

SPIE CODE OF ETHICS

The Mission/Vision Statement of SPIE, the International Society for Optics and Photonics states that SPIE partners with researchers, educators, and industry to advance light-based research and technologies for the betterment of the human condition. It is the purpose of this statement to advance this vision by presenting ethical guidelines for society members, collaborators, and participants to abide by in their professional lives.

PROFESSIONAL BEHAVIOR

1. Discrimination based on race, religion, gender, age, disability, or sexual orientation is not acceptable.
2. Individual and public safety and welfare should be considered paramount in performance of professional duties.
3. Real and potential conflict of interest should be avoided and disclosed to all impacted parties when it cannot be avoided.
4. Technical knowledge and skills should be kept up-to-date and work should be performed in areas of competency.
5. Public statements should be realistic and issued in an objective and truthful manner based on available data.
6. Professional confidentiality should be maintained.
7. Accomplishments, publications, professional honors and titles should be accurately reported.

GUIDELINES FOR ETHICAL PUBLISHING*

RESEARCH RESULTS

The results of research should be recorded and maintained in a form that allows analysis and review. Research data should be immediately available to scientific collaborators. Following publication, the data should be retained for a reasonable period in order to be available promptly and completely for appropriate scientific review. Exceptions may be appropriate in certain circumstances in order to preserve privacy, to assure patent protection or for similar reasons.

Fabrication of data or selective reporting of data with the intent to mislead or deceive is an egregious departure from the expected norms of scientific conduct, as is the theft of data or research results from others.

PUBLICATION AND AUTHORSHIP PRACTICES

Authorship should be limited to those who have made a significant contribution to the concept, design, execution or interpretation of the research study. All those who have made significant contributions should be offered the opportunity to be listed as authors. Other individuals who have contributed to the study should be acknowledged, but not identified as authors. The sources of financial support for the project should be disclosed.

Plagiarism constitutes unethical scientific behavior and is never acceptable. Proper acknowledgement of the work of others used in a research project must always be given. Further, it is the obligation of each author to provide prompt retractions or corrections of errors in published works.

All collaborators share some degree of responsibility for any paper they coauthor. Some coauthors have responsibility for the entire paper as an accurate, verifiable, report of the

research. These include, for example, coauthors who are accountable for the integrity of the critical data reported in the paper, carry out the analysis, write the manuscript, present major findings at conferences, or provide scientific leadership for junior colleagues.

Coauthors who make specific, limited, contributions to a paper are responsible for them, but may have only limited responsibility for other results. While not all coauthors may be familiar with all aspects of the research presented in their paper, all collaborations should have in place an appropriate process for reviewing and ensuring the accuracy and validity of the reported results, and all coauthors should be aware of this process.

Every coauthor should have the opportunity to review the manuscript before its submission. All coauthors have an obligation to provide prompt retractions or correction of errors in published works. Any individual unwilling or unable to accept appropriate responsibility for a paper should not be a coauthor.

Collaborations are expected to have a process to archive and verify the research record; to facilitate internal communication and allow all authors to be fully aware of the entire work; and respond to questions concerning the joint work and enable other responsible scientists to share the data. All members of a collaboration should be familiar with, and understand, the process.

It should be recognized that honest error is an integral part of the scientific enterprise. It is not unethical to be wrong, provided that errors are promptly acknowledged and corrected when they are detected.

PEER REVIEW

Peer review provides advice concerning research proposals, the publication of research results and career advancement of colleagues. It is an essential component of the scientific process.

Peer review can serve its intended function only if the members of the scientific community are prepared to provide thorough, fair and objective evaluations based on requisite expertise. Although peer review can be difficult and time-consuming, scientists have an obligation to participate in the process.

Privileged information or ideas that are obtained through peer review must be kept confidential and not used for competitive gain.

Reviewers should disclose conflicts of interest resulting from direct competitive, collaborative, or other relationships with any of the authors, and avoid cases in which such conflicts preclude an objective evaluation.

