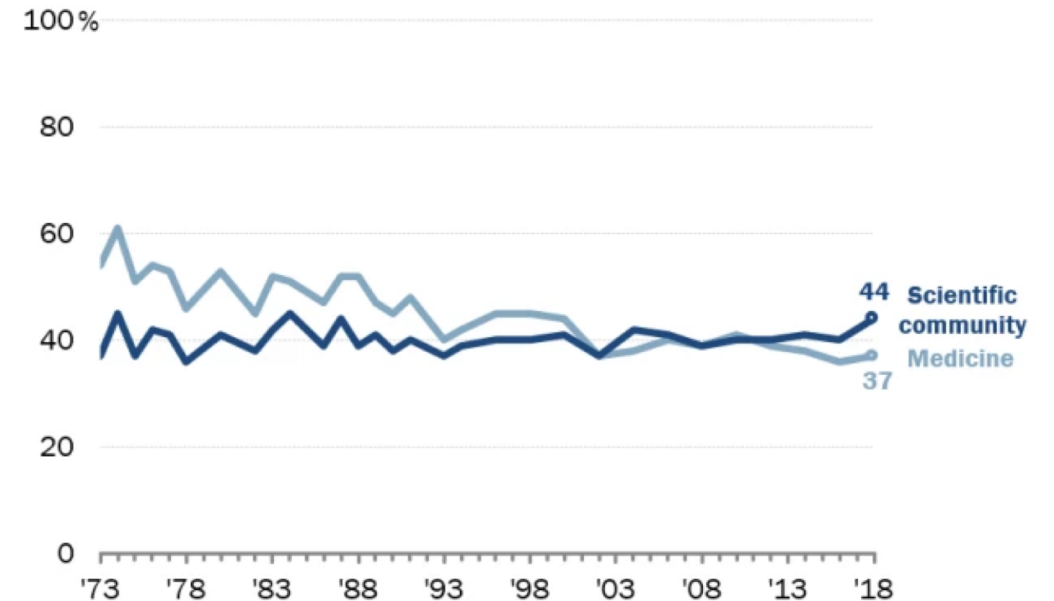
Note: Respondents who did not give an answer are not shown.

Source: Survey conducted Jan. 29-Feb. 13, 2018.

PEW RESEARCH CENTER

Confidence in the leaders of the scientific community has been stable since the 1970s

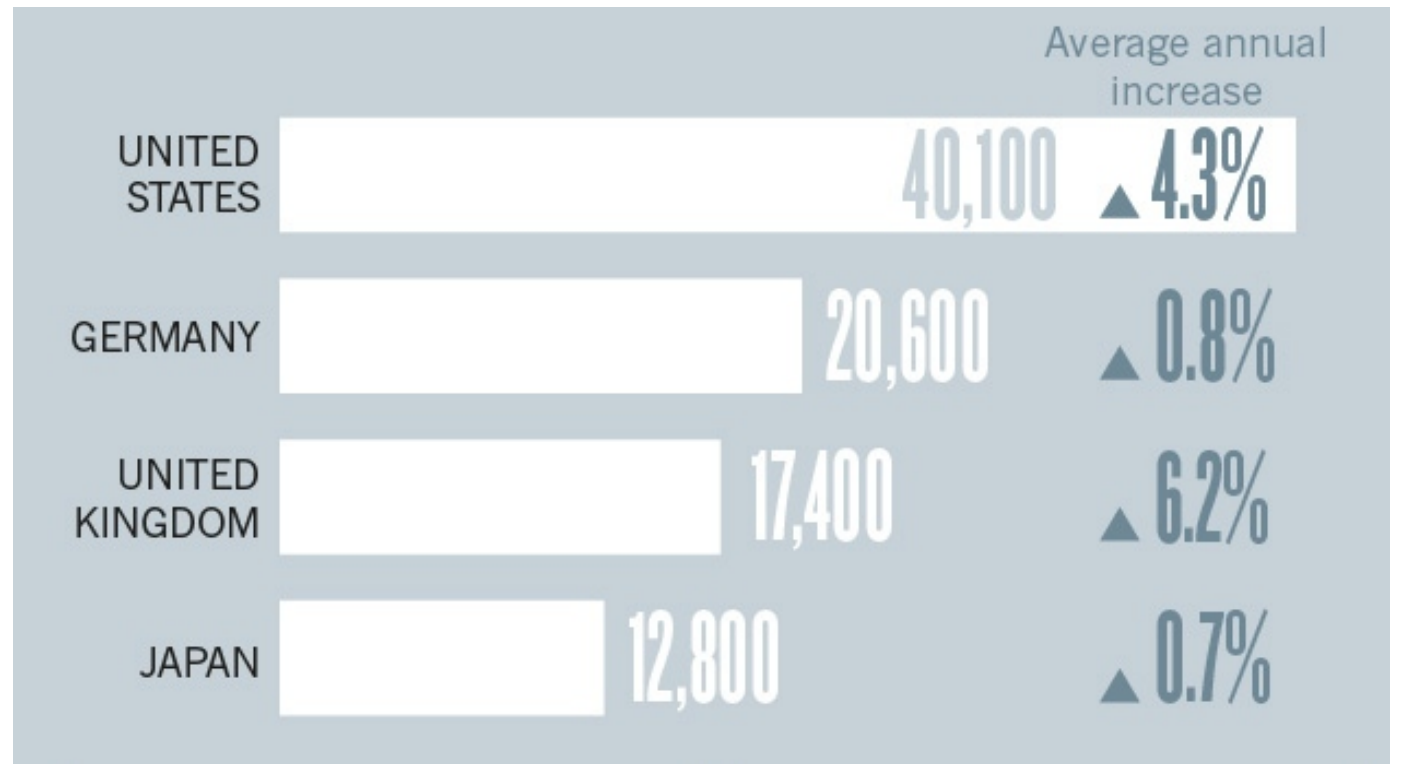
% of U.S. adults who say they have a great deal of confidence in the people running each of these institutions



A photograph of a park scene, dimly lit. In the foreground, there is a large bed of red flowers. In the middle ground, a person is walking a dog on a path. In the background, there is a large tree and a statue of a person. The text "So, being a scientists may seem like a walk in the park..." is overlaid in white.

So, being a scientists may seem like a walk in the park...

Academic job
market and number
of doctorates
granted in sciences
are way out of sync!

