International Science Council

Freedom and responsibility in the 21st century

A contemporary perspective on the free and responsible practice of science

Robin Grimes

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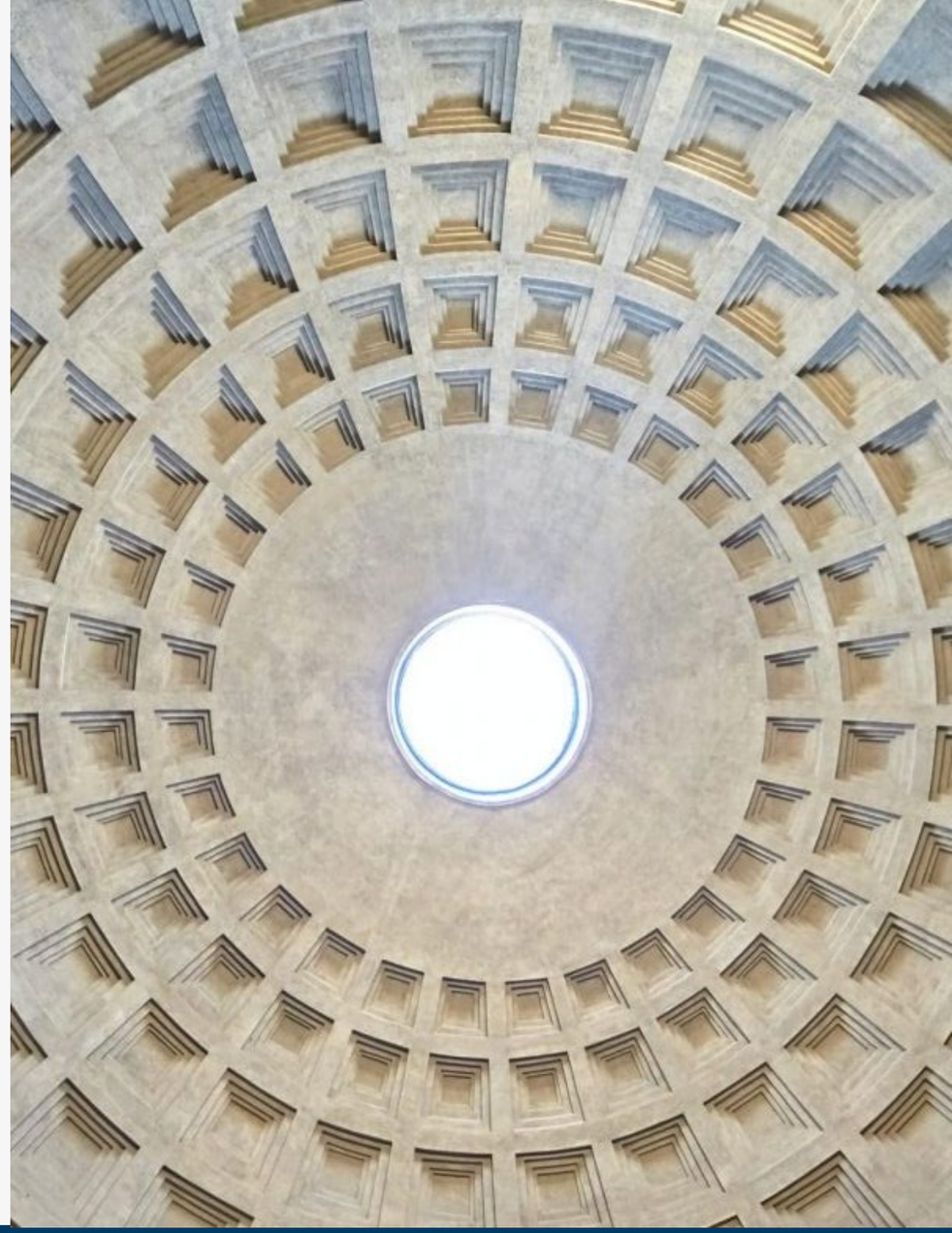

