Research integrity during the COVID-19 pandemic

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What’s next...
Past, present and future

2017

2018

2019

2020

2021

We are here
What is research integrity and why is it important?
Research generates and organises knowledge by the systematic investigation and study of materials and sources.

The value and positive impact of research is dependent on trust.

Upholding the principles of research integrity make research trustworthy.
A definition of research integrity

Research integrity is the coherent and consistent adherence to a set of principles that are characteristic of responsible and ethical research and that underpin the trustworthiness of research.
The Australian Code for the Responsible Conduct of Research
Principles of responsible research conduct

The principles (P1–P8) that are the hallmarks of responsible research conduct are:

P1 **Honesty** in the development, undertaking and reporting of research
- Present information truthfully and accurately in proposing, conducting and reporting research.

P2 **Rigour** in the development, undertaking and reporting of research
- Underpin research by attention to detail and robust methodology, avoiding or acknowledging biases.
- Disclose and manage conflicts of interest.

P3 **Transparency** in declaring interests and reporting methodology, data and findings
- Share and communicate research methodology, data and findings openly, responsibly and accurately.

P4 **Fairness** in the treatment of others
- Treat fellow researchers and others involved in the research fairly and with respect.
- Appropriately reference and cite the work of others.
- Give credit, including authorship where appropriate, to those who have contributed to the research.

P5 **Respect** for research participants, the wider community, animals and the environment
- Treat human participants and communities that are affected by the research with care and respect, giving appropriate consideration to the needs of minority groups or vulnerable people.
- Ensure that respect underpins all decisions and actions related to the care and use of animals in research.
- Minimise adverse effects of the research on the environment.

P6 **Recognition** of the right of Aboriginal and Torres Strait Islander peoples to be engaged in research that affects or is of particular significance to them
- Recognise, value and respect the diversity, heritage, knowledge, cultural property and connection to land of Aboriginal and Torres Strait Islander peoples.
- Engage with Aboriginal and Torres Strait Islander peoples prior to research being undertaken, so that they freely make decisions about their involvement.
- Report to Aboriginal and Torres Strait Islander peoples the outcomes of research in which they have engaged.

P7 **Accountability** for the development, undertaking and reporting of research
- Comply with relevant legislation, policies and guidelines.
- Ensure good stewardship of public resources used to conduct research.
- Consider the consequences and outcomes of research prior to its communication.

P8 **Promotion** of responsible research practices
- Promote and foster a research culture and environment that supports the responsible conduct of research.
The principles of research integrity are translated into practice by humans (researchers) working in a complex system of expectations (responsibilities) and traditions.

- Level of experience
- Personality traits
- Conventions followed by research disciplines
- Research environment where research is conducted
Breach of research integrity

Serious Breach of research integrity

Excellent

Responsible

Questionable

Irresponsible

Poor

Variation in translation of the principles of research integrity into research practice

Honesty
Rigour
Transparency
Fairness
Recognition
Accountability
Promotion
Breach of research integrity

Serious Breach of research integrity

Excellent
Responsible
Poor

Questionable Research Practices

Honesty
Rigour
Transparency
Fairness
Recognition
Accountability
Promotion

Variation in translation of the principles of research integrity into research practice

33 – 72%

2 – 14%
Why is research integrity important?

- Upholding the principles of research integrity makes research trustworthy
- Research integrity is the foundation for research excellence
- Research integrity allows us to recognize and address the entire spectrum of research practice including breaches
- Ensures the positive impact of research and mitigates diverse risks
- Enables public trust and social licence
Past, present and future

- 2017
- 2018
- 2019
- 2020
- 2021

We are here
Research communicated about COVID-19

Jan 21, 2020 - Aug 8, 2020

1644 New in the Past 7 Days | 45727 Cumulative Papers
Research integrity during a pandemic

What are the needs for trustworthy research?

How have research practices changed?

Are the principles of research integrity the same?

What are the challenges for ensuring research integrity?

