

How IFSEA and Other Editors' Associations Are Helping to Professionalize Scientific Editing

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In April 1977, the First International Conference of Scientific Editors convened in Jerusalem. In attendance were journal editors from many nations, representing many scientific disciplines. Before the conference closed, these editors had launched a new organization—the International Federation of Scientific Editors' Associations (IFSEA).¹ IFSEA was to be an umbrella organization for associations of editors and other groups concerned with scientific publishing. Such an organization could facilitate communication between these groups, coordinate their activities, and help them develop consistent policies. Today, IFSEA's membership includes the Council of Biology Editors (CBE), the Association of Earth Science Editors (AESE), and the European Association of Science Editors (EASE), among others. Through IFSEA, these groups can coordinate their efforts to improve the quality of science publishing.

Editors' associations had proliferated for several decades before the birth of IFSEA. However, in the long history of scientific publishing, editors' associations are a recent phenomenon. Considering that the first scientific journals appeared in the seventeenth century, it seems remarkable that the first major scientific editors' association, CBE, did not form until 1957. But editors have long needed the guidance that editors' associations can provide.

This essay will discuss some of the problems faced by science editors. It will also explain how the editors' associations that comprise IFSEA are working

to solve these problems by providing a forum through which editors can share experiences and establish professional journal standards.

For most scientists, being asked to edit a scientific journal is a great honor. But few scientists fully appreciate how demanding the job can be until they're fully immersed in it. John Corliss, managing editor, *Journal of Protozoology*, notes that many editors, particularly those of small journals, are full-time researchers and authors, with little time for editing. Most lack professional training in editing, and are ill-prepared for the variety of tasks with which they're faced. As Corliss puts it: "[O]nly self-motivated, self-taught, self-confident, masochistic individuals need apply."² (p. 5)

There are only a handful of full-time, paid editors who are scientists. These work only for the most prestigious journals. Most full-time editors are not scientists. They function in an editorial staff capacity for scientist-editors. As managing editors and production editors, their work overlaps with that of scientist-editors. Despite the support they provide, the ultimate responsibility for the journal's scientific content rests with the scientist-editor.

Current Contents® (CC®) readers know how difficult it can sometimes be to get their own papers published. But few realize just how demanding and sensitive the editor's job is. Scientific and scholarly editors are among the "gatekeepers" of science. They carry an enormous responsibility, since their deci-

sions may alter or affect future careers. Although most journals have an editorial advisory board, and referees do assist editors in choosing manuscripts for publication, the final responsibility for deciding what gets published rests with the editor. Selecting manuscripts requires the editor to walk a fine line between screening out bad science and publishing innovative, even if unorthodox, work. Although one could mention dozens of similar cases, the example of the Krebs cycle is often cited, since Hans Krebs's paper was originally rejected by *Nature*.³ It was later published in *Enzymologia*.⁴ Almost every month, *CC* publishes a *Citation Classic* in which an author describes a similar experience.

Gatekeeping may be the editor's most important job, but it represents only a fraction of his or her responsibilities. Responsible editors must insure not only that each paper represents "good science," but that it is written in clear language. Editors must correct grammar, syntax, punctuation, and spelling, and clarify ambiguous or illogical writing. This is an exacting task, but need not be completely dull. In his "cookbook" on writing and publishing in science, ISI®'s Robert Day notes that some comic relief is provided by "morsels" such as, "Lying on top of the intestine, you will perhaps make out a small transparent thread."⁵ (p. 137) After the third or fourth awkward construction, however, most editors stop chuckling.

Editors are also responsible for establishing the style and format for their journals. For this they may rely on published style manuals. The *CBE Style Manual*⁶ and *The Chicago Manual of Style*⁷ are well-known examples. But there are a multiplicity of style guides available and, faced with too many choices, some editors decide to ignore established guidelines and create their own. This is not a trivial problem, and I have written often about the chaos this can cause for secondary information services.⁸ Even within a single discipline, journals use different styles. This can be hard on authors also, since they often have to revise their manuscript

each time they submit it to a different journal.

Voluntary national and international standards have been established for some aspects of style and format. In the US, national standards have been set by the American National Standards Institute, a nonprofit organization representing government agencies, trade associations, consumer groups, and industry.⁹ International standards have been set by the International Organization for Standardization (ISO),¹⁰ an association of governmental and independent standards-setting institutions from more than 80 countries. Unfortunately, such standards as exist are frequently ignored.

One problem that editors increasingly face is that of journal finances. Many editors are called upon to don the cap of a business manager or entrepreneur. They must make sure that the journal is priced to reach the journal's audience, and distributed in a timely fashion. The pressures of inflation and recession, and the decline in research funding, have also made it essential that journal editors know how to cut production costs and increase revenues. These economic pressures have changed the view that a high-quality scholarly work sells itself. Marketing is finally becoming respectable in science publishing.¹¹

As if all of these problems were not enough for editors to cope with, they must also somehow convince administrators to budget time for editing. According to Sue Burkhart, staff editor, *British Medical Journal*, many editors feel university and research center administrators do not recognize editing as "a valid part of science, with a legitimate claim on the time of the scientist, as important as the teaching or clinical work."¹²

As mentioned earlier, scientists are often "honored" with an editorship without benefit of training. Few opportunities for training exist. It's true that the *British Medical Journal*, in conjunction with EASE, offers a series of workshops for biomedical editors. And the Primary Communications Research Centre of the

University of Leicester, UK, offers a short course for new journal editors. Perhaps the most systematic attempt to train scientists to be editors was a program offered at Rockefeller University, New York, in the late 1960s and early 1970s.¹³ Nevertheless, such opportunities for training are all too rare.

These are the kinds of problems that have motivated editors to form their own professional associations. (See Table 1.) Editors' associations allow editors to share experiences. Through them, editors can develop better professional standards for their journals. Editors' associations keep editors in touch with one another through newsletters and annual meetings. They offer training workshops on such subjects as editorial style and journal finances. And they publish editors' guides and style manuals.

The founding of CBE in 1957 was by joint action of the National Science Foundation (NSF) and the American Institute of Biological Sciences. CBE now has over 500 members. It holds annual conferences, runs workshops for science editors and writers, and publishes *CBE Views*, a quarterly covering science publishing