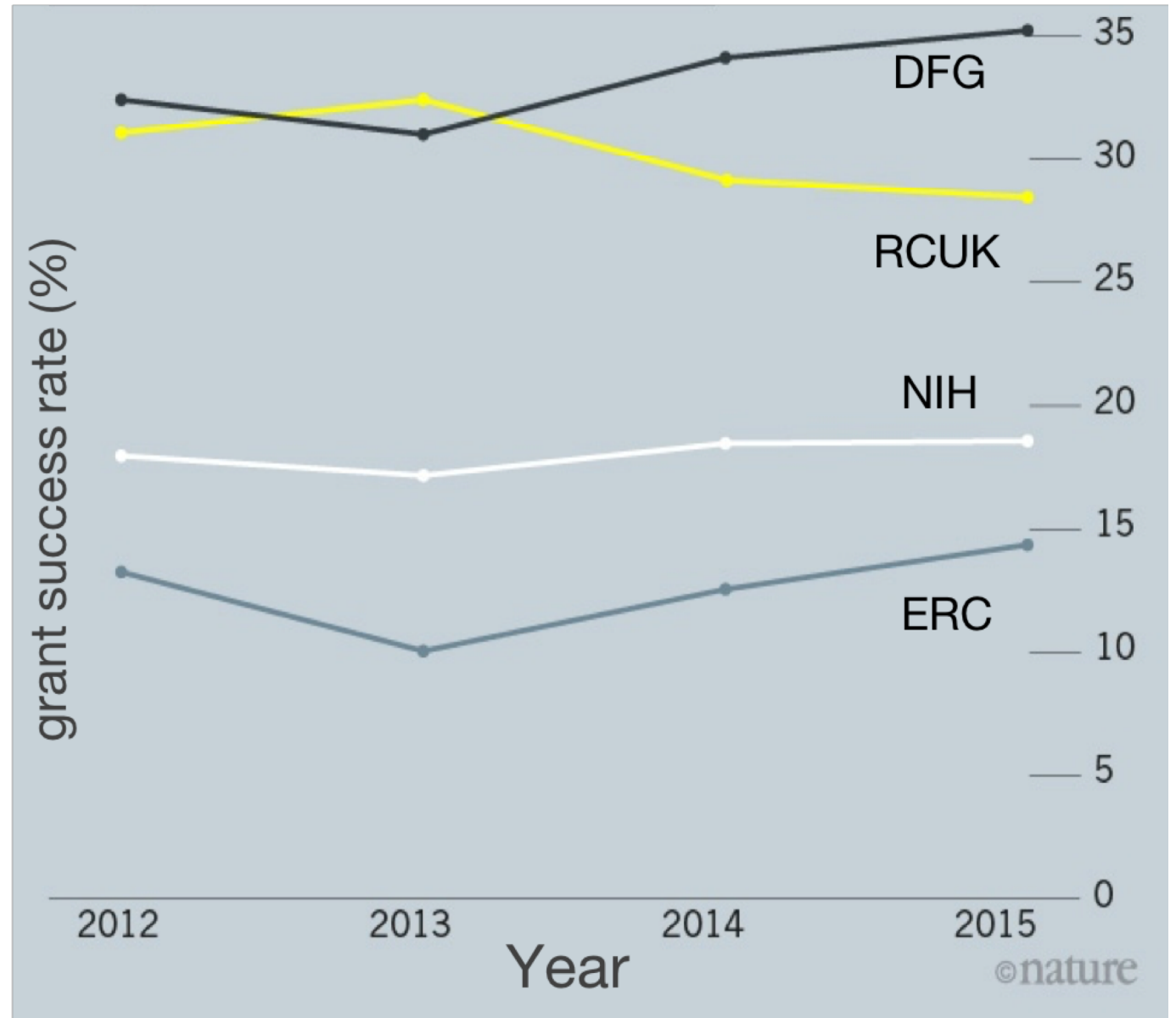


Annual number of new full-time positions in academia in US is about:

3,000

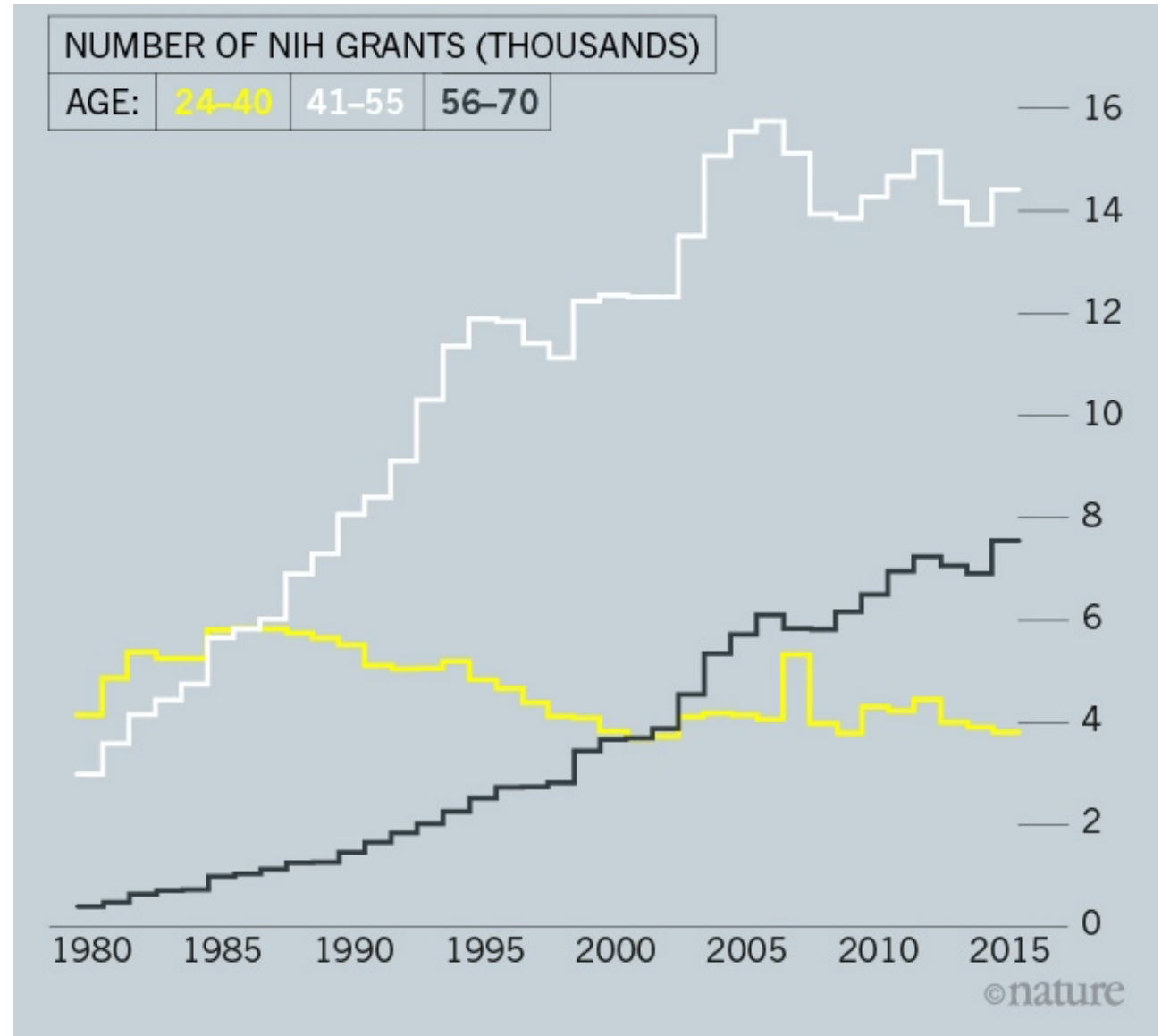
Source: Young scientists under pressure: what the data show (2016) *Nature*

