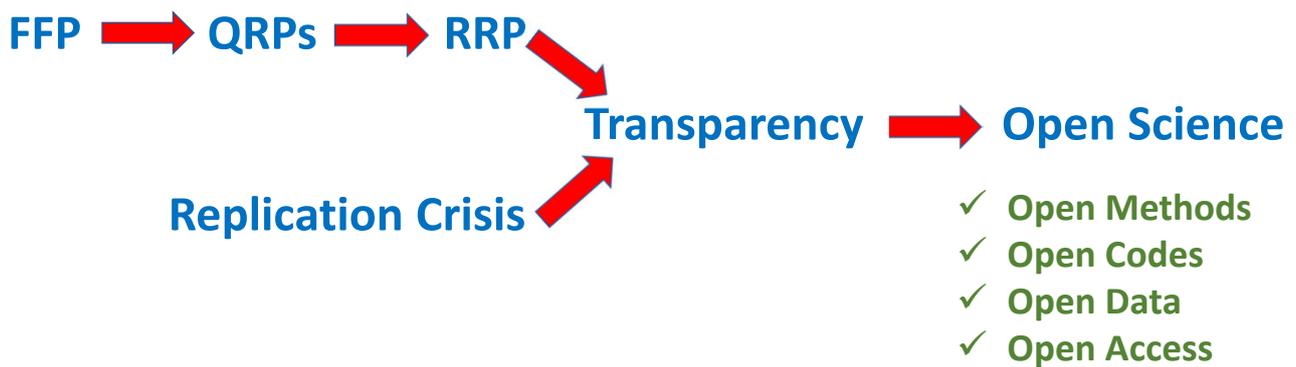


What research institutes can do to foster research integrity

Lex Bouter

2021-09-28 – What research institutes can do – keynote ENRIO 2021 congress –
30 minutes excl. Q&A

Recent evolution in views on how to foster Research Integrity



During the last decade – the period in which I’ve been active in the field of RI – I’ve seen a shift from detecting and sanctioning FFP via prevention of QRPs towards stimulating RRP. The root causes of the Replication Crisis are QRPs (selective reporting first and foremost). More transparency in the form of open science practices helps to foster RRP and offers a way out of the Replication Crisis.



National Survey on **Research Integrity**

www.nsri2020.nl

@SurveyIntegrity

Research integrity covers a whole range of researcher behaviors: research misconduct (falsification, fabrication and plagiarism – FFP), questionable research practices (QRPs), responsible research practices (RRPs).

In this survey among all academic researchers in the Netherlands we study the prevalence of FF, 11 QRPs and 11 RRP, and explore their relation with 11 explanatory variables.

www.nsri2020.nl

Gopalakrishna G, Wicherts JM, Vink G, Stoop I, van den Akker O, ter Riet G, Bouter L. Prevalence of responsible research practices and their potential explanatory factors: a survey among academic researchers in The Netherlands.

MetaArXiv (6 July 2021).

<https://doi.org/10.31222/osf.io/xsn94>

Gopalakrishna G, ter Riet G, Cruyff MJ, Vink G, Stoop I, Wicherts JM, Bouter L. Prevalence of questionable research practices, research misconduct and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/vk9yt>

Five most prevalent QRPs (score 5,6,7)	Prevalence (%)
Not submitting or resubmitting a valid negative publication	17.5
Insufficient mentioning of study flaws and limitations in publications	17.0
Insufficiently supervised or mentored junior co-workers	15.0
Insufficient attention to the equipment, skills or expertise	14.7
Inadequate notes of research proces	14.5

11 QRPs were assessed on a 7-pointscale raging from 1 (never) to 7 (always) referring to the last 3 years.

Gopalakrishna G, ter Riet G, Cruyff MJ, Vink G, Stoop I, Wicherts JM, Bouter L. Prevalence of questionable research practices, research misconduct and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/vk9yt>

QRP/FF	Prevalence (%)
Any Frequent QRP (at least 1/11 QRPs with a score of 5,6,7)	51.3
Fabrication (making up data or results)	4.3
Falsification (manipulating research materials, data or results)	4.2
Any FF (either fabrication or falsification or both)	8.3

11 QRPs were assessed on a 7-pointscale ranging from 1 (never) to 7 (always) referring to the last 3 years.

Fabrication and Falsification was assessed by a dichotomous question (yes/no) referring to the last 3 years.

