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1 Introduction

The Royal Society of Chemistry is the professional body for chemistry and the chemical sciences. Through our Royal Charter we have responsibility for advancing the chemical sciences by:

- sharing and publishing chemical knowledge, innovations and breakthroughs

- driving and upholding the highest standards of qualification, competence and conduct of chemical scientists

- serving the public interest by acting in an advisory capacity on matters relating to the science and practice of chemistry

- supporting our members to thrive and make a positive impact.

As a professional body, we set the standards for the chemical sciences profession. Maintaining these high standards, especially within our membership, is a collaborative eff( )TjEMC mm We workally gm t]T0.01

3 Ethical standards

We set professional and ethical standards to ensure the credibility of the chemical sciences and its practitioners. This is fundamental to increasing the reputation of the chemical sciences and its role in helping address global challenges.

Ethical practice applies to all fields of chemical science and our standards are designed to complement:

- regulations that apply locally and internationally (we acknowledge customs in various parts of the world differ. However, all our members accept the same obligations on admission to the Royal Society of Chemistry)

- ethical and professional guidance for associated fields

- Depending on the sector in which you work, or particular task you are completing, ethical practice can change and differ. However, the four underlying ethical standards will always apply.

Inclusivity

Working in an inclusive and non-discriminatory manner at all times is essential in upholding professional standards. This means being aware of and removing barriers for all individuals.

By 'inclusion', we mean that people feel they belong in the world of chemical sciences; by 'diversity' we mean anything that can make us different from others. This includes (but is not limited to) demographic background such as gender, ethnicity, age, and disability, as well as areas such as socio-economic status, education, neurological status, career path and stage. Diversity within the workplace should be seen as a way to create and nurture different views and add strength to any aspect of working life. Take a look at our resources for more on our definitions of inclusion and diversity.

Integrity

Working with honesty and not wilfully misleading others is a fundamental attribute for scientists. The research and practice of chemical science should be objective and decisions taken in a fair and impartial manner. Work should be conducted in a lawful and ethical manner, which will enhance the justification of that work to the wider public. Avoiding professional misconduct and declaring conflicts of interest are integral to maintaining the integrity of the chemical sciences.

Respect

Respecting others, and the rights0000r049004E0kca1mhecti050059 Tm0 Tw 12 0 0 12 28.3464 3012 0Ctai1 T0054004E

4 Speaking out

If anyone is a witness to misconduct in research, to bullying and harassment or needs further information on the ethics of a course of action, they can [contact the Royal Society of Chemistry](#) for guidance. Often, consultation with a colleague or mediation can resolve issues that arise in the workplace.

Although speaking out is often seen as an individual action, it should be the responsibility of all to embed this culture and allow individuals to raise concerns when appropriate. It takes courage to speak out. By creating an inclusive culture, employers and wider communities will benef t from these actions through increased integrity.

4.1 What should you do?

When speaking out, depending on the severity, you should prepare fully and evaluate the implications for you and others. Making unfounded allegations in itself is unethical and every effort should be made to have supporting evidence prepared for any future eventuality. Reporting – where possible – should be through an appropriate process. Receiving and reacting to feedback from any action is important, which includes respecting the viewpoints of others and then deciding whether escalation is appropriate.

There are a number of steps you can follow to escalate an issue.

4.1.1 Informal disclosure

5 For employers, managers and supervisors

As an employer, manager or supervisor, you will be in a position of influence. You should make clear and transparent ethical statements and set employee expectations. Working practices and policies should be clearly outlined. You should operate lawfully and be able to explain decisions appropriately.

It is also the responsibility of the wider organisation to create a culture of good ethical practice to make all of the above possible.

Applying the ethical standards

Inclusivity

- Provide equal opportunities without discrimination

- Support a diverse workforce and maintain an accessible environment

- Be impartial and transparent in all aspects of employment

- Adhere to good human rights practices

- Recognise that in many circumstances conflict can be resolved through good communication and discussion

Integrity

- Maintain confidentiality when using personal information

- Accurately appraise the work of others

- Be honest and truthful in all aspects of your work

- Never attempt to obtain or accept any bribe or secret commission of any sort

- Never pressurise or knowingly allow employees to publish or report false or selective data, reports or results

- Follow the laws and regulations in the country where you carry out your work

- Never ask others to act unethically

Respect

- Create an environment in which employees are fully comfortable to be themselves and are able to meet their objectives, succeed and realise their potential

- Create an atmosphere where employees can speak out and challenge others

- Be a role model for good professional behaviours

- Never bully or harass others or allow an atmosphere where this is accepted

- Never create undue stress on individuals to work unethically

Responsibility

- As a supervisor or manager, you should establish the parameters for your supervisees/employees to follow

- Recognise the right of employees to exercise their discretion

- Encourage an environment of innovation

- Facilitate the professional development of employees

- Maintain up-to-date records and provide accurate references on request

- Resolve conflict with clear procedures that are free of conscious and implicit bias.