Funding availability has been flat



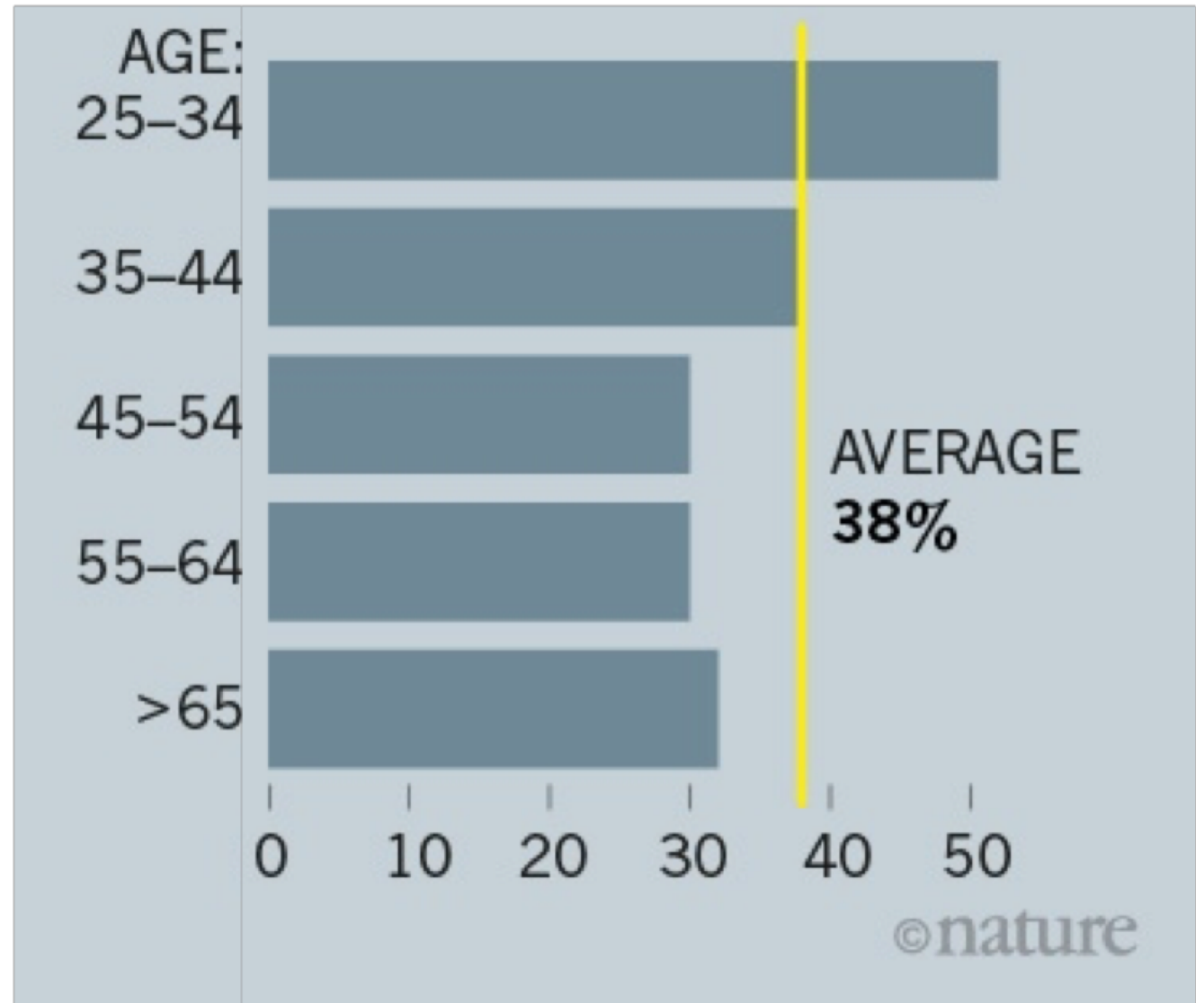
Source: Young scientists under pressure: what the data show (2016) *Nature*

Life scientists are an aging population



Source: Young scientists under pressure: what the data show (2016) *Nature*

Scientists have less time for research



Source: Young scientists under pressure: what the data show (2016) *Nature*

Pressure to Lower quality standards to achieve results

you only get hired if you know the

What early career researcher are saying: #ResearchRealities

<https://researchrealities.tumblr.com/>

MONEY. MONEY. MONEY.