Gopalakrishna G, ter Riet G, Cruyff MJ, Vink G, Stoop I, Wicherts JM, Bouter L. Prevalence of questionable research practices, research misconduct and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/vk9yt>

Selection (5/11) of RRP (score 5,6,7)	Prevalence (%)
Disclosure of funding and (non-)financial conflicts of interest	96.5
Following FAIR principles when appropriate	75.0
Publishing Open Access	72.6
Full public disclosure of codes, syntaxes and data	47.2
Pre-registration of study protocols	42.8

RRPs were assessed on a 7-point scale ranging from 1 (never) to 7 (always) referring to the last 3 years.

Gopalakrishna G, Wicherts JM, Vink G, Stoop I, van den Akker O, ter Riet G, Bouter L. Prevalence of responsible research practices and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/xsn94>



What is good for the **truth** of and the **trust** in research is not always good for your academic career

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Researchers have to navigate the dilemmas that originate from the fact that *What is good for the truth of and the trust in research is not always good for your academic career.*

Many rewards in academia are linked to having positive and spectacular results as these are published more easily in high impact journals and will be cited more often.

The various Questionable Research Practices (QRPs) have in common that they can effectively help to get these positive and spectacular results.

Functioning of moral compass depends on:

- Virtuousness of the individual
- Research climate in the lab
- Adequate incentives



Researchers navigate these dilemmas with their moral compass. The quality of the compass depends on how virtuous a researcher is.

But there are also strong other drivers of researcher behaviour in the direct professional environment and the system of science at large.

That doesn't diminish the personal responsibility to behave well in research. In fact it makes personal responsibility larger: individual researchers also have to help to improve the research climate and to remove perverse incentives.

Explanatory factors associated with QRP, FF and RRP

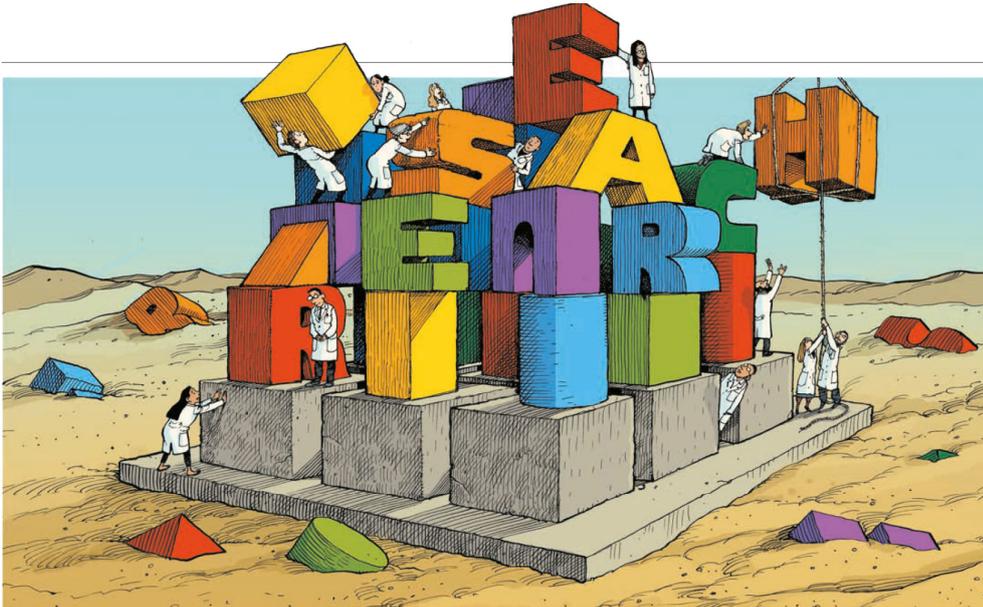
Explanatory factor	QRP	FF	RRP
Perceived likelihood of detection by reviewers		↓	
Perceived publication pressure	↑		↓
Reported adherence to scientific norms	↓	↓	↑
Perceived organizational justice	↓		
Perceived poor supervision and mentoring	↑		↑
Perceived competitiveness	↑		
Perceived work pressure	↑		↑
Perceived funding pressure			↑

Arrows refer indicate the association of the external variable at issue with the outcome listed. Green arrows indicated associations with better research integrity, red arrows indicate association with worse research integrity. Thickness of the arrows roughly indicate the magnitude of the effect size. The effect sizes were derived from a multivariable regression model controlling for five background variables and all explanatory factors.