CONFLICT OF INTEREST

There are many professional activities of scientists and engineers that have the potential for a conflict of interest. Any professional relationship or action that may result in a conflict of interest must be fully disclosed. When objectivity and effectiveness cannot be maintained, the activity should be avoided or discontinued.

**Based on Statement 02.2 APS Guidelines for Professional Conduct, permission granted to SPIE by APS in letter dated 22 October 2003.*

SPIE PUBLICATION ETHICS GUIDELINES

The *SPIE Code of Ethics* describes the Society's expectations for ethical conduct for members, collaborators and participants. This document augments this *Code* by describing procedures for addressing allegations or discoveries related to breaches of those expectations as they relate to Society publications.

DEFINITIONS

Plagiarism

SPIE defines plagiarism as the reuse of someone else's prior ideas, processes, results, or words without explicit attribution of the original author and source. Unauthorized use of another researcher's unpublished data or findings without permission is considered to be a form of plagiarism even if the source is attributed. SPIE considers plagiarism in any form, at any level, to be unacceptable and a serious breach of professional conduct.

Disputes about authorship

SPIE considers it the professional responsibility of all authors to ensure that the authorship of submitted papers properly reflects the contributions and consent of all authors. Proper authorship representation is generally a matter for the involved parties to resolve.

Duplicate submission

SPIE does not allow or sanction duplicate or concurrent submissions of a paper to more than one peer-reviewed journal. SPIE's journal guidelines state explicitly that "papers should describe the original work of the authors that has not been previously published in a refereed journal and is not currently under consideration for publication elsewhere." Duplicate submission abuses the resources of all affected journals, including the valuable time of editors, reviewers, and staff, and is unprofessional and unacceptable.

Duplicate publication

Duplicate publication in more than one peer-reviewed journal, which may be verbatim publication or publication of essentially the same paper, is a serious breach of professional conduct with potentially severe ethical and legal consequences. Prior publication or preliminary publication in a conference proceedings or similar publication or research report is allowed by SPIE provided that information is disclosed to the journal editor and the submission complies with the guidelines established for that journal.

Fabrication or misrepresentation of data or results

Fabrication of data or selective reporting of data with the intent to mislead or deceive is an egregious departure from the expected norms of scientific conduct, as is the theft of data or research results from others. SPIE considers any incidence of fabrication or misrepresentation to be an extremely serious breach of professional conduct, with potentially severe ethical and legal consequences.

INQUIRY AND INVESTIGATION

Discovering possible misconduct

There are several ways that SPIE may learn about incidences of possible publishing misconduct, either before or after publication of a work, including discovery as part of the publication review process, receipt of a direct communication alleging publication misconduct, or discovery in the course of internal review and preparation. Readers or authors who report allegations of misconduct should provide as much detail as possible, including copies of papers or documentation, known background information, etc. Anonymous allegations may not be considered. Unsubstantiated or frivolous complaints will not be considered.

Basic principles

If the editor and/or staff of an SPIE publication learns that an author may have acted improperly, which may include but is not limited to any of the circumstances defined above, then the editor and/or staff shall initiate an investigation of the alleged misconduct.

- All inquiries will be handled promptly and fairly.
- All parties connected to the allegation will be given the opportunity to respond.
- Appropriate confidentiality will be maintained.

SPIE Publication Ethics Committee

The SPIE Publications Ethics Committee is responsible for developing and monitoring policies and guidelines related to publishing ethics, advising journal editors and staff in matters pertaining to possible violations, and assisting with investigations of alleged violations.

Investigating/Enforcing body

The body responsible for investigating/enforcing publishing misconduct may be the Editor of the journal or conference proceedings, the SPIE Publication Ethics Committee, the Chair of the SPIE Publications Committee, the SPIE Executive Director, or any combination of the above, depending on the publication(s) involved and the nature of the allegation. SPIE will determine the appropriate investigating/enforcing body.

Investigative process

The investigative process depends on the type of allegation and how it is discovered.