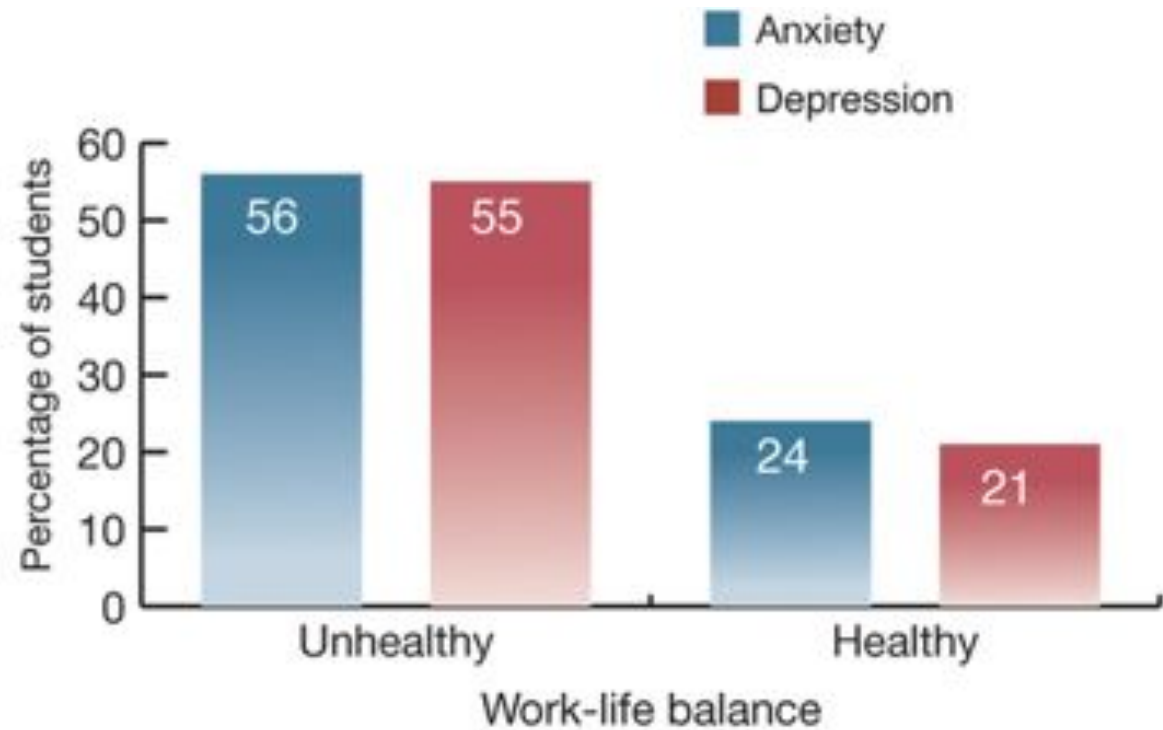
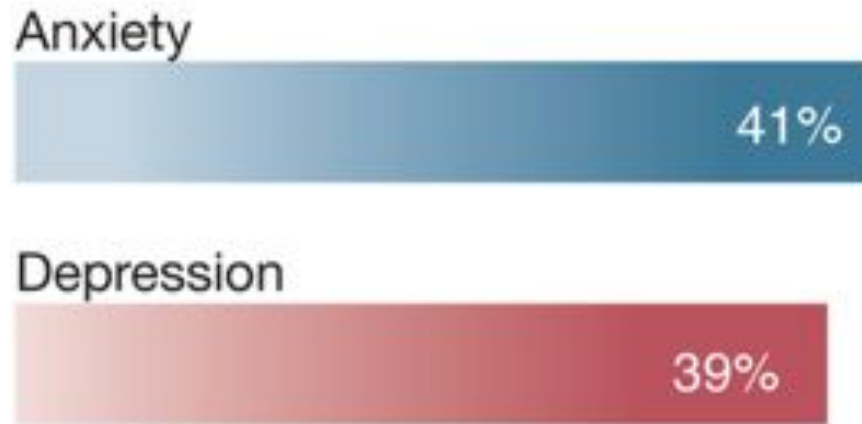
That's all a young scientist has to think about. The rest he/she does is secondary. #ResearchRealities

But sometimes, I ask myself what I am doing here and why it is so hard to be the scientist I want to be, and the parent, and the friend...
#ResearchRealities

you will only get a job if your research is in a presently popular area

Rates of depression and anxiety for grad students are 6X higher than in the general public

N = 2,279 students from 26 nations



“Evidence for a mental health crisis in graduate education” (2018) *Nature Biotechnology*

#MeTooSTEM

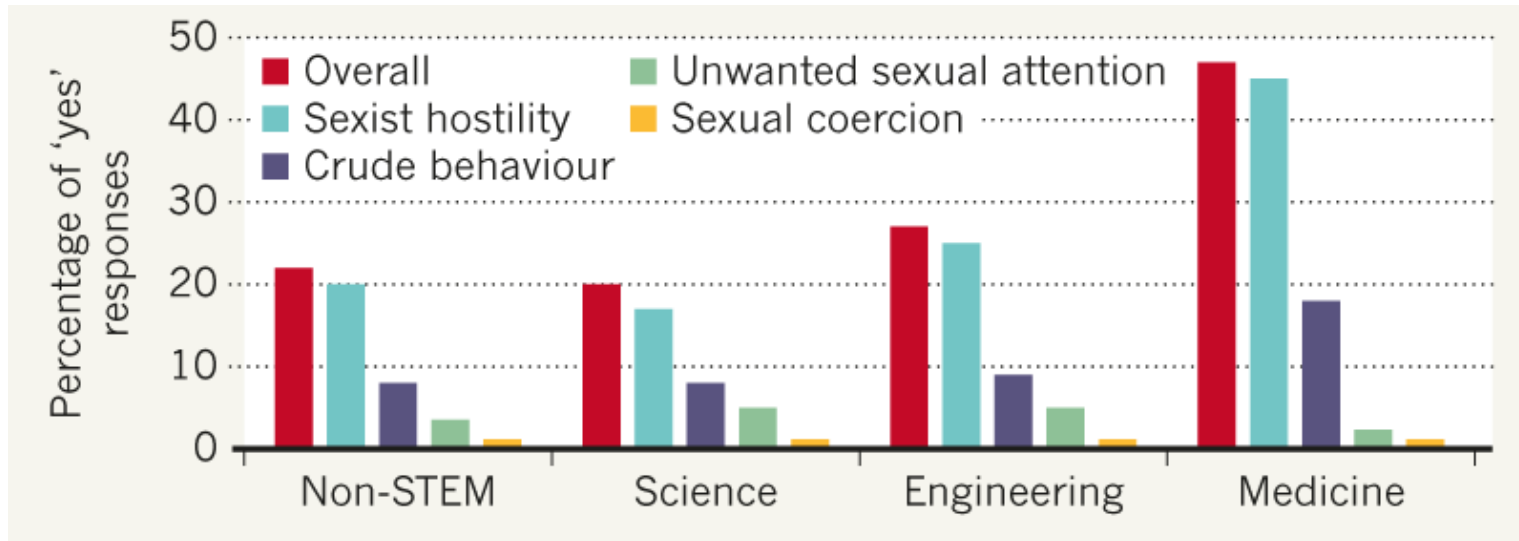
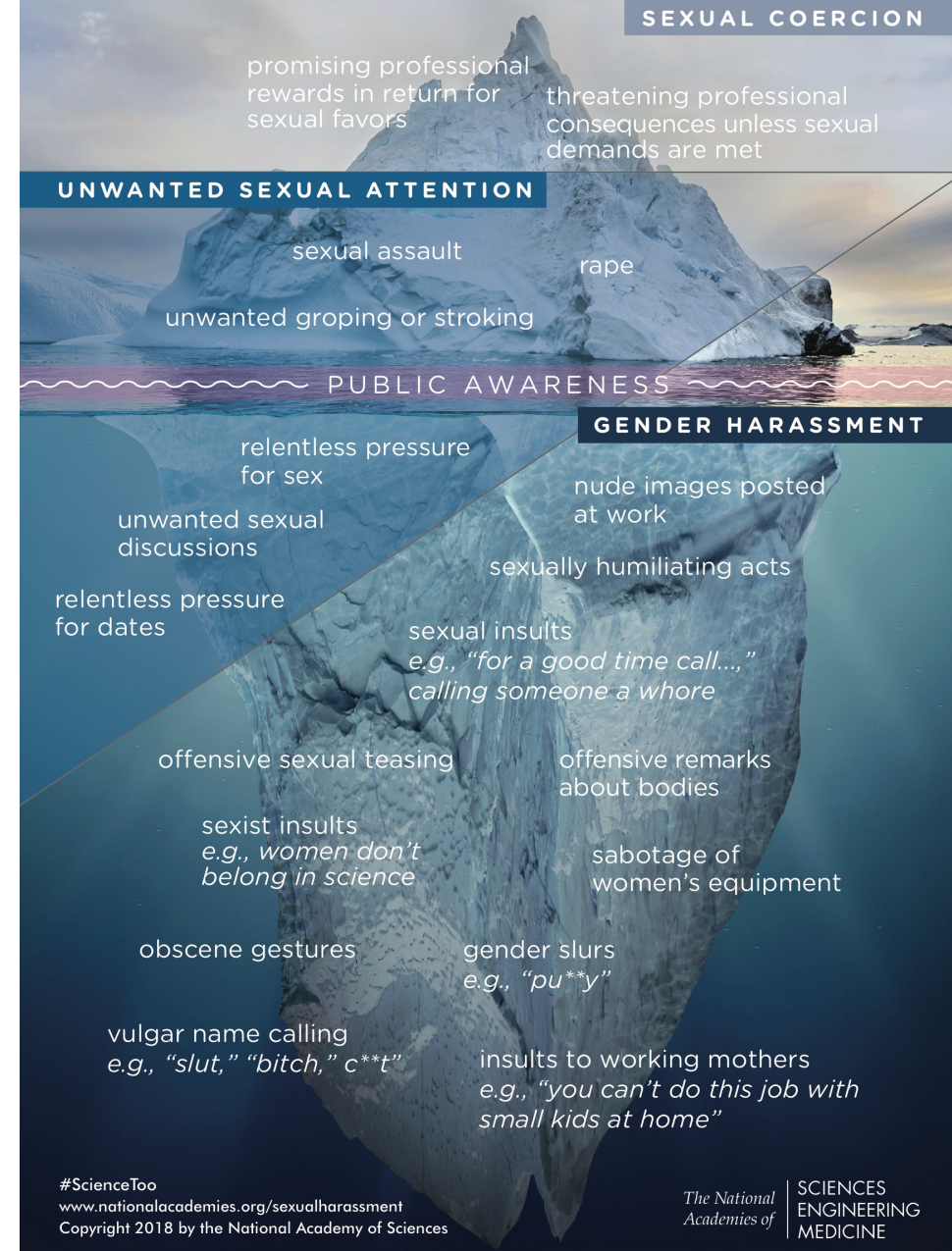