Please remember that the data come from a cross-sectional study and by no means 'prove' causality.

Gopalakrishna G, ter Riet G, Cruyff MJ, Vink G, Stoop I, Wicherts JM, Bouter L. Prevalence of questionable research practices, research misconduct and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/vk9yt>

Gopalakrishna G, Wicherts JM, Vink G, Stoop I, van den Akker O, ter Riet G, Bouter L. Prevalence of responsible research practices and their potential explanatory factors: a survey among academic researchers in The Netherlands. MetaArXiv (6 July 2021). <https://doi.org/10.31222/osf.io/xsn94>



Research integrity: nine ways to move from talk to walk

Nature 2020; 586: 358-60

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Researchers need help from their institutions in avoiding questionable research practices. We're currently organizing workshops aimed at translating the NSRI findings to actions research institutes can take. In this we use the toolbox of the SOPs4RI project.

In 2020 we published in Nature what these institutions should do specifically, based on research from a large EU consortium: <https://sops4ri.eu/>

Mejlgaard N, Bouter LM, Gaskell G, Kavouras P, Allum N, Bendtsen AK, Charitidis CA, Claesen N, Dierickx K, Domaradzka A, Reyes Elizondo A, Foeger N, Hiney M, Kaltenbrunner W, Labib K, Marušić A, Sørensen MP, Ravn T, Rea Ščepanović R, Tijdink JK, Veltri GA. Research integrity: nine ways to move from talk to walk. Nature 2020; 586: 358-60. <https://www.nature.com/articles/d41586-020-02847-8>

The European Code of Conduct for Research Integrity (<http://www.allea.org/wp-content/uploads/2017/03/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf>) was

published in 2017 and made mandatory for research sponsored by the EU (Horizon 2020 and Horizon Europe). See page 6 of Horizon Europe Programme Standard Application Form (https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/af/af_he-ria-ia_en.pdf) states:

We declare that the proposal complies with ethical principles (including the highest standards of research integrity as set out in the ALLEA European Code of Conduct for Research Integrity, as well as applicable international and national law, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. Appropriate procedures, policies and structures are in place to foster responsible research practices, to prevent questionable research practices and research misconduct, and to handle allegations of breaches of the principles and standards in the Code of Conduct.

The hyperlink of Appropriate procedures, policies and structures opens the Guideline for Promoting Research Integrity in Research Performing Organisations (https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/guideline-for-promoting-research-integrity-in-research-performing-organisations_horizon_en.pdf) by the SOPs4RI (<https://sops4ri.eu/>).

Area	Topic	Action*
Support	Research environment	Ensure fair assessment procedures and prevent hypercompetition and excessive publication pressure.
	Supervision and mentoring	Create clear guidelines for PhD supervision (such as on meeting frequency); set up skills training and mentoring.
	Integrity training	Establish training and confidential counselling for all researchers.
Organization	Ethics structures	Establish review procedures that accommodate different types of research and disciplines.
	Integrity breaches	Formalize procedures that protect both whistle-blowers and those accused of misconduct.
	Data practices and management	Provide training, incentives and infrastructure to curate and share data according to FAIR principles.
Communication	Research collaboration	Establish sound rules for transparent working with industry and international partners.
	Declaration of interests	State conflicts (financial and personal) in research, review and other professional activities.
	Publication and communication	Respect guidelines for authorship and ensure openness and clarity in public engagement.

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The SOPs4RI toolbox covers 9 topics. I will provide some examples on the first 2 of these.