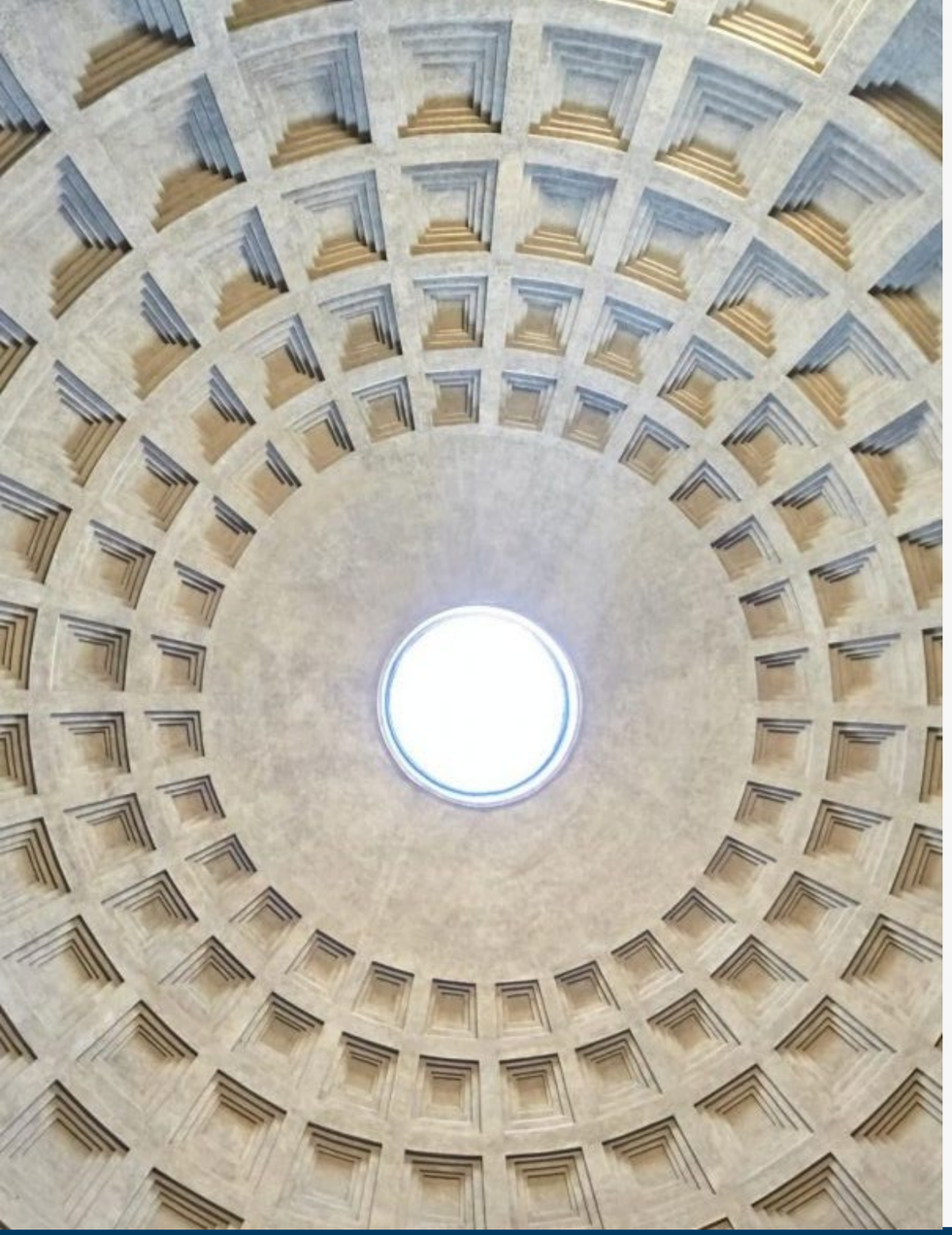

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The Right to Science

Universal Declaration of Human Rights

"Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to **share in scientific advancement and its benefits**."

International Covenant on Civil and Political Rights

"Everyone shall have the right to freedom of expression; this right shall include freedom to **seek, receive and impart information** and ideas of all kinds."