Figure from *Nature*, News June 12, 2018

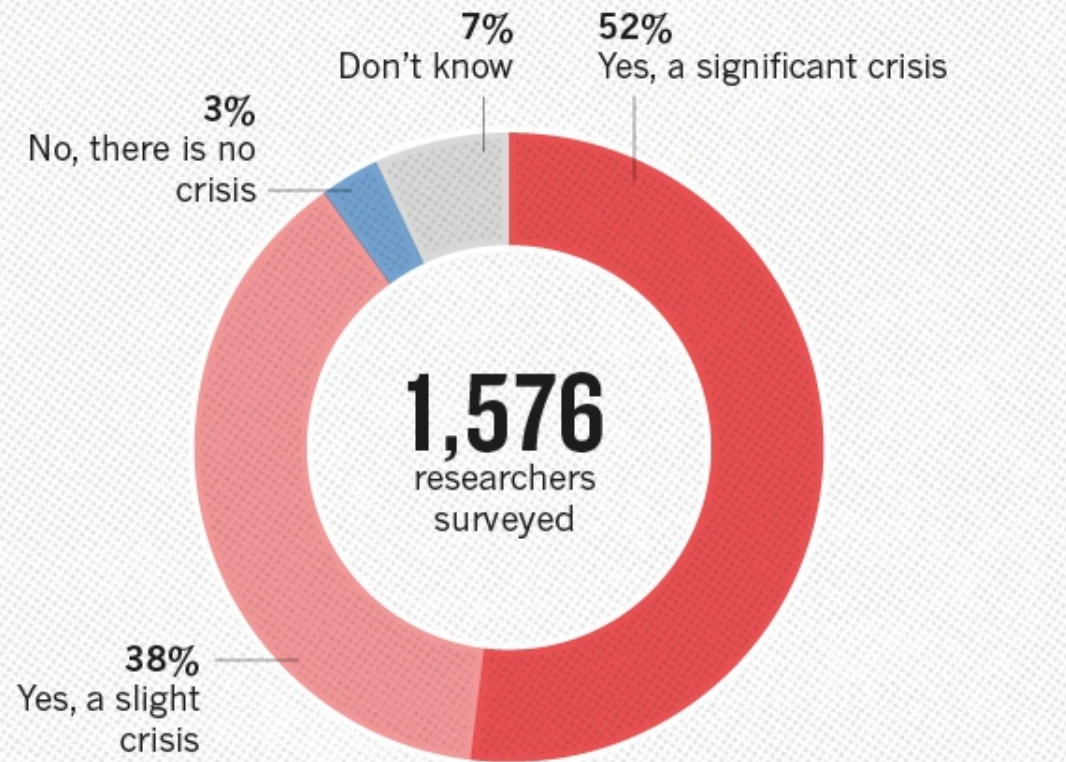
Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine (2018) NAS, NAE, NAM