Mejlgaard N, Bouter LM, Gaskell G, Kavouras P, Allum N, Bendtsen AK, Charitidis CA, Claesen N, Dierickx K, Domaradzka A, Reyes Elizondo A, Foeger N, Hiney M, Kaltenbrunner W, Labib K, Marušić A, Sørensen MP, Ravn T, Rea Ščepanović R, Tijdink JK, Veltri GA. Research integrity: nine ways to move from talk to walk. *Nature* 2020; 586: 358-60. <https://www.nature.com/articles/d41586-020-02847-8>



RESEARCH ARTICLE

Perceptions of research integrity climate differ between academic ranks and disciplinary fields: Results from a survey among academic researchers in Amsterdam

Tamarinde L. Haven^{1*}, Joeri K. Tijdkink^{1,2}, Brian C. Martinson³, Lex M. Bouter^{1,2}

RESEARCH ARTICLE

Perceived publication pressure in Amsterdam: Survey of all disciplinary fields and academic ranks

Tamarinde L. Haven^{1*}, Lex M. Bouter^{1,2}, Yvo M. Smulders³, Joeri K. Tijdkink^{1,4}

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The Wellcome Trust published in 2020 a very informative survey results on how researchers perceive their culture: <https://wellcome.ac.uk/sites/default/files/what-researchers-think-about-the-culture-they-work-in.pdf>.

We studied the research climate in the two universities and the university medical center in Amsterdam

www.amsterdamresearchclimate.nl

Publications:

- Haven TL, Tijdkink JK, Martinson BC, Bouter LM. Perceptions of research integrity climate differ between academic ranks and disciplinary fields: results from a survey among academic researchers in Amsterdam. PLoS ONE 2019; 14: e0210599 (<https://doi.org/10.1371/journal.pone.0210599>).
- Haven TL, de Goede MEE, Oort FJ. Personally perceived publication pressure: revising the Publication Pressure Questionnaire (PPQ) by using work stress models. Research Integrity and Peer Review (2019) 4:7 (<https://doi.org/10.1186/s41073-019-0066-6>)
- Haven TL, Bouter LM, Smulders YM, Tijdkink JK. Perceived publication pressure in Amsterdam: survey of all disciplinary fields and academic ranks. PLoS ONE 2019; 14: e0217931. (<https://doi.org/10.1371/journal.pone.0217931>)
- Haven T, Tijdkink J, Pasman HJ, Widdershoven G, ter Riet G, Bouter L. Do research misbehaviours differ between disciplinary fields? A mixed methods study among

academic researchers in Amsterdam. *Research Integrity and Peer Review* 2019; 4:25. (<https://doi.org/10.1186/s41073-019-0081-7>)