How might we solve these challenges?
Andrew Greentree
Catherine Gomes
Alemayehu Molla
RMIT’s RIA Network
Anita Arndt
Chloe Patton
David Blades
Jessica Keath
Stephanie Morrison-Duff
Robyn Barnacle
Gary Pearce
Nicholas Smale

RMIT Researchers and Research Integrity Advisors
Experts in Research Management, Integrity and Ethics
Experts in Graduate Research
Experts in Research Data
RITE BITES interviews

Prof Andy Greentree from RMIT Physics - Link to Video on Stream
A/Prof Cat Gomes from RMIT Media and Communications - Link to Video on Stream
Mr Nick Smale from RMIT Vietnam - Link to Video on Stream
Prof Sergio Litewka from University of Miami - Link to Video on Stream
Prof Michael Kalichman from UCSD - Link to Video on Stream
Ms Zoë Hammatt from University of Hawaii
Ms Susan Zimmerman from Secretariat on Responsible Conduct of Research Canada

What are the challenges for research integrity during the COVID-19 pandemic?
RITE BITES interviews – ideas

The principles of research integrity remained crucial and a need for more guidance for researchers

Communication challenges for supervisory teams and relationships, a lack of spontaneous interactions

Urgency means we don’t need to spend time thinking about integrity and ethics or that ethics is extra

Over enthusiastic rush to produce writing, peer review and publish

Lack of rigour in rapid research, an increased need for openness and transparency

Pressure and unwellness

Politicization of research

What are the challenges for research integrity during the COVID-19 pandemic?
The principles of research integrity are translated into practice by humans (researchers) working in a complex system of expectations (responsibilities) and traditions

- Level of experience
- Personality traits
- Conventions followed by research disciplines
- Research environment where research is conducted

The COVID-19 pandemic has changed the research environment and introduced new stressors for researchers, institutions, publishers, funders, …
Breach of research integrity

Serious Breach of research integrity

Questionable Research Practices

Variation in translation of the principles of research integrity into research practice

Not following ethics approval
Flawed designs and reporting
Mismanagement of data
Inadequate supervision

Falsification
Fabrication
Plagiarism

Excellent
Responsible
Questionable
Irresponsible
Poor
Solutions (Good ideas)

Guidance and advice on COVID-19 and research integrity for RMIT researchers and other stakeholders

A description of new practices and resources for responsible research and meeting the Australian Code for the Responsible Conduct of Research (2018) during the COVID-19 pandemic

Researcher Portal Guidance Note
What's next...

Principles of responsible research conduct

The principles (P1-P8) that are the hallmarks of responsible research conduct are:

P1 Honesty in the development, undertaking and reporting of research
  • Present information truthfully and accurately in preparing, conducting and reporting research.

P2 Respect in the development, undertaking and reporting of research
  • Endeavor research by intention to discover and report methods, results, conclusions and interpretive biases.

P3 Transparency in declaring interests and reporting research methodologies, data and findings
  • Share and communicate research methodologies, data and findings openly responsibly and accurately.

P4 Fairness in the treatment of others
  • Treat fellow researchers and others involved in the research fairly and with respect.

P5 Appropriate relevance and the work of others
  • Give credit, including attribution where appropriate, to those who have contributed to the research.

P6 Respect for research participants, the wider community, animals and the environment
  • Treat human participants and communities that are affected by the research with care and respect, giving appropriate consideration to the needs of minority groups or vulnerable people.

P7 Accountability for the results of research in the environment
  • Minimize adverse effects of the research on the environment.

P8 Recognition of the rights of Aboriginal and Torres Strait Islander peoples to be engaged in research that affects, or is of particular significance to them
  • Recognize, value, and respect the cultural heritage, knowledge, cultural property and credentials of all Aboriginal and Torres Strait Islander peoples.

Responsible research conduct is fostered and underpinned by the research culture of the institution.
Institutions have an obligation to encourage and support responsible research conduct. They are committed to ensuring that all students and researchers are aware of and adhere to the principles of responsible research conduct.

