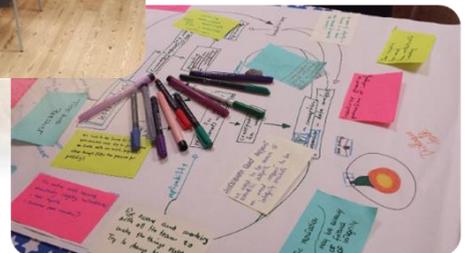


PRBB World Café – Publication integrity in the PRBB and beyond

Friday 15th September, 2017



PRBB World Café on Publication Integrity in Science

Executive Summary

The *PRBB World Café on Publication Integrity* organised by the PRBB Good Scientific Practice (GSP) group aimed to offer an open space for a grassroots conversation amongst science professionals working in all Centres in the PRBB. The World Café method invites participants to share perspectives about a common concern as equals. Fruitful dialogue emerges when people connect with openness, across barriers of seniority, discipline and expertise.

42 participants (33% principal investigators) from the 6 PRBB Centres came up with a myriad of ideas for how individuals and the community can create positive change to promote integrity. The questions addressed and the main emerging themes are outlined below and explored more fully in the main report:

- 1. Why and how does the current system for publishing and evaluating science put integrity at risk?**
 - Evaluation of scientists
 - Competition for limited resources
 - Lack of transparency
 - Authorship
 - Integrity not visible enough

- 2. How do we as individuals try to ensure that integrity is woven into our work in publishing?**
 - Intrapersonal factors
 - Intra- and inter-group mechanisms
 - Increasing transparency, reducing perfectionism
 - Alternative metrics
 - Structural elements

- 3. If anything were possible, what could PRBB-based Centres and groups do to support our community of scientists in publishing their work with integrity?**
 - Training and education
 - Evaluation
 - Enhancing awareness
 - Quality control
 - Incentives to integrity
 - Reduce perfectionism, acknowledge negative results
 - Transparency/open data/data management
 - Research Integrity office
 - Communication
 - Guidelines and mechanisms
 - Lobby for global change to the system
 - Mentoring and support

- 4. In what ways can *individual* scientists/scientific professionals play a part in creating positive change to improve integrity in scientific publishing?**
 - Role models

- Raising awareness
- Sharing and transparency
- Training
- Alternative publishing
- Contribute to developing new evaluation criteria
- Report misconduct
- Reduce perfectionism

About one week after the event, all participants were asked for their feedback both on the World Café method itself as a way of surfacing thinking and ideas about commonly held concerns, and about their experience of this event in particular. The response rate was 83%. Participants were impressed with how the World Café initiated new thinking. 94% of respondents found the event useful and 89% said it should be repeated.

After reviewing the detailed outcomes of the Café, the PRBB GSP group makes the following suggestions for specific actions by PRBB Centres:

- Sign the San Francisco Declaration on Research Assessment (DORA) and seek ways to apply its principles. This declaration recognizes the need to develop new ways of evaluating research outcomes <http://www.ascb.org/dora/>
- Foster dialogue within scientific fields about alternative evaluation criteria.
- Organise seminars with a focus on scientific integrity.
- Encourage open conversations at all levels about shared values, the meaning of science and research and how the Centre might promote a culture of caring, nurturing and support of all staff.

Further actions will be taken forward by the Good Scientific Practice group working in collaboration with Centres and with the Consorci PRBB. Details of these can be obtained on request from goodpractice@prbb.org.

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A crisis in trust

The crisis in trust in science worldwide affects all scientists and all scientific institutes. Growing concern is expressed almost daily by both the lay and science media about problems with reproducibility, as well as how ruthless competition, stress and bullying, are among the several push factors underlying poor behaviour, sloppiness or even falsification, fabrication and plagiarism.

Recognising its key role as a scientific hub, the PRBB and its Centres have been proactive in leading good practice initiatives that seek to involve the entire PRBB community. Incorporating seven research Centres under one roof, the PRBB is in a unique position to drive forward grassroots initiatives that can involve individuals, scientific groups, individual Centres and partnerships of Centres.

The PRBB Good Scientific Practice (GSP) group was formed in 2013 with a mandate from all PRBB Centre Directors, to take a lead in coordinating actions and sharing learning to catalyse the creation of a culture of good practice. In 2015, a survey of all PRBB scientists revealed a level of concern with integrity similar to that seen in other scientific centres globally, with data management and publication identified as the major problems.