SEXUAL HARASSMENT Recognizing All Types

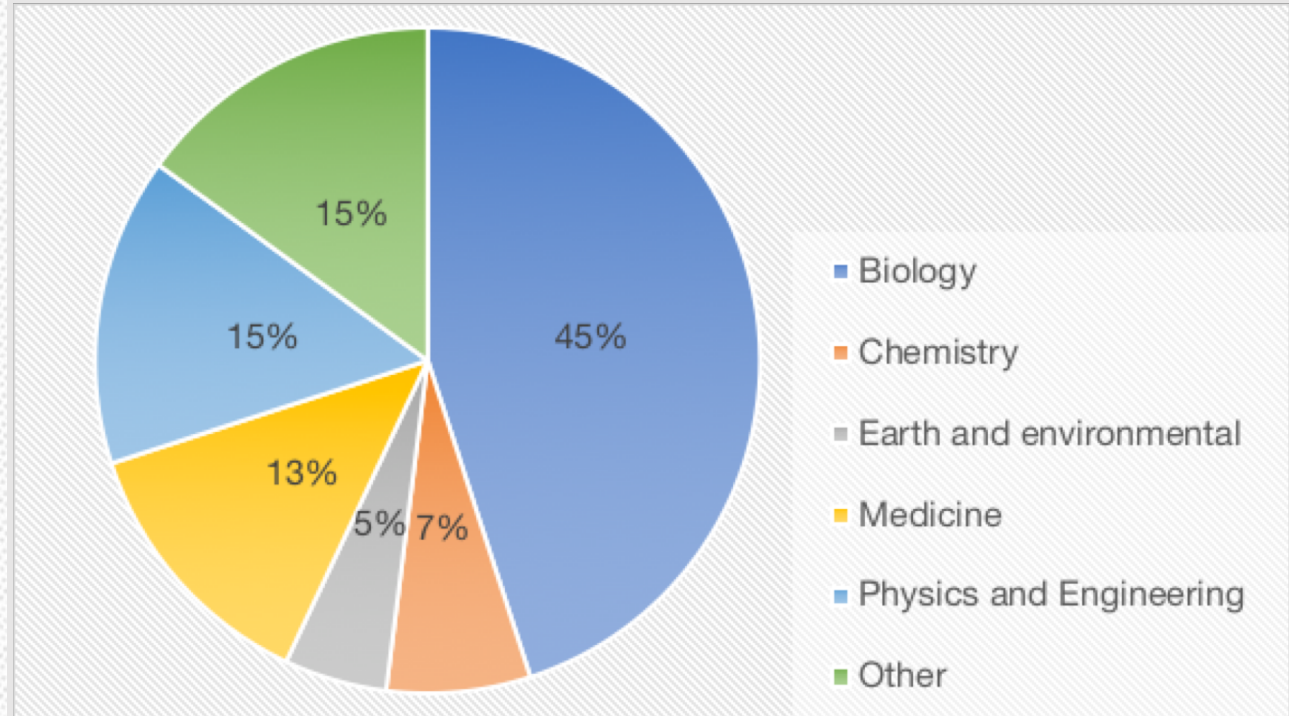


Pervasive reproducibility crisis

IS THERE A REPRODUCIBILITY CRISIS?



©nature



Source: 1,500 scientists lift the lid on reproducibility (2016) *Nature*

LOVE OF DISCOVERY AND BETTERMENT OF HUMANITY

Overproduction
of PhDs

Mental health
crisis

#MeTooSTEM

Reproducibility
crisis

Science
evaluation

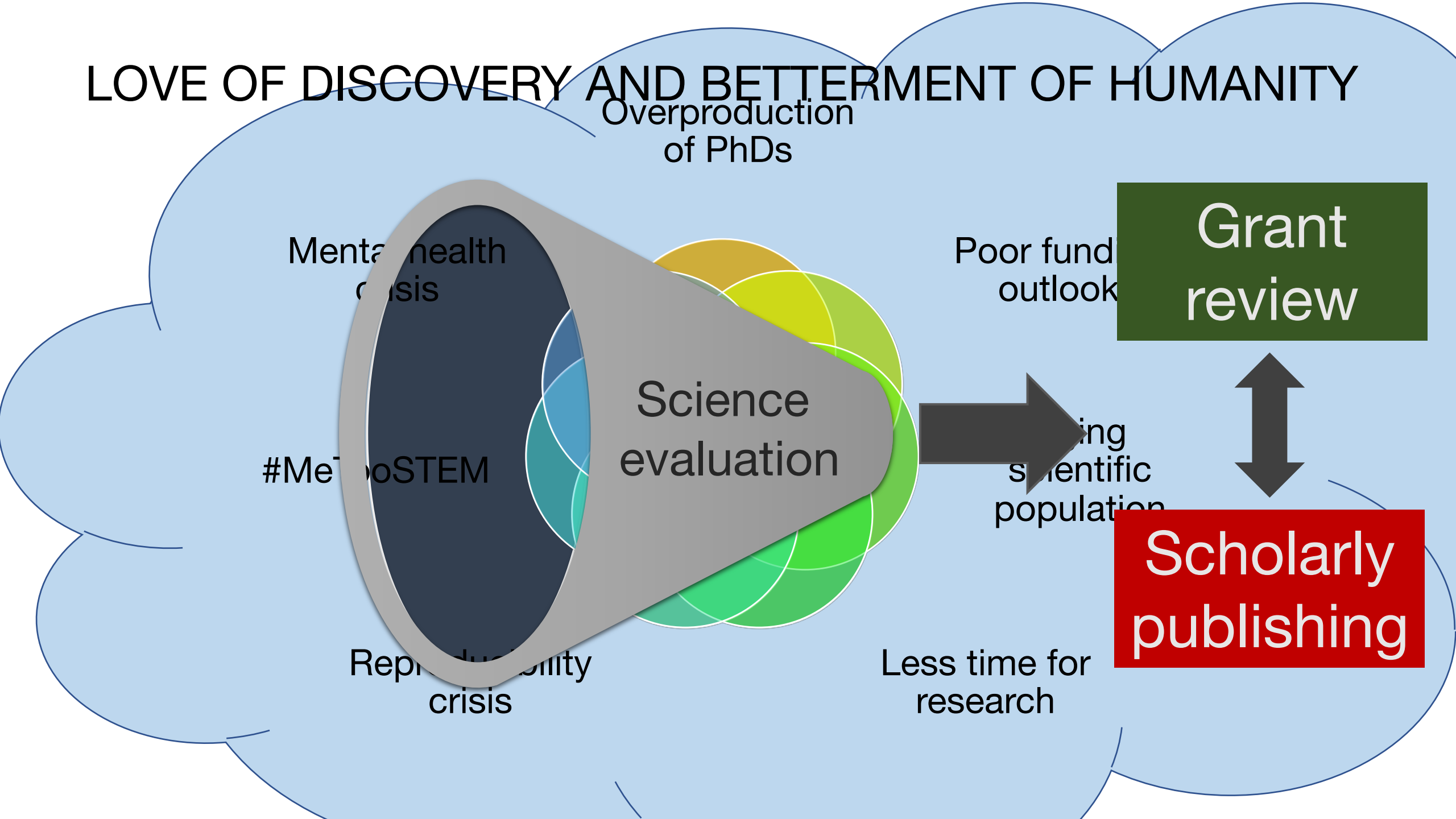
Poor fund
outlook

shrinking
scientific
population

Less time for
research

Grant
review

Scholarly
publishing





Instead of being viewed as enabling, enriching and empowering, publishing is more often viewed as a ~~necessary~~ evil

Focusing on Value – 102 Things Journal Publishers Do (2018 Update)

By **KENT ANDERSON** | FEB 6, 2018 |

Original analysis

• authors 🖋️ = 74

• editors and reviewers ✂️ = 38

• funders 💰 = 4

• institutions 🏛️ = 6

• librarians 😊 = 11

• publishers 🐼 = 57

• readers 📖 = 54

• researchers 🔬 = 51

• service providers 🛠️ = 5

• society 🌍 = 18

Reality check re-analysis

15 primary benefit; 4 secondary

4 primary benefit; 4 secondary

8 primary benefit; 1 secondary

Authors care about:

