**ReproducibiliTea Virtual Meeting:**

**How can ECRs influence research culture and integrity?**

**29th May 2020**

**Virtual Meeting Report**

The ReprodicibiliTea Virtual Meeting was a one-day remote workshop hosted by the University of Surrey on 29th May, 2020. The event was co-organized by Marta Topor (University of Surrey), Joanne Kite (University of Surrey), Roonak Rezvani (University of Surrey), Zhaoying Yu (University of Surrey), Katie Drax (University of Bristol), Matt Jaquiery (University of Oxford), Sam Parsons (University of Oxford), and Jade Pickering (University of York). Over 300 participants attended the workshop which comprised one plenary talk and a panel discussion. The talk and the panel discussion were held on Zoom. Slack workspace was used for communication, questions and discussions among the attendees. Further discussions were also taking place on Twitter using hashtag #ReproTeaVM.



**Virtual Meeting Objectives**

There is a large, grassroots movement championing open, reproducible, transparent and rigorous research. This movement has now spread across the globe, and has gained momentum across many scientific disciplines. The popularity of this movement is widely credited to early career researchers (ECRs). In comparison to senior academics, ECRs are more likely to adopt open and reproducible research practices (examples highlighted from [Allen and Mehler, 2019](https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000246#pbio-3000246-t001) include sharing code, data, and research materials, publishing in open access journal, publishing pre-registered reports or protocol papers, pursue replications, and use more stringent statistical methodology). Although reproducible research has many benefits (see [Markowitz 2015](https://genomebiology.biomedcentral.com/articles/10.1186/s13059-015-0850-7)), the adoption of its practices pose some challenges. As ECRs are the champions of open and reproducible science, this vulnerable population carries substantial risk. Furthermore, the current structure of how scientists’ efforts are rewarded are not primed to acknowledge the benefits open science brings, nor the time and effort it takes to implement it. With this in mind, this event focused on

* The current academic culture: What does it mean to be a successful ECR?
* Transition to open and reproducible research: The role of ECRs as forerunners of the changes.
* The future of academic culture and integrity: How can ECR initiatives be better supported on the institutional level to implement the changes on a wider scale. What will constitute a successful ECR in the future?

**Summary of Presentations**

Our workshop was opened by **Marta Topor**, a second-year psychology PhD student at the University of Surrey and president and founder of the Surrey Reproducibility Society. Marta then introduced our plenary speaker, **Anne Scheel**, a third-year PhD student at the Eindhoven University of Technology. Anne’s talk, titled “ECRs in open science: Vanguard or cannon fodder?”, concerned the challenges and benefits that ECRs face when advocating for and applying open and reproducible research practices. Some challenges include, for instance, extra time and resources needed to conduct rigorous research projects and changes to the usual workflow. Importantly, ERCs put their careers at risk by implementing open and reproducible research solutions. The risks stem from the fact that academia is currently in the transition period and the changes are slow. Many academic environments will still endorse the “publish or perish” rule, perceiving ECRs as more successful when their list of publications is sizeable and includes prestigious journals. This does not align with the goals of open and reproducible research. The talk was very well received, participants had many questions and it was discussed widely on Twitter.

The talk was followed by a panel discussion titled “The influence of ECRs on the changing research culture and integrity” led by Katie Drax (University of Britsol). Invited panelists included **Dr. Amy Orben** (University of Cambrige), **Dr** **Ben Beasdale** (The Welcome Trust), **Professor Emily Farran (**University of Surrey), and **Dr. Jessica Butler** (Aberdeen Centre for Health Data Science). The questions were generated by the organizers and the participants themselves, and followed the topic “The Influence of ECRs on changing research culture and integrity”. Here we list the three questions asked to the panel, and the main messages attendees took away from the panelists’ responses.

Question 1

How do you understand the term ECR? Are ECRs still encouraged to show quantity over quality in their research outputs to reflect the success of their work? Can you comment on how effective are the current provisions from research funders and universities to promote open research in our work?

*Summary of responses to Question 1:*

“ECR” is a difficult term to capture, especially as it’s open to interpretation. It was stated an ECR is more of a gradient than a yes-or-no status, largely defined by the precariousness and lack of permanency experienced by junior researchers. It was agreed there is pressure to produce a quantity of work to be viewed as competitive, and that “fast science” is rewarded more than open and reproducible science. It was agreed the “publish or perish culture” is still extant. There are few provisions to support ECRs efforts to work openly and reproducibly, especially from funding bodies. There are some incentives to promote open and reproducible science, but there needs to be much more financial support for open and reproducible scientific efforts.

Question 2

As mentioned earlier, there are many grassroots initiatives organised by ECRs at their institutions. What could be done to better link up these initiatives with other grassroots organisations with top-down high-level planning, because currently they often seem to be operating in different universes?

*Summary of responses to Question 2:*

It was widely stated that small, local groups are what contributed heavily to the success of the open science movement. However, research bodies and universities lend important validation and support to grassroots efforts. For example, the UKRN represents a broad range of academics, and encourages universities to support open and reproducible science efforts made by their ECRs. This is an example of how top-down influence can implement measures to better support their champions of open and reproducible science.

Question 3

Are we getting the bottom-up/top-down balance right in open research? Or are we relying too much on the actions of grassroots organisations often led by ECRs?

*Summary of responses to Question 3:*

There is more work to be done balancing reward/funding incentives from the top, and relieve some of the weight from ECRs to introduce newer researchers to open and reproducible science. It was suggested that ECRs make efforts to talk to university leadership and senior academics, as once they understand how beneficial open and reproducible science is, they are more likely to support open science initiatives. By establishing measures to balance the cost/benefit of adopting and sharing open science practices, ECRs can continue to champion the benefits of open and reproducible science for their entire careers.

**Key themes from the** **Virtual Meeting**

* ECRs have traditionally advocated for open and reproducible science, often at the expense of their own time and effort
* Changing your research practice to be more open and reproducible is challenging
* Shifting how researchers are rewarded will both
	+ decrease the burden felt by ECRs who often champion open and reproducible science, and
	+ increase the likelihood that more established researchers will adopt open and reproducible methods.
* Open science is now a clear goal in research, but better motivation for open and reproducible science is needed for its widespread, stable adoption.

**Next steps**

[An article](https://thepsychologist.bps.org.uk/early-career-researchers-open-science-vanguard-or-cannon-fodder) written by Madeleine Powell for The Psychologist covered the event. All the event information and a recording of the event was made publicly available on the [Open Science Framework](https://osf.io/9hjqu/). Workshop participants were encouraged and provided the opportunity to network to encourage collaboration and communication after the event has concluded. University of Surrey is one of the UK’s leading institutions for the implementation of open and reproducible research and two of our representatives (Prof Emily Farran and Marta Topor) have presented at the [UK’s Open Research Working Group annual meeting](https://us02web.zoom.us/webinar/register/WN_PKX1C82hQEuKwWe1TJOO3g) on the 8th of September. The Surrey Reproducibility Society as well as our Open Research Working Group continues to work closely with the international and national networks of researchers advocating for open and reproducible research. We expect to get involved in many future events.

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