A wicked problem

The issues that underlie problems with scientific integrity are complex and systemic or “wicked” - in that there is no single, nor any simple solution. Any attempts to improve the situation must take a systems approach, acknowledging that while big players have major influences on structural levers, change in complex systems is unpredictable and tiny shifts often leverage huge effects. The system of scientific research, as all social systems, is formed by human beings and the relationships between them. As such it seems reasonable to hope that positive changes in the way system members interact, might be levers in the direction of desired culture change.

Many systems change initiatives internationally have tried to address a multitude of wicked problems. At the heart of many such initiatives is the ancient art of dialogue. Dialogue, in contradistinction to discussion, seeks to share perspectives amongst participants, to suspend assumptions and to withhold judgements so that a whole picture, not visible from any single viewpoint, can be “co-created”. There are no winners or losers in a fruitful dialogue.

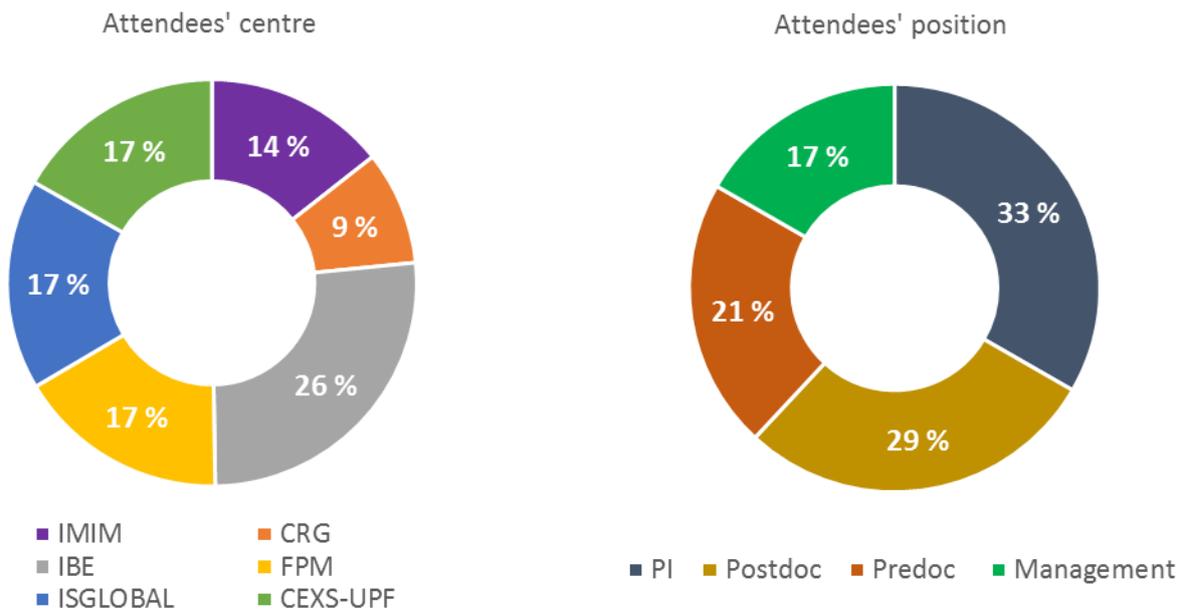
One dialogue method for large groups is the World Café. As with many innovations, the World Café began by accident, when it was realised that the most meaningful conversations take place outside of formal events, in intimate, friendly environments that encourage relaxation and openness. Groups of people who share a common concern but no simple answer, come together as equals, to listen and to explore their perspectives. When the setting is right, when participants feel engaged and meaningful questions are posed, shifts in thinking and behaviour can begin as new relationships and conversations open up unexpected channels.

On Friday 15th September 2017, the PRBB GSP group held a World Café specifically focussing on publication integrity in science. All scientists in the PRBB were invited to attend the 3.5 hour event held outside of the PRBB building, in the heart of the local community: the Barceloneta Civic Centre.

Gonzalo Míguez was the facilitator of the World Café and Elinor Thompson, Ero Jiménez and Maruxa Martínez were the co-hosts. Jordi Camí welcomed the attendees and introduced the event.