Responsibilities of institutions

1. Establish and maintain good governance and management practices for responsible research conduct

2. Identify and comply with relevant laws, regulations, guidelines and policies related to the conduct of research.

3. Develop and maintain the currency and ready availability of a suite of policies and procedures which ensure that institutional practices are consistent with the principles and responsibilities of the code.

4. Provide ongoing training and education that promotes and supports responsible research conduct for all researchers and those in other relevant roles.

5. Ensure supervision of research trainees have the appropriate skills, qualifications and resources.

6. Identify and train research integrity Advisors who assist in the promotion and fostering of responsible research conduct and provide advice to those with concerns about potential breaches of the Code.

7. Support the responsible dissemination of research findings. Where necessary, take action to correct the record in a timely manner.

8. Provide access to facilities for the safe and secure storage and management of research data, records and primary material and, where possible and appropriate, allow access and information.

9. Facilitate the prevention and detection of potential breaches of the Code.

10. Provide mechanisms to receive concerns or complaints about potential breaches of the Code.

11. Ensure that the process for managing and investigating concerns or complaints about potential breaches of the Code is timely, effective and in accordance with procedural fairness.

12. Support the welfare of all parties involved in an investigation of a potential breach of the Code.

13. Base findings of investigations on the balance of probabilities and ensure any actions are commensurate with the seriousness of the breach.

Responsibilities of researchers

Researchers and research supervisors have the responsibility to carry out their research duties in a manner that is in accordance with the principles and responsibilities of the Code.

R1. Support a culture of responsible research conduct at your institution and in your field of practice.

R2. Provide guidance and mentorship on responsible research conduct to other researchers or students under your supervision and, where appropriate, mentor these individuals.

R3. Undergo professional development and training in responsible research conduct.

R4. Comply with the relevant laws, regulations, disciplinary statutes, ethical guidelines and institutional policies related to responsible research conduct. Ensure that appropriate approvals are obtained prior to the commencement of research, and that compliance of any approvals are adhered to during the course of research.

R5. Ensure that the ethics principles of research integrity, fairness, beneficence and respect are applied to human research.

R6. Engage with Aboriginal and Torres Strait Islander peoples and respect their legal rights and local laws, customs and protocols.

R7. Ensure that the De-Identification, Reduction and Removal of Identifiers are considered at all stages of research involving humans and minimize the impacts on animals used in research and in doing support the welfare and wellbeing of these animals.

R8. Adopt controls appropriate to the type of research and ensure that conclusions are justified by the results.

R9. Respect, clarify, accurately access and complete records of all research involving research data, records and primary material and, where possible and appropriate, allow access and information.

R10. Support the welfare of all parties involved in an investigation of a potential breach of the Code.

R11. Base findings of investigations on the balance of probabilities and ensure any actions are commensurate with the seriousness of the breach.

R12. Report suspected breaches of the Code to the relevant institution and/or authority.
Governance of research integrity

The expectation that your research is trustworthy and meets the principles of the Australian Code is **unchanged** by the COVID-19 pandemic.

Given the changes and new stressors introduced by the COVID-19 pandemic, the principles and responsibilities described by the Australian Code and its supporting guides are perhaps more important now than ever.
Conducting COVIDSafe Research

RMIT has developed a COVIDSafe Plan which outlines the principles, protocols and actions that will guide the safe transition of learning, research and work to campus.

Adherence with the COVIDSafe Plan will prevent the spread of COVID-19 infection.

Please review and implement RMIT COVIDSafe Plan as appropriate and required for your research.

RMIT WorkLife – COVIDSafe Plan
Changing research directions including pathways for ethical research

Physical distancing measures and other restrictions have meant that some research methods and approaches are significantly changed.

The substitution or modification of research methods requires careful thought and practice around responsible research, including to amend existing ethics approvals.