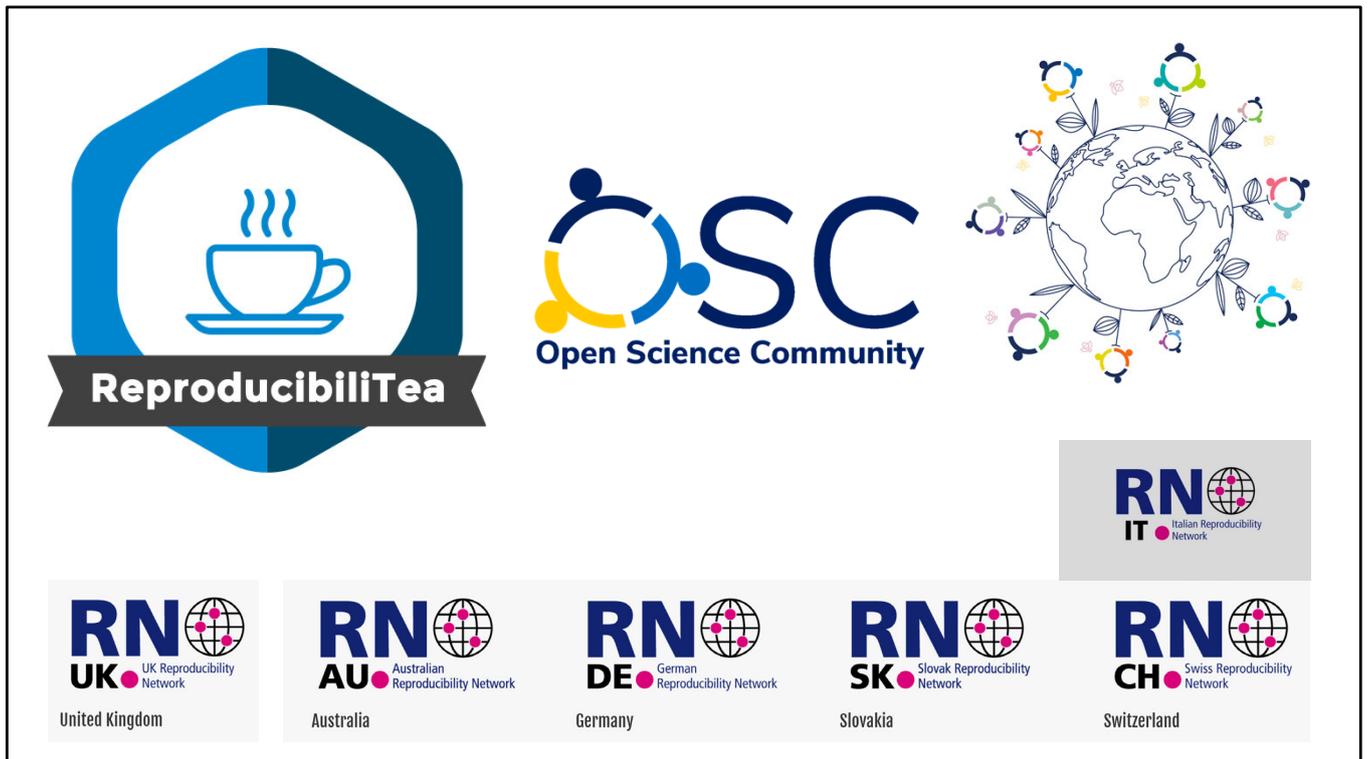
- Haven T, Tijdink T, Martinson B, Bouter L, Oort F. Explaining variance in perceived research misbehavior: results from a survey among academic researchers in Amsterdam. *Research Integrity and Peer Review* 2021; 6:7. <https://rdcu.be/cjUlq>



https://russellgroup.ac.uk/media/5925/realising-our-potential-report_4-compressed.pdf?section2

<https://russellgroup.ac.uk/media/5924/rce-toolkit-final-compressed.pdf?section2>

https://russellgroup.ac.uk/media/5923/realising-our-potential-case-studies_3-compressed.pdf?dl1