The following is a summary of the conversation:

A. **Attendees:** 42 people from all the PRBB centres attended the World Café.



B. Questions and main ideas emerging from the conversation

1. Why and how does the current system for publishing and evaluating science put integrity at risk?

Evaluation of scientists: The current system of evaluating scientists, more focused on number of papers in high impact factor journals rather than the quality of research done, is putting integrity at risk. This 'pressure to publish' environment also encourages the publication of only positive results.

"The way we evaluate quality of scientists is too much based on where you publish"

"Success as researcher relies on the publication"

"Negative results not published"

"Difficult to publish negative results"

Limited resources and competition: Resources (budget, funds, time, and permanent positions) are more and more limited and this leads to competition. These pressures on scientists create a breeding ground for potential breaches of integrity.

"The pressure of competition"

"Pressure to survive"

"Pressure enhances lack of integrity"

Lack of transparency: The lack of transparency of the current publishing system makes it difficult to detect errors and/or bad practices.

“Perhaps it would be better to publish more raw data and focus less on making a story out of them”

“Better transparent than perfect!”

Authorship: Too much importance is given to the order of authors, and people feel there are not clear criteria to define who will be an author in a publication.

“1st, last authors and others”

“Criteria for authorship -> what are they?”

Integrity is not visible enough: The importance of integrity is not given a high enough profile amongst scientists and moreover is not rewarded by the system.

“Lack of channels to report lack of integrity. Lack of channels to discuss.”

“Integrity not part of the evaluation”

“Integrity does not sell”

2. How do we as individuals try to ensure that integrity is woven into our work in publishing science?

Intrapersonal factors: The central role of one’s own personal moral compass, the ability to think critically and have a strong sense of what is right.

“Integrity at the end depends on the person”

“Integrity is a way of life”

An equivalent concern with the difficulties of maintaining integrity in practice, in a system that encourages cheating:

“It’s easier to go with the system than against it. The system promotes behaviour without integrity”

The need to find personal support mechanisms to help strengthen one’s resolve. Such supports include dialogues with seniors or other colleagues either inside or outside one’s own group *“talking on a regular basis with colleagues”*.

And the need for courage in doing what is right but difficult:

“We have to be brave to be open-minded and try to pursue the truth of our work, beyond other things (like the pressure for publishing).”

Intra- and inter-group mechanisms: Use of group mechanisms to help ensure they stay on track. Such mechanisms may be within the group and/or in collaboration with other groups. These mechanisms include group sharing of data from the outset, the establishment and adherence to clear policies and procedures such as *a priori* identification of authorship, or may involve double checking of data between groups or sub-groups.

“Sharing data and hypotheses within and outside the lab and encouraging reproducibility.”

“Involve many people in the data processing and analysis phase from the start”

“Rules on how to work in your group”

“Start early sharing results by forcing discussion. Keep track wet/dry labs. Involve people on checkpoints.”

Increasing transparency, reducing perfectionism: Enhancing transparency by being open and sharing results, whether desirable or not. This includes making raw data available and generally reducing the pressure for perfectionism of outcomes.

“Transparency even when the results are not nice”

“Be as transparent as possible with your data”

Suggestions varied from making being open fashionable *“transparency is cool”*, while others felt that pressure might be necessary *“enforce Open Access.”*

Alternative metrics : The need for alternative indicators for evaluating science and scientists, and for individuals to take a lead in supporting and acknowledging such different metrics:

“Change the incentives (go to the content of the papers) not quantity of papers. Look at relevance.”

“Metrics should be only a complementary way of evaluating.”

Structural elements: The important structural role of elements in the publishing and review system. Particularly the need to avoid conflicts of interest in reviewing papers:

“Anonymous reviewers regulating the authors – double blind or double openness”

“Integrity as reviewers with no conflict of interest”

The need to have and make use of Codes of Good Practice, institutional standards and reference protocols, as well as reference to standards nationally and internationally.

And for PRBB Centres to take a role in providing standards of reference:

“All institutions at the PRBB should agree on new actions to promote integrity and more critical thinking (and less following the fashion).”

3. If anything were possible, what could PRBB-based Centres and groups do to support our community of scientists in publishing their work with integrity?

Training and education: More training on Research Integrity at all levels, from PhD students to senior staff.

“Training about reproducible science - computer tools for tracking work”

“Include RI topics in practical trainings”

Evaluation: Change the evaluation of scientists, currently based mostly on number of papers and Impact Factor, for a more qualitative assessment.