- Act upon conduct inconsistent with values and policies

- Provide an appropriate risk management system

- Maintain health and safety and the security of laboratories and employees

- Also be aware of any implications that are of public interest and interest to the wider environment

- Supervisors or managers should establish the parameters of any voluntary role before employees start

6 For employees

If you are an employee, you not only have rights of employment, but usually also obligations and contractual requirements when entering your employment. There are also legally enforceable duties that arise from the relationship between you and your employer.

Responsibility

- Be willing to adopt new and improved methods of working and contribute to an environment of success

- Apply good risk management practices

- Provide whatever skills and competencies were outlined when entering employment

- Report conduct inconsistent with the organisation's values and policies

- In small organisations, recognise that the chemical scientist may be the only subject matter expert present. In these circumstances the Royal Society of Chemistry can be consulted in the strictest confdence

- Follow all expectations with respect to health and safety, and the security of laboratories and colleagues. Also be aware of any implications that are of public interest and interest to the wider environment

7 For teachers and educators

Working within education (at any level) brings with it accountability for laying the foundations of ethical standards. You have a duty to lead by example and continually enhance good scientif c conduct. In doing so, future generations will continue this trend.

8 For students

As the next generation of chemical scientists, students have a duty to learn and improve ethical standards as they progress through their education. As science is becoming increasingly multidisciplinary, consideration should be given to ethical standards in other sectors, such as healthcare or pharmacy, if this applies to you.

Applying the ethical standards

Inclusivity

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9 Publishing ethics: for authors, reviewers and editors

The publication of scientific research in journals is one of the ways in which we meet our Royal Charter objectives. We set ethical standards for publishing to ensure the integrity of the scientific record.

Editors, authors, reviewers, and anyone participating in the publication of scientific research has a responsibility to uphold these standards.

In cases where these guidelines are breached or appear to be so, the Royal Society of Chemistry will consult the core practices and best practice guidelines of the Committee on Publication Ethics (COPE) and act accordingly.

Applying the ethical standards

Inclusivity

- Support a diverse author, reviewer and editor community, and encourage participation from underrepresented groups
- Be aware of potential disabilities and ease of reading when authoring
- Be aware of, and seek to mitigate the effects of, conscious and implicit bias in decision-making
- Ensure due credit is given to all those contributing to the work, including previous work that inspires any publication

Integrity

- Gather data with a high level of reliability and report findings honestly
- Lead author should check submissions for plagiarism prior to peer review
- Declare all sources of funding and make clear any conflicts of interest
- Conduct peer review and editorial roles with due confidentiality and impartiality
- Report suspected misconduct to the appropriate person or body
- Artificial Intelligence (AI) tools should not be listed as an author on scholarly journal articles, as the tools are not able to take responsibility for the work.

Respect

- Treat all stakeholders in the publishing process with respect
- Remain objective, constructive and impartial, and do not make personal criticisms of others when participating in peer review or scientific debate
- Never bully or harass others or enable an atmosphere where this is accepted

Responsibility

- Highlight any hazards or risks associated with the reported work
- The lead author is ultimately responsible for publication
- Ensure data is available to future scrutiny
- Acknowledge funders and other stakeholders
- Ensure appropriate approval, informed consent, or both, for studies using live animals or human subjects
- Be aware of copyright compliance
- Use of Artificial Intelligence tools should be transparent and disclosed or acknowledged in the relevant sections of a manuscript.

Supporting materials

- COPE Ethical Guidelines for Peer Reviewers
- RSC reviewer responsibilities

10 For volunteers

Volunteering is when individuals give up their time freely to do a role, jointly agreed with an organisation.

Applying the ethical standards

Inclusivity

- Contribute to an inclusive and diverse environment at all times

- Act in a way that does not discriminate or exclude anyone

- Recognise that in many circumstances conflict can be resolved through good communication and discussion

Integrity

- Follow the law and regulations in the country where you carry out your voluntary role

- Never attempt to obtain or accept any bribe or secret commission of any sort

- Never ask others to act unethically

Respect

- Treat all staff and volunteers with respect

- Never bully or harass others or allow an atmosphere where this is accepted

- Contribute to an environment in which all volunteers are comfortable to be themselves and succeed

- Speak out when you see unethical behaviour

- Understand and respect that other volunteers may have differing levels of commitment

Responsibility

- Work with other volunteers and staff to achieve the strategic aims and objectives of any activity

- Be aware of, and declare, any perceived or actual conflict of interest

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11 Communicating (including social media)

12 Use of Artificial Intelligence (AI)

Due to the likely increase in prevalence of AI in everyday lives, the application of AI in an open and ethical manner is necessary. Organisations such as employers or learning institutions should provide requisite training for this new area and should also be aware that use of AI as any requirement may lead to negative impacts in relation to accessibility of such tools and also unintended socio-economic consequences.