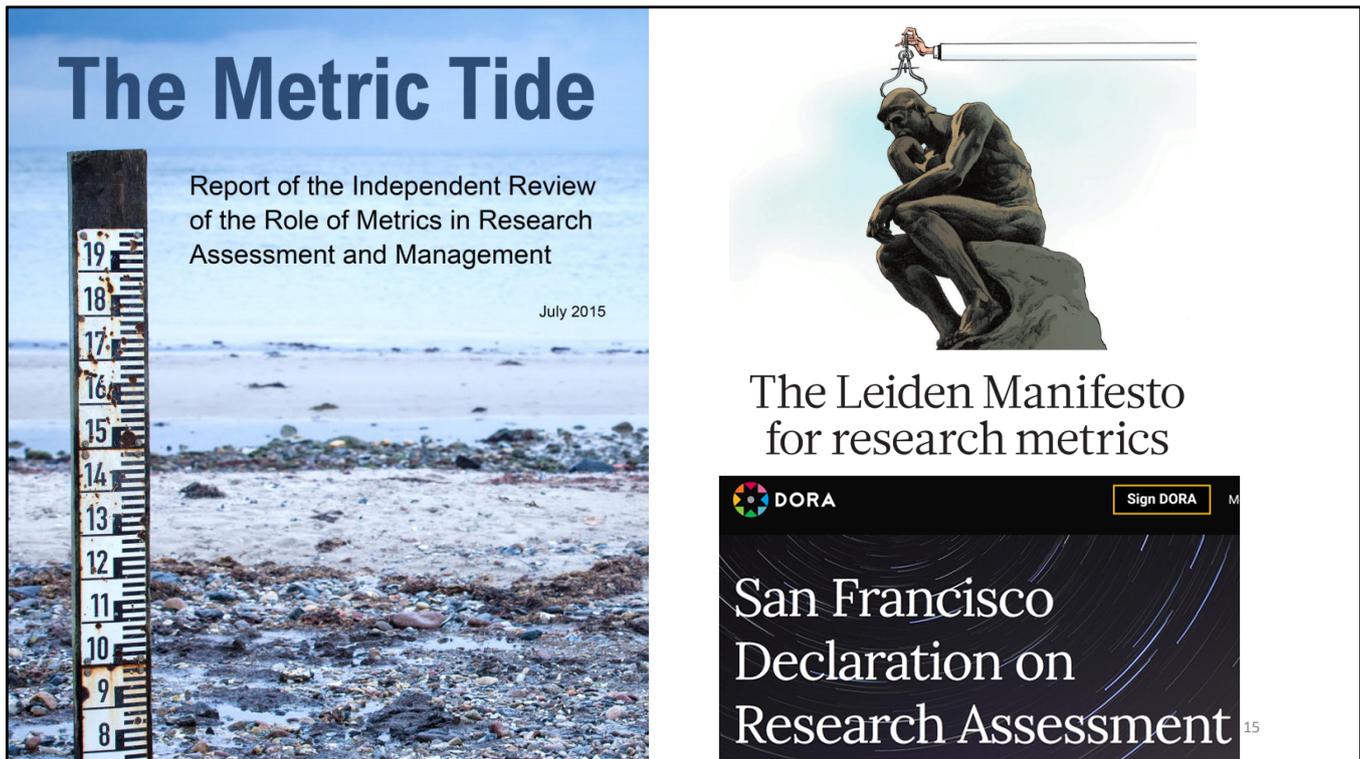


Early career researchers can drive reform and make the difference. Here are some examples of networks that accelerate local change.

<https://www.ukrn.org/>

<https://reproducibilitea.org/>

<https://inosc-starter-kit.netlify.app/>



During recent years the simplistic and isolated use of quantitative bibliometric indicators (e.g. Impact Factor and H-index) to evaluate research institutes and research programs has been strongly criticized.

My point today is that they can be perverse incentives when dominating the assessment of individual researchers.

That leads to moral dilemmas researchers have to face and navigate.

<https://re.ukri.org/sector-guidance/publications/metric-tide/>

<http://www.leidenmanifesto.org/>

<https://sfdora.org/read/>



Assessment of researchers

- Grant applications
- Vacancies
- Promotion
- Tenure
- Awards

Incentives works well

For *intended* effects:

- More publications and citations

But also for *unintended* effects:

- Focus on quantity, not quality
- More plagiarism and duplicate publication
- More 'salami slicing', gift authorship and use of predatory OA journals
- Citation cartels and fake peer reviewers
- Stronger 'Matthew effect', less equity
- Less time-consuming responsible research practices

All incentives can and will be gamed if stakes are high¹⁷

Both the upside and the downside of incentives is that they work so well. That means that if not carefully chosen they can do a lot of damage.

ESSAY

The Hong Kong Principles for assessing researchers: Fostering research integrity



PLoS Biology 2020; 18: e3000737

18

How to realize fair assessment procedures of researchers is outlined in the Hong Kong Principles.

The name Hong Kong refers to the city where the 6th WCRI was held in 2019. Before and during the conference we discussed the HKPs and after the conference they were endorsed by its participants.

Moher D, Bouter L, Kleinert S, Glasziou P, Sham MH, Barbour V, Coriat AM, Foeger N, Dirnagl U. The Hong Kong principles for assessing researchers: fostering research integrity. PLoS Biology 2020; 18: e3000737

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000737>

Please endorse the HKPs at www.wcrif.org/guidance/hong-kong-principles

On this webpage you can also find best practices, PP slides and a video on the HKPs.