*“Less pressure in the number of papers. How you are contributing to science.
More emphasis on that than in IF.”*

“Recruitment: question how research advances the field of research. Ask what was challenged / value of publication/work”

Awareness: Promote discussion and visibility of Research Integrity issues within the PRBB at all levels, from PhD students to senior and management.

“Talk about integrity. To cheat is not cool”

“Talk about it - seminars, lab meetings, courses, training - at all levels”

Quality control: Provide tools to increase quality and reproducibility of results, such as electronic notebooks, quality assurance systems, statistics office or committees for internal peer review or to provide independent validation.

“Checking results reproducibility before publishing - Internal groups / PRBB committee”

“Assistance in evaluating quality / image correctness”

“Independent statistical office”

Incentives to integrity: Actively incentivise good practices, for example with awards or an annual PRBB meeting to present examples of good practices within the community.

“Incentivize groups and PRBB Institutions: Request all PRBB groups to present once every 3 years some action they took to promote integrity - select top 10 - present at PRBB general session”

“PRBB conference/award for good scientific story/results based on “non-sense/negative” data (tails of the unexpected)”

“Annual awards of integrity for PI actions”

Reduce perfectionism/negative results: Accept that data aren't perfect. Encourage publishing negative or non-perfect results. Dirty lab (meetings where messy and inexplicable data are openly discussed) both at the group and whole PRBB level.

“Celebrate messiness in science!”

“PRBB committee for checking reproducibility before publishing and journal of negative results”

“Dirty lab meetings” with pizza and beers - discuss crazy looking data”

Transparency/Open Data/Data management: Increase transparency and improve data management with a common platform for sharing data, electronic notebooks, etc.

“Biorepositoires of data/programs/results”

“Establish open lab book”

“Electronic notebooks and teaching on data manipulation”

RI office: Give more visibility to the Research Integrity / Good Scientific Practice committee.

“More knowledge of the PRBB committee on research integrity - More visibility”

“PRBB can establish an integrity hotline support”

Communication: More and better communication, focusing on the science and not the money, journal or Impact Factor.

"We should communicate science without emphasis on the journal"

"Improve science communication at different levels: social media, website, newspaper"

Guidelines and mechanisms: Set specific rules and guidelines, have a team of people to advise on good practices.

"Benchmark PRBB guidelines policies"

"Team of people for advise"

Lobby: Lobby with other centres for a global change of the system, for example adhering to DORA (The San Francisco Declaration on Research Assessment).

"Pressure on university to sign DORA"

"Centres should lobby against the "system" as it should have more power than an individual"

Mentoring and supervision: Provide mentoring programmes at the PRBB and more and better supervision for PhD students, but also postdocs, staff scientists, etc.

"Mentoring programme at PRBB"

4. In what ways can *individual* scientists/scientific professionals play a part in creating positive change to improve integrity in scientific publishing?

Role Model: Leading by example and spreading the word. Taking personal responsibility for doing things with integrity (how the research is done, acting as peer reviewer, evaluating others) and talking with colleagues about integrity. Listening and giving support. Making an active commitment to lead specific changes.

"Behave with integrity, lead by example. To give a talk to my group explaining the ideas that came out of here"

"Be a reasonable and just reviewer"

"Good practice example - generating science, evaluating others"

"Be critic with my work"

Raising Awareness: Taking the initiative in raising awareness about research integrity, talking about the issues at different levels, from group to whole institution.

"To talk more about integrity in project proposal, in research paper, and not only copy paste the ethics paragraph"

"Set and develop integrity/reproducibility topic in the centre's scientific agenda"

"Opinion articles raising the awareness"

"Be aware of integrity and asking my supervisors whatever thing I don-t know. Transparency"

Sharing and transparency: Being transparent about the data and the way it has been obtained. Share both processes and data. Being transparent also about the review process. Open data and open peer review.

"I can share not only data but also how I get results in details. Commented scripts"

"Share your data in order to be tested and used. Open lab-book"

"Open peer review"

"Presenting data regularly to colleagues helps promote integrity"

"Improve my awareness when doing science but also when communicating it. Encourage data sharing, work process registry"

Training: Undertaking training in good practice themselves and training the younger generation or their colleagues.

"Training new people in my institution"

"Know worldwide initiatives on this topic - sign statements e.g DORA"

Alternative publishing: Trying to publish in 'good practice journals', such as journals that accept negative results; sharing data in open access platforms and archives.