Guidance Note on COVID-19 and Human Research Ethics [Researcher Portal]

Guidance Note on COVID-19 and Animal Research Ethics [Researcher Portal]
Ethics and integrity reflexivity

Procedural ethics
- Encourages the incorporation of ethics principles into research
- Cannot hope to capture all ‘ethical risk’ that a research project might carry or present

Ethics in practice
- Decisions ‘on the fly’, may not seem like red-letter dilemmas but can still be significant
- Cannot be predicted

“the researcher should constantly take stock of their actions and their role in the research process and subject those to the same critical scrutiny as the rest of their data”

Guillemin and Gillam
Rigour, robustness and reproducibility

In accordance with the Australian Code, researchers at RMIT will ‘Underpin research by attention to detail and robust methodology, avoiding or acknowledging biases’, and, ‘Adopt methods appropriate to the aims of the research and ensure that conclusions are justified by the results.’

International reporting guidelines developed for various study types relevant for COVID-19-related research can help you to design research and meet these responsibilities - EQUATOR

Open research practices including the registering of your research plans to enable the peer review of your proposed methodologies ahead of conducting work - Rapid Registered Reports
Open and Reproducible Research on Open Science Framework

Ian Sullivan,1,2 Alexander DeHaven,1 and David Mellor1

1Center for Open Science, Charlottesville, Virginia
2Corresponding author: ian@cos.io

By implementing more transparent research practices, authors have the opportunity to stand out and showcase work that is more reproducible, easier to build upon, and more credible. Scientists gain by making work easier to share and
Responsible dissemination and sharing

In line with the Australian Code, researchers at RMIT will ‘Disseminate research findings responsibly, accurately and broadly.’

You can rapidly and openly share your research using preprint servers and products

RMIT Figshare

The rapid and open sharing of COVID-19 research data is supported by global funders and publishers
Integrity in rapid data management

In line with the Australian Code, researchers at RMIT will ‘Retain clear, accurate, secure and complete records of all research including research data and primary materials. Where possible and appropriate, allow access and reference to these by interested parties.’

Please create and use a Research Data Management Plan [Researcher Portal – DMP and RMIT Library Research Data Management Guide]

Access SpringerNature research data support services, which are available free for COVID-19-related research [SpringerNature Website]

Use specific guidelines developed for the management, sharing and reuse of research data for COVID-19 research [RDA Webpage / PDF 4th Edition]
Preventing breaches may be more important than preventing serious breaches

1. Insufficient mentorship or supervision of junior colleagues
2. Inadequate management and storage of research data and records
3. Under reporting of flaws and limitations of study design
## TOP 5 RESEARCH MISBEHAVIORS

<table>
<thead>
<tr>
<th>Biomedicine (N = 601)</th>
<th>Natural sciences (N = 119)</th>
<th>Social sciences (N = 241)</th>
<th>Humanities (N = 109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficiently supervise or mentor junior co-workers</td>
<td>Insufficiently supervise or mentor junior co-workers</td>
<td>Insufficiently supervise or mentor junior co-workers</td>
<td>Insufficiently supervise or mentor junior co-workers</td>
</tr>
<tr>
<td>7.02 (3.63)</td>
<td>7.72 (4.13)</td>
<td>6.95 (3.78)</td>
<td>6.76 (3.84)</td>
</tr>
<tr>
<td>Choose a clearly inadequate research design or using evidently unsuitable measurement instruments</td>
<td>Not report clearly relevant details of study methods</td>
<td>Not publish a valid ‘negative’ study</td>
<td>Use published ideas or phrases of others without referencing</td>
</tr>
<tr>
<td>6.04 (3.16)</td>
<td>6.95 (3.43)</td>
<td>6.54 (3.98)</td>
<td>6.69 (3.69)</td>
</tr>
<tr>
<td>Let own convictions influence the conclusions substantially</td>
<td>Insufficiently report study flaws and limitations</td>
<td>Let own convictions influence the conclusions substantially</td>
<td>Selectively cite to enhance own findings or convictions</td>
</tr>
<tr>
<td>5.99 (3.17)</td>
<td>6.64 (3.41)</td>
<td>5.86 (2.95)</td>
<td>6.17 (3.25)</td>
</tr>
<tr>
<td>Give insufficient attention to the equipment, skills or expertise which are essential to perform the study</td>
<td>Let own convictions influence the conclusions substantially</td>
<td>Choose a clearly inadequate research design or using evidently unsuitable measurement instruments</td>
<td>Choose a clearly inadequate research design or using evidently unsuitable measurement instruments</td>
</tr>
<tr>
<td>5.64 (3.32)</td>
<td>6.38 (3.27)</td>
<td>5.77 (3.38)</td>
<td>6.11 (3.37)</td>
</tr>
<tr>
<td>Keep inadequate notes of the research process</td>
<td>Give insufficient attention to the equipment, skills or expertise which are essential to perform the study</td>
<td>Give insufficient attention to the equipment, skills or expertise which are essential to perform the study</td>
<td>Unfairly review papers, grant applications or colleagues applying for promotion</td>
</tr>
<tr>
<td>5.62 (2.96)</td>
<td>6.26 (3.48)</td>
<td>5.71 (3.3)</td>
<td>6.03 (4.15)</td>
</tr>
</tbody>
</table>
Remote collaboration, supervision and graduate research