Principle of Freedom and Responsibility in Science

"The free and responsible practice of science is fundamental to scientific advancement and human and environmental well-being. Such practice, in all its aspects, requires **freedom of movement**, **association, expression and communication for scientists**, as well as **equitable access to data, information, and other resources** for research. It requires responsibility at all levels to carry out and communicate scientific work with **integrity, respect, fairness, trustworthiness, and transparency**, recognizing its benefits and possible harms. In advocating the free and responsible practice of science, the Council **promotes equitable opportunities** for access to science and its benefits, and **opposes discrimination** based on such factors as ethnic origin, religion, citizenship, language, political or other opinion, sex, gender identity, sexual orientation, disability, or age."

Committee for Freedom and Responsibility in Science (CFRS)

CFRS is the guardian of the ISC's Principle of Freedom and Responsibility in Science.

The committee works to uphold and protect the freedoms that scientists should enjoy, and the responsibilities they carry, while engaging in scientific practice.


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Freedom and responsibility in the 21st century

A contemporary perspective on the responsible practice of science

This project explores contemporary perspectives on the meaning and interpretation of scientific freedom and responsibility around the world.

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Freedom and responsibility in the 21st century

- A legacy of scientific freedom and responsibility (Section 2)
- 21st century: new challenges, opportunities (Section 3)
- Basic principles (Section 4)
- Concrete freedoms and responsibilities (Section 5)
- Recommendations for key stakeholders (Section 7)

Developments of the 21st century warrant a global discussion and re-examination of scientific freedom and responsibility.

A legacy of scientific freedom and responsibility

- Institutional and intellectual autonomy
- Freedom of thought and expression
- Internal and external responsibilities for science
- ‘Free’ science versus ‘planned’ science
- From freedom of movement to human rights

Scientific freedoms and responsibilities exist in the contemporary context in which scientists work. In the 21st century, it will be important to strengthen the connection between scientific freedom and responsibility. Both are essential to the flourishing of science.

21st century:
new challenges,
new opportunities

New challenges, opportunities …

- **New media**: Access to information; social media; `infodemic'; science journalism
- **New scepticism**: Publicity of scientific debate; spread of misinformation, anti- and pseudo-scientific views
- **Open science**: Increased accessibility of results and data; public and government engagement with research; but opportunities for abuse and misinterpretation; security risks; challenges to privacy and data protection
- **Globalization of science:** Challenges and benefits of working across cultures, epistemologies, and political systems

New challenges, opportunities …

- **Managed science:** demand of value for money and accountability; misuse of **metrics** in research funding
- **Illiberal policies:** political interference; the challenge of **anti-intellectualism**
- **Social engagement:** shifting societal position of scientists; **responsible advocacy**
- **New technological potential:** opportunities and threats of **dual-use** technologies
- **Science and industry:** competing priorities; differing **values**; implications for scientific freedoms, e.g. publishing, expectations of shared responsibilities and norms of behaviour

Basic principles

Basic principles: revisiting Merton's values

- Science for the **common good:** the pursuit of science as a global public good
- Science **shared:** effective communication with scientists, the public and policymakers
- Science is **universal** and **diverse**: embracing the rich diversity of scientific communities, methodologies, perspectives, and knowledge systems
- **Particularity** of scientific institutions: protecting institutional autonomy, upholding rigorous modes of scientific inquiry, and implementing responsible management

The ISC is committed to a vision of science as a global public good, applying and extending this norm in the 21st century.

Concrete freedoms and responsibilities

Concrete freedoms and responsibilities in or for

- Scientific **investigation**
- Scientific **collaboration**
- Scientific **critique**
- Science **communication**

This paper argues that scientific freedoms come hand-in-hand with responsibilities for all scientific researchers. These include individual and collective responsibilities when undertaking scientific investigation, professional collaboration, scientific critique and science communication.