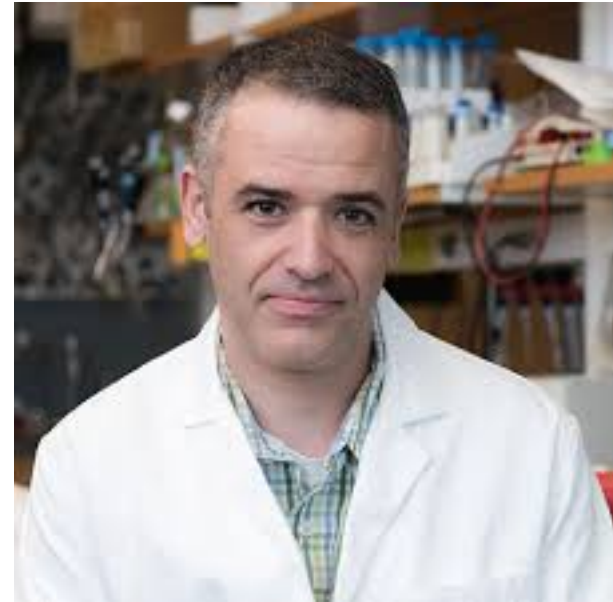
(based in part on conversations with postdocs in our program who wished to remain anonymous)

- How long everything takes
- How confusing everything is
- How inflexible everything is
- How little guidance they get
- How little help journals offer
- How impersonal everything is

Reviewers care about:

(based in part on conversations with Greg)

- How long everything takes
- How much work they actually do
- How little guidance they get
- How impersonal everything is
- How thankless the role is

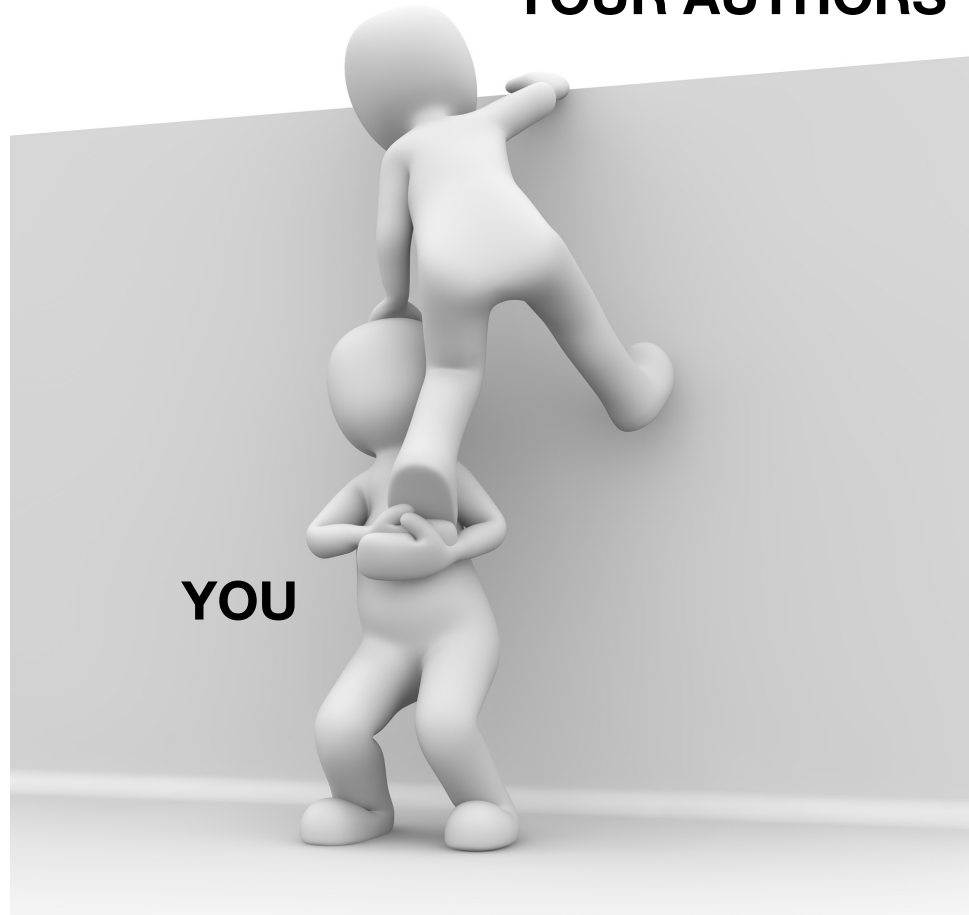


Greg Bird, PhD

Thank You!

WHAT YOUR ROLE IS:

YOUR AUTHORS



WHAT YOUR ROLE IS
PERCEIVED TO BE:

YOU



WHERE RESEARCHERS ARE vs. WHERE PUBLISHERS' "ADD VALUE"



To help, everyone involved in scientific publishing needs to jump in and get wet!
and deploy heavy machinery when needed