- Rescope HDR research projects and supervisory teams
- Limited opportunities for spontaneous interactions
- Difficulties in the direct monitoring of research
- A tendency for supervisory teams to discuss and review clean data and results
- Potential to miss non-verbal cues
- Support for belonging and wellbeing to HDR candidates and other supervisees
Resources for supervisory teams

Guides for supervisors on using Microsoft Teams, supporting candidates remotely and handling tough conversations [Researcher Portal]

COVID-19 Candidate Action and Support Plan (HDR-COVID-CASP) [SGR Website / PDF Form]

‘In a time of uncertainty: supporting belonging and wellbeing for HDR students’ a review by RMIT researchers for SGR [PDF Publication]

‘Science-ing from home’ articles published in Nature journal here and here about supervising remotely.
Use trusted resources for data

- **RMIT WorkLife Remote Working** provides guidance and tools for staff about working remotely including resources for accessing data.

- **Advice on storing research data**
  [Researcher Portal - Storing your research data]

- **AARNET Cloudstor** [AARNET Webpage]
  1TB ‘Dropbox-like’ storage for all researchers at RMIT

- **RMIT Figshare**: information [Researcher Portal] and access [RMIT Figshare]

- **Australian Code: Data guide** [NHMRC webpage]
Summary
• Research integrity underpins trustworthiness and impact

• Principles of research integrity include honesty, rigour, transparency, fairness, respect, recognition, accountability and promotion

• The COVID-19 pandemic has changed the research environment and introduced new stressors for researchers, institutions, …

• The expectation that your research is trustworthy and meets the principles of the Australian Code is **unchanged** by the COVID-19 pandemic

• Planning your research is important / Being willing to reflect on your research as you conduct it is also important

• **How will you meet the principles of the Australian Code for your research?**
Please review your research, if necessary:

1. Implement RMIT’s COVIDSafe Plan in order to conduct research safely.
2. Amend existing research ethics approvals and adapt human research and research involving the care and use of animals.
3. Plan and practice the responsible management, sharing and reuse of COVID-19 research data and findings using trusted platforms.
4. Consider ways to ensure rigour and reproducibility such as using open pre-registration of your project.
5. Assist graduate researchers by accessing the School of Graduate Research’s COVID-19 Candidate Action and Support Plan.
Research Integrity Advisors

Need advice about research integrity? Speak to an RIA.

Acknowledgements

Andrew Greentree
Catherine Gomes
Alemayehu Molla
RMIT’s RIA Network
Anita Arndt
Chloe Patton
David Blades
Jessica Keath
Stephanie Morrison-Duff
Robyn Barnacle
Gary Pearce
Nicholas Smale
Thank you!
Good luck!
Stay safe!

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Key References

Slide 10:
Council of Canadian Academies (CCA) and Expert Panel on Research Integrity, Honesty, accountability and trust: fostering research integrity in Canada. 2010, Council of Canadian Academies: Ottawa.

Slide 12:

Slide 29:

Slide 34:

Slide 35:

Other:
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Speed Science: The risks of swiftly spreading coronavirus research. Reuters. Published 19 Feb 2020