Various information gathering and review steps may be taken, such as appointment of an independent review committee. In such cases it may be necessary to disclose specific details of the matter to other parties. In all cases every effort will be made to keep details of the investigation confidential to those involved and those with a need to know.

In all cases, the concerned parties will be informed of the allegation and given an opportunity to respond within 30 days. If no response is received within that time, a decision may be rendered based on known information. Additional steps may be taken at the discretion of the investigating/enforcing body.

The following sections give general guidelines related to an investigation of each type of misconduct defined above. Each case is unique and therefore may require a unique approach, as determined by the investigating/enforcing body.

Plagiarism: Plagiarism may be discovered by an author or researcher whose work has been plagiarized or published without consent, by a third party who is familiar with a prior work such as a reviewer or a reader, or by an editor. In cases alleging plagiarism, the investigating/enforcing body will obtain source documents and testimony and determine the validity of the allegation and extent of plagiarism. There are varying degrees of plagiarism warranting different consequences and corrective action, listed below from most to least serious:

1. Verbatim or nearly verbatim copying or translation of a full paper(s), or the verbatim or nearly verbatim copying or translation of a significant portion(s) of another paper(s).
2. Disclosing unpublished data or findings without permission, even if attributed.
3. Uncredited verbatim or nearly verbatim copying or translation of individual elements of another paper(s).
4. Uncredited paraphrasing of pages or paragraphs from another paper(s).
5. Credited verbatim copying or translation of a major portion of a paper without clear delineation (e.g., quotes or indents)

The degree of corrective action will be commensurate with the degree of plagiarism.

Disputes about authorship: The investigating/enforcing body will encourage the concerned parties to resolve the dispute themselves. If the matter is not resolved in this way, the investigating/enforcing body will evaluate the claim to determine whether the matter is within or outside SPIE's purview and an appropriate course of inquiry and investigative action.

Duplicate submission: If duplicate submission to a peer-reviewed journal is suspected or discovered at any time between submission and publication of a paper, the investigating/enforcing body will attempt to contact the other publication(s) to which the paper has been submitted or published to verify the occurrence of duplicate submission and to inform the editor of the other journal(s). If duplicate submission is confirmed, the paper will be immediately rejected. Additional sanctions may be warranted. An attempt will be made to coordinate corrective actions with the editor(s) of the other publication(s).

Duplicate publication: If duplicate publication in peer-reviewed journals is suspected, the investigating/enforcing body will confirm this by assessing the similarity and determining the paper's publication history. An attempt will be made to coordinate corrective actions with the editor(s) of the other publication(s).

Fabrication or misrepresentation of data or results: Investigations of this type of alleged or suspected misconduct require significant expertise and due diligence and also may have serious legal implications in addition to scientific implications. The investigation may involve the SPIE President and Executive Committee and may result in legal action.

CONSEQUENCES AND CORRECTIVE ACTIONS

If a finding of misconduct is determined, SPIE shall initiate corrective and/or disciplinary actions. The investigating/enforcing body will notify the individual(s) that corrective and/or disciplinary actions are being reviewed by SPIE. The named individual(s) shall be given the opportunity to respond within 30 days to the recommended corrective and/or disciplinary actions.

There are several possible corrective and/or disciplinary actions. Depending on the degree of misconduct, one or all may be applied:

- Notice of violation in the appropriate publication.
- Publication of an erratum.
- Removal of a published paper from the SPIE Digital Library with notice of reason.
- Rejection and return of papers in review and publication queues.
- Prohibition from publishing in the specific publication or any SPIE publication for a period of time commensurate with the severity of misconduct and prior history of the author(s).
- Prohibition from other forms of participation with SPIE.
- Repeat offenders subject to increased penalty.

No sooner than 30 days and no later than 90 days after notifying the individual(s) named in the recommendation, SPIE will issue a final determination of corrective and/or disciplinary action(s) to be taken.

SPIE acknowledges IEEE for permission to reprint and adapt portions of the "IEEE Plagiarism Guidelines" in these Guidelines.