Hong Kong Principles

1. Assess responsible research practices
2. Value complete reporting
3. Reward the practice of Open Science
4. Acknowledge a broad range of research activities
5. Recognize essential other tasks like peer review and mentoring

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Moher D, Bouter L, Kleinert S, Glasziou P, Sham MH, Barbour V, Coriat AM, Foeger N, Dirnagl U. The Hong Kong principles for assessing researchers: fostering research integrity. PLoS Biology 2020; 18: e3000737.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000737>

Please endorse the HKPs at www.wcrif.org/guidance/hong-kong-principles

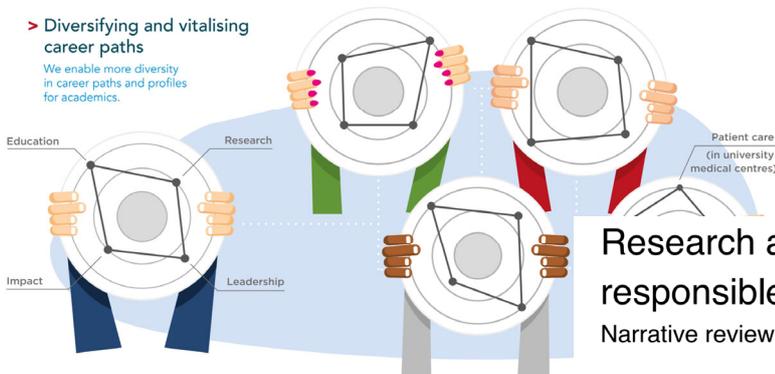
On this webpage you can also find best practices, PP slides and a video on the HKPs.

Room for everyone's talent

towards a new balance in the recognition and rewards of academics

> Diversifying and vitalising career paths

We enable more diversity in career paths and profiles for academics.



Research assessments should recognize responsible research practices

Narrative review of a lively debate and promising developments



Noémie AUBERT BONN¹ and Lex BOUTER²

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VSNU, NFU, KNAW, NWO and ZonMw: 'Recognition and Awards of Academics'

https://www.vsnv.nl/en_GB/Recognition-and-rewards-of-academics.html

<https://www.vsnv.nl/files/documenten/Domeinen/Onderzoek/Position%20paper%20Room%20for%20everyone%E2%80%99s%20talent.pdf>

More initiatives to improve the assessment of researchers are reviewed in:
Aubert Bonn N, Bouter L. Research assessments should recognize responsible research practices: narrative review of a lively debate and promising developments. MetaArXiv (19 July 2021).

<https://osf.io/preprints/metaarxiv/82rmi>

Educatie Research Info corona  **Amsterdam UMC**
Universitair Medische Centra Over ons Mijn Dossier

← Onze opleidingen



Superb supervision junior - mentoring your PhD candidate towards responsible conduct of research



Superb supervision senior – a course for senior PhD supervisors

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<https://www.vumc.nl/educatie/onze-opleidingen/opleidingsdetail/superb-supervision-junior-mentoring-your-phd-candidate-towards-responsible-conduct-of-research.htm>

<https://www.vumc.nl/educatie/onze-opleidingen/opleidingsdetail/superb-supervision-senior-a-course-for-senior-phd-supervisors.htm>



I would like to end with a plea for more Research on Research Integrity because we know so little and urgently need to strengthen the evidence base.



Science With And For Society

WIDening participation and strengthening the ERA



Programme
Fostering Responsible Research Practices



Research programmes › Replication Studies

Replication Studies

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These two research programs have started a tradition in research on research that also fuelled success in EU funding schemes. We'll currently working towards a second combined round of this funding scheme.

<https://www.zonmw.nl/en/research-and-results/fundamental-research/programmas/programme-detail/fostering-responsible-research-practices/>

<https://www.nwo.nl/en/researchprogrammes/replication-studies>

<https://ec.europa.eu/programmes/horizon2020/en/h2020-section/science-and-society>

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-11-widening-participation-and-strengthening-the-european-research-area_horizon-2021-2022_en.pdf

Joeri K. Tijdink et al., Towards a Research Agenda for Promoting Responsible Research Practices, Journal of Empirical Research on Human Research Ethics 2021; 16(4): 450–460



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29 May – 1 June 2022



wcri2022.org
[@WCRIFoundation](https://twitter.com/WCRIFoundation)



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15 October 2021

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