

Guidelines for Ethical, Diverse, Inclusive and Equitable Behaviours and Practises in the Worldwide Chemistry Community

Preamble: Past practices in chemistry, and science more generally, have sometimes excluded members of marginalized or historically excluded communities from participating fully within the discipline. IUPAC recognizes the importance of including talented individuals from a diverse range of communities so as to foster an environment of creativity, innovation, and respect within chemistry. As a member Union of the International Science Council, IUPAC opposes unjust or prejudicial treatment or commentary based on factors such as ethnic origin, religion, citizenship, language, sex, gender identity, sexual orientation, disability, or age.¹

Therefore, IUPAC is committed to supporting and engaging full participation of all people, regardless of race, age, gender, nationality and cultural origins, sexual orientation, skills and abilities, and experiences. IUPAC expects a free exchange and communication among all scientists, engagement in scientific discourse without repercussions, or fear thereof, as well as equitable and non-discriminatory access to the tools of science. IUPAC will sustain an environment where each individual is treated fairly and equitably, without prejudice and is given the same opportunity to serve, participate in and benefit from the organization, while maintaining the highest levels of professionalism and integrity. These requirements will foster creativity, innovation and respect within the chemical community and will ensure that chemical knowledge serves to improve peoples' lives and make the world a safer and healthier place.

Introduction: The International Union of Pure and Applied Chemistry (IUPAC) has prepared these guidelines in relation to responsible and ethical behaviours by professional chemists, by students/trainees studying chemistry,² by those working as staff or as volunteers in chemical organizations, and as appropriate by the chemical organizations themselves. The guidelines are intended to provide a framework for inclusivity and equity in all aspects of the chemical endeavour, whether in academic, government, industrial, non-profit, or NAO settings, and are in line with the mission of IUPAC to effectively contribute to the worldwide understanding and application of the chemical sciences, for the betterment of humankind and the environment (present and future). IUPAC endorses and promotes the Hague Ethical Guidelines for the responsible practice of chemistry in relation to chemical disarmament, non-proliferation, and the broader issue of responsible scientific conduct. These guidelines have been developed by the Organization for the Prohibition of Chemical Weapons (OPCW).

Core Values: IUPAC's core values, which guide the conduct of the Union and its relationship with stakeholders, emphasize scientific excellence, communication, transparency, diversity, and ethical behaviour. IUPAC expects that these behaviours will be practised and promoted by all of the Union's volunteers, staff and stakeholders.

Policy Documents: The following four IUPAC Policies have been approved by the 105th Bureau Meeting held on 17 April 2021:

1. IUPAC Conflict of Interest Policy

The list of factors is sourced from the ISC report on Freedom, Responsibility, and Universality of Science; see <https://council.science/publications/freedom-responsibility-and-universality-of-science-2014/>.

Chemistry is defined in its broadest sense, and so includes chemical engineering, chemical biology, chemical physics, chemical biotechnology, *inter alia*. IUPAC publishes three journals. The composition of the Editorial Advisory Board of *Pure and Applied Chemistry* is defined by Standing Orders and is therefore subject to the diversity invested within the Division President and Standing Committee membership. An appropriate diversity balance can be obtained by selection of up to six other representatives on the Editorial Board; usually, these have been past Division Presidents or past IUPAC Presidents. IUPAC also publishes the news magazine *Chemistry International* and a peer-reviewed chemistry education journal *Chemistry Teachers International* which has a group of Editors selected by geographic region and with regard to gender balance. A small number of other journals and standards database(s) are published in conjunction with major publishing houses. See <https://publicationethics.org/>.

2. IUPAC Financial Document Retention Policy
3. IUPAC Harassment Policy
4. IUPAC Privacy Policy

A policy document on social media use has been prepared during 2022.

What IUPAC does: The scientific work of IUPAC is conducted through project task groups, conferences, and workshops, as well as special events such as the World Chemistry Congress. IUPAC recognises achievement or chemical quality through prizes, awards and cognate activities such as the annually highlighted Top 10 Technologies. IUPAC volunteers provide specialized commentary and independent technical advice to other agencies and NAOs.

Governance: For the 2022-2023 biennium, IUPAC is governed by Council, whose membership comprises representative NAOs, by the Bureau comprising the Officers of IUPAC together with representatives of Divisions and Standing Committees, and by an Executive Committee. From 2024 onwards, IUPAC will be governed by Council and by an Executive Board comprising the Officers of IUPAC together with six elected representatives.