Freedoms and responsibilities in scientific *investigation*

Research integrity and science ethics

- Upholding the tenets of a scientific ethic

New technologies

- Considering dual-use potential and impact on human rights

Responsible research management

- Creating the conditions for, and effectively evaluating, free and responsible science

Science in the private sector

- Determining rules of engagement and managing private-public tensions

Freedoms and responsibilities in scientific *collaboration*

Globalization of science

- Creating the conditions that enable free and responsible scientific exchange
- Considering the interests of those involved in research, and the environment

Open science

- Ensuring equitable access to science, and to combat abuse of open access publishing
- Assisting meaningful access to and use of research

Freedoms and responsibilities in scientific *critique*

- Freedom from undue influence on independent judgement
- Responsibility to declare conflicts of interest
- Collective responsibility to combat scientific misconduct
- Protection for whistle-blowers

Freedoms and responsibilities in scientific *communication*

- Making scientific knowledge accessible, comprehensible to broader society
- Scientists require the freedom to share their scientific expertise (academic freedom) and must also be afforded the universal right to freedom of expression
- Responsibility of governments, research institutions and private actors to protect these freedoms

Recommendations

Recommendations for:

- Researchers
- Research organizations
- The private sector
- Governments
- International science organizations

All stakeholders in global science systems are responsible for protecting scientific freedoms, but different stakeholders have different roles to play in this endeavour.

Similarly, different stakeholders have different obligations for ensuring that the individual responsibilities of scientific researchers are upheld.

Researchers

***When conducting research*:**
1. Act with **integrity**;
2. Meet the international standards of **ethical practice** within their discipline, and;
3. Consider the **unexpected consequences** of their findings.

***When collaborating in research*:**
1. Uphold the **rights**, and consider the interests, of all those involved in collaborative research;
2. Assist **access** to research, and;
3. Respect and embrace **diversity** in the scientific community.

***When communicating research*:**
1. Consider the needs of diverse **audiences**;
2. Explain **uncertainties** in scientific evidence and signal **risks** of emerging technologies, and;
3. Challenge **misinformation**.

Research organizations

***In managing science*:**

1. Uphold rigorous standards of **research integrity**;
2. Deal with **scientific misconduct** fairly and consistently;
3. Adopt appropriate **performance evaluations** for research and researchers, and;
4. Encourage and facilitate the **communication** of scientific evidence to societal stakeholders, including the public and policymakers.

In protecting researchers:

1. Protect and promote scientific freedoms and the responsible practice of science through **legislation and culture**;
2. Implement support and guidance for the **professional development** of researchers;
3. Defend **institutional autonomy** from external influence, and;
4. Protect staff from **coercion and pressures**, including from political, religious and commercial vested interests.

The private sector

- Development of frameworks and infrastructures through which **national governance** and **international standards** can be secured

- Emphasis on protecting scientific freedoms while upholding responsibilities at all levels.

Governments

1. Adopt and enforce **standards** for ethical practice in scientific research;
2. Adopt **legal frameworks** which respect scientific freedoms and the autonomy of research institutes;
3. Encourage **science communication** and **public engagement** with scientific research;
4. Ensure scientific freedoms while protecting **national security**;
5. Nurture **diversity** in science through agenda-setting and funding strategies;
6. Foster effective **science-policy interfaces** to utilise and safeguard scientific advice, and;
7. Monitor and **report** on the state of science and scientific researchers, according to international standards.

International science organizations

1. To foster international **scientific collaboration**, including advocating for sufficient funding and appropriate tools for transnational collaborate across borders in diverse cultural, scientific, and legal environments;
2. To promote **diversity** in the global science community;
3. To protect the principle and practice of **open science**, and;
4. To advocate for the role of scientists in national and international **policymaking**.

Discussion

Discussion

Please submit your questions in the **Chat Box** or raise your hand by clicking **Raise Hand** in the webinar controls.

Member Survey on the draft Discussion Paper:
The survey will be open to all ISC Members until **22 October 2021** https://council.science/about-us/governance/general-assembly/discussion-paper-21st-century/

Please direct any queries to Vivi Stavrou, CFRS Executive Secretary, vivi.stavrou@council.science

Call for partners: collaborating on issues related to scientific freedom and responsibility in science
Online form within Members' section of the ISC website: https://council.science/members/call-for-partners-scientific-freedom-responsibility-science/

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