Four “easy” focus areas

Timeliness

Friendliness

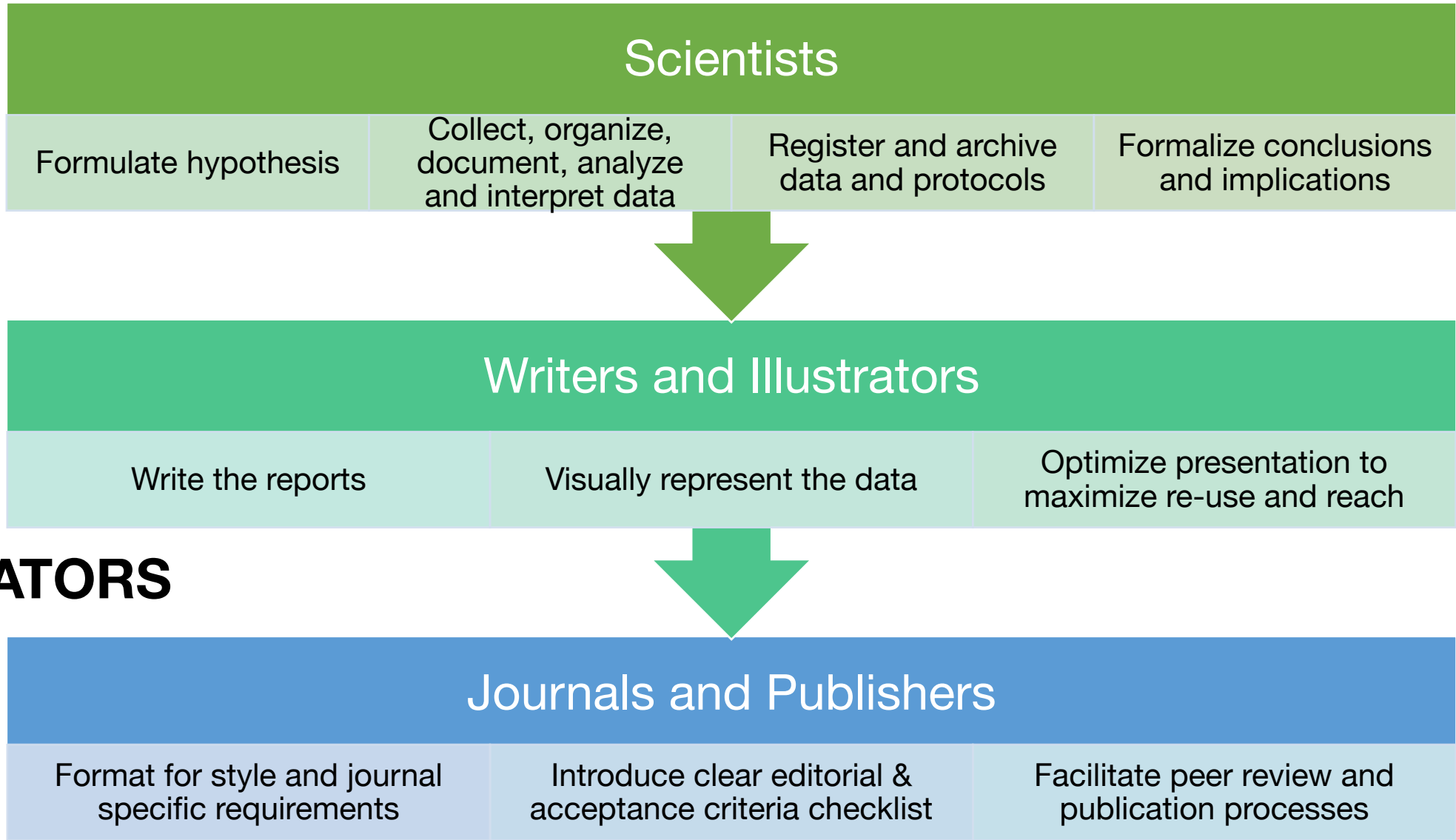
Flexibility

Clarity



Bringing you to the table.
What should scientists know about you?

Crazy future model: decoupling research from *authoring*



HOW CAN WE MAKE SCHOLARLY PUBLISHING BETTER?

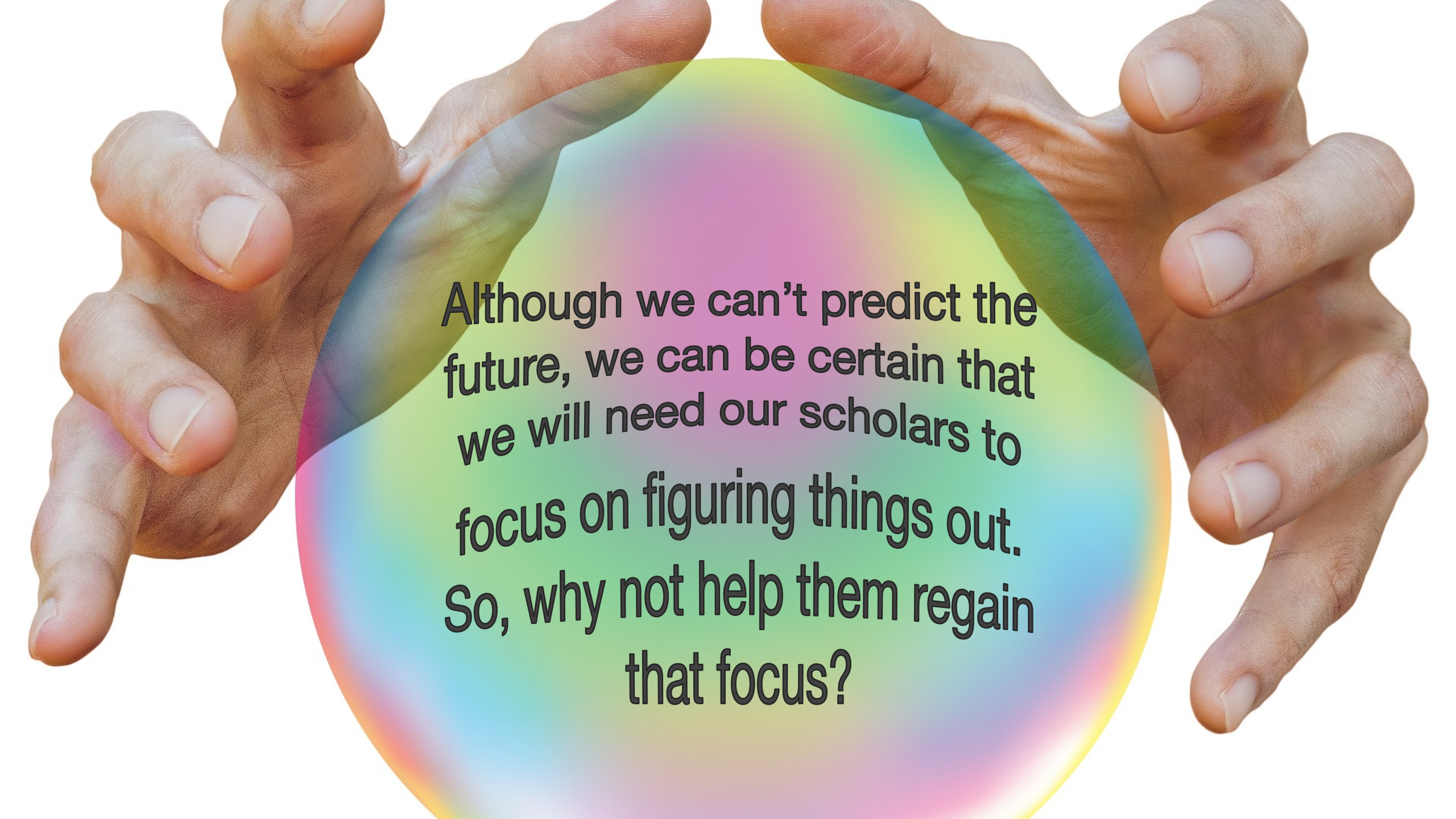
Publishing starts, proceeds, and ends with people

Timeliness

Friendliness

Flexibility

Clarity

A pair of hands, one on the left and one on the right, are shown holding a large, glowing sphere. The sphere has a vibrant, multi-colored gradient, transitioning from purple at the top to blue, green, yellow, and red at the bottom. The hands are positioned as if they are gently cradling the sphere. The background is plain white.

Although we can't predict the future, we can be certain that we will need our scholars to focus on figuring things out. So, why not help them regain that focus?