A cognate Science Board is composed of representatives of the technical Divisions and Standing Committees of IUPAC together with up to five additional members from the scientific community at large, and specified Officers. The members of Council and the above-mentioned Boards and Committees are all volunteers, and while working alongside the Secretariat staff, are required to adhere to IUPAC policies, the governance frameworks presented in the Statutes and Bylaws, and the terms of reference for committees. Any conflict of interest, or potential conflict of interest, should be declared prior to discussion of an item of business at an IUPAC-hosted or endorsed meeting.

Conferences, Workshops and other IUPAC meetings, including Project Task Group Meetings: IUPAC is committed to provide a safe, welcoming, productive, and supportive environment of respect and ethical behaviour for its many volunteers and staff members at the events, meetings, or activities organised by itself or by other organizations in conjunction with IUPAC. At all times, individuals representing IUPAC or engaged in IUPAC business or activities should act in accordance with the core values of IUPAC. Specific advice on behaviour is provided in the IUPAC policy document on harassment.

Organizers should ensure a speaker balance that reflects current demographics with respect to gender and geography, especially in relation to plenary and invited speakers. Invitations to emerging or mid-career researchers and educators are also encouraged to facilitate a balanced age profile in the conference or meeting program. Similarly, there should be gender, age, and geographical equity in the composition of committees and International Advisory Boards. Invitations to speakers and members of committees and advisory boards should be based on competency and free of bias and discrimination. As far as possible, conference arrangements should support the full participation of disabled individuals.

Awards and other Measures of Success: IUPAC actively encourages nominations for prizes and awards from a wide range of applicants, including women and historically excluded individuals. Where selection panels identify a lack of diversity in nominations, efforts should be made to reach out to candidates from underrepresented groups who may not yet have had an opportunity to apply. There should be gender, age, ethnicity, geographical and scientific balance in the composition of selection panels. The President of IUPAC, or their designated nominee, reserves the right to work with selection panels to add additional members to ensure balance and equity, and to maintain the integrity of decision-making. The confidentiality of discussions and decision-making, whether face to face, online or via email, should be respected at all times.

Integrity in Research and Publications: Recognition of the need for ethics, diversity, equity and inclusion in research, and in associated publishing, is important in order that the chemical sciences

take equal advantage of the talents and creativity of all contributors. This increases the quality of research and publications and ultimately the impact of the chemical sciences on lives and livelihood. IUPAC promotes the publication of scientific work based on scientific merit relative to opportunity, and without discrimination based on gender, race, ethnicity, sexuality, religion, nationality, age, or professional status of the authors. IUPAC notes that, since 2021, the Royal Society of Chemistry (UK) has brought together over 50 publishing organizations and set out comprehensive guidelines designed to ensure a more inclusive and diverse culture within scholarly publishing. Included in the author guidelines of scholarly journals and chemical society newsletters associated with the RSC guidelines are statements about the need for published material to be scientifically accurate and respectful. Inappropriate, disrespectful or gender-specific language is not acceptable. IUPAC fully supports the RSC publication guidelines,³ as well as the best practise guidelines of the Committee on Publication Ethics (COPE).⁴ Further, IUPAC recommends increased diversity in the reviewing and editorial panel of journals in the chemical sciences and will work with its stakeholders to achieve this, and to ensure an equitable outcome for peer review and publication outcome processes.

Social media: IUPAC values the use of social media to inform, educate, generate interest and awareness of its activities, and to connect chemistry professionals with each other and with the public. Ethical standards must be maintained in all online comments, statements, images, or tagged conversations. Abuse and/or prejudicial comments are unacceptable in statements, posts or messages made online on social media platforms in relation to IUPAC activities or policies. Furthermore, any online statement or post that tarnishes the integrity and reputation of IUPAC will not be tolerated. Where applicable, the individual will be required to remove inappropriate or disrespectful social media posts. Detailed advice is provided in the IUPAC policy document on social media.

Adoption of guidelines

IUPAC encourages national/regional chemical societies and chemical organizations to share these guidelines and associated documents widely with their stakeholders, and to promote them to individual members of their chemical community(s). IUPAC further encourages organizations and chemistry practitioners to adopt these guidelines, while recognising that implementation may vary between countries where cultural practises may differ.

***Document finalised by the Committee for Ethics, Diversity, Equity and Inclusion.
November 2022***

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