"Platform for negative results"

"Be transparent with generated data and publish negative results"

"Publish more in Biorxiv & be active there as a community"

"Start publishing in journals that incentivize integrity (break the cycle)"

Contribute to developing new evaluation criteria: Debating and pushing for a change of evaluation criteria, trying to put the focus on science not on the number and IF of the publications.

"Push for evaluation criteria to change"

"Add evaluation criteria besides IF to relieve publication pressure"

Report misconduct: Being active in reporting misbehaviour when they see it around them.

"Be brave if I see problems"

"Report misconduct"

Reduce perfectionism: Accepting that data are what they are - not perfect. Taking into account and discussing "dirty" or weird/inexplicable data, for example in lab meetings.

"Show that there is no perfect data, we don't have to modify the message of the data to fit what we expected. Let's tolerate that we don't have perfect results"

"Talk about and accept weird data"

"As a group leader I can encourage presentation of messy data as the norm/dirty lab meetings"

Just one thing – feedback from tables

Dirty lab meeting - messy results with beer and pizza - celebrate and see the humour in mistakes

Promote idea that a culture of imperfection is OK

Group level integrity could be scaled to PRBB level - igNobel prizes - weird or funny science

Publicise the PRBB group.

Make PIs do a course in integrity as a condition of having a PhD student

Integrity Hotline

DOI instead of the journal name in Friday email

How to encourage talking - put a question of the week on the TV screens

Take messy research to the PRBB level. PIs should present their failures and problems and negative results not just their "cool" findings. - the human side

Use social media wisely - especially Twitter - make scientific integrity a trending topic

Emphasise the huge impact/importance of scientific integrity in the wider world. PRBB session on wider world impact eg the economic recession. Eg Theranos story

You can find the photographs of the event [here](#).

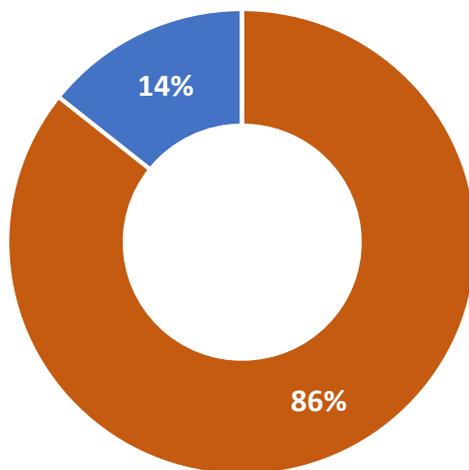


World Café - Publication integrity in the PRBB and beyond FEEDBACK FROM PARTICIPANTS

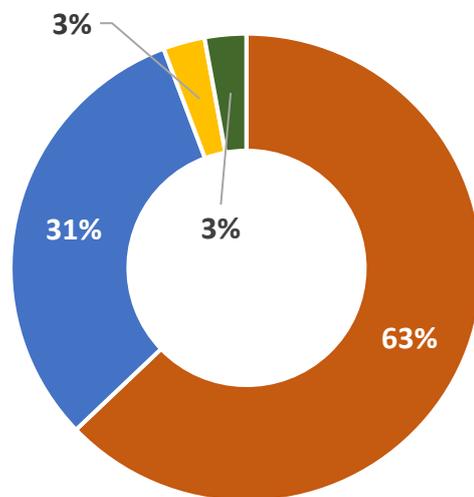
Total number of responses: 35

The PRBB World Café on Scientific Publication:

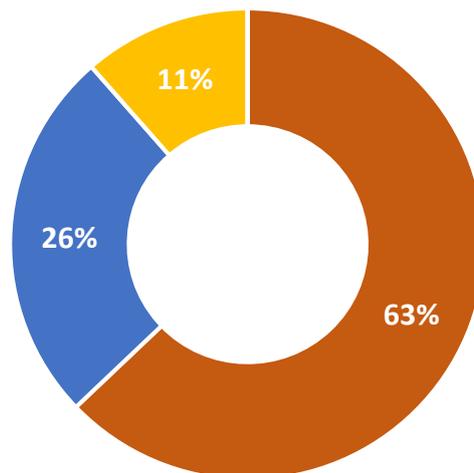
Was interesting:



Was useful:



Should be repeated:



■ Totally agree ■ Agree somewhat ■ Neutral ■ Disagree somewhat ■ Totally disagree