Applying the ethical standards

Inclusivity

- Users should take measures to prevent bias and discrimination whilst using AI tools.

- Organisations should guard against unintended negative accessibility/inclusivity consequences due to use of AI.

- Users should be aware that AI answers could be based on information containing societal biases and stereotypes.

Integrity

- Users should be transparent and accountable in their use of AI.

- Users should take responsibility for the output of any AI tools and how that is used.

- Users should be aware that AI tools maybe designed to learn from its users inputs, meaning a risk to privacy and intellectual property, and that AI generates information from a wide range of sources some of which maybe incorrect, irrelevant or out of date.

- AI may not consider ethical codes of practice when sourcing information for outputs.

Respect

- Users should be aware of the use of an individual(s) personal data whilst using AI.

Responsibility

- Users should be accountable for content generated and explicit in the inputs and outputs being clearly documented.

- Users should maintain human oversight whilst using AI tools and ensure there is not a sole reliance on automated processes. Human judgment and values should be central in any decisions. When applying to workflows, it is important to consider if the automation is used for decision support, or decision management, especially if direct customer interaction is considered:

- **Decision Management:** Decision management refers to the application of rules, logic, and decision-making algorithms to AI systems. It allows automated decision-making based on predefined criteria and business rules.

- **Decision Support:** is where the final decision is still made by a hum   nsiú

13 Health and safety and the environment

Employers, employees, and others working in the chemical sciences must be aware of regulations that relate to their field of scientific work. For example, health and safety and the environment, negligence, discrimination, and data protection.

Applying the ethical standards

Inclusivity

- Be aware that smaller organisations will rely on individuals to ensure compliance of the law

- Employers must ensure workplaces are appropriate and meet any legislation on accessibility

Integrity

- Minimise adverse effects on health, safety and the environment. Recommend the use of best health, safety and environmental practice and give appropriate advice

- Speak out and put objections on record if legal requirements are being overlooked, and do all you can to put matters right

Respect

- Respect the viewpoints and situations of others

- Never endanger others or yourself

Responsibility

- Maintain a broad and up-to-date understanding of the regulations and other developments in your field

- Be aware of any specific legislation or guidelines for any particular sector you engage with

- Never place individuals in a situation where their integrity is jeopardised or conflicted

14 For the self-employed and consultants

If you are self-employed, many of the guidelines set out in section 5 (employers) and 6 (employees) will be applicable to you.

Effective working relationships are built on mutual trust and respect. It is essential, therefore, to maintain integrity

15 For those managing intellectual property (IP)

If you are managing IP as part of your role or professional activities, you should be aware of the relevant legislation and legal implications of your actions.

Applying the ethical standards

Inclusivity

- Acknowledge past scientif c work and recognise any substantial help and advice received

- Never act with discrimination

Integrity

- Guard against wrongful disclosure of conf dential information, especially relating to current research and development work

- Be unbiased and honest. Refrain from all forms of plagiarism and correct any errors which may arise over time

Respect

- Respect the work of others at all times

- Never bully or harass others, or allow an atmosphere where this is accepted

- Acknowledge contributions of individuals and teams where appropriate

- Never disclose personal information to third parties without prior consentntuS-uT0ap10 12 28.339164 525.1971 Tm(P

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16 Trade unions and industrial action

Membership of a trade union can bring a number of benefits to employees.

Lawful participation in industrial action is not unethical and can benefit the public interest. However, it can also conflict with the duties of an individual to serve the public interest. It is the individual's choice but they should always act in a lawful manner.

There is no obligation to take part in industrial action if it is against the individual's wishes. Industrial action will potentially represent a breach of the employee's contract of employment. Some contracts of service specify that disputes which cannot be resolved by negotiation are referred to an arbitrator. We recommend this arrangement.

17 Presenting legal evidence

If you are called on to give evidence to government or parliamentary committees or other public bodies, you can contact us for advice about procedures. You may also wish to seek legal advice.

If the subject is of relevance to the wider community you may wish to contact us for our viewpoint and input. If so, we can make written or oral submissions. You should ask to see transcripts of evidence that you have given as a witness so that errors can be corrected before publication. You should also study the terms of reference and establish the capacity in which you will appear.

You should not imply endorsement by the Royal Society of Chemistry unless this is obtained in advance.

18 Tribunals and inquiries

A tribunal is usually set up after an incident that causes public concern. Tribunals usually follow legal guidance except no charges are brought. Following the hearing, a report is produced. If serious criticisms or allegations of wrongdoing are made in the report then legal proceedings may follow.

If you are called to a hearing, we can advise you about your responsibilities and rights but we are not able to present. But we may decide to be present when a question of principle is raised that affects the profession as a whole.

You should have a right to receive a copy of the transcript and challenge any misleading statement relating to the evidence. Inquiries and tribunals often determine whether incompetence contributed to an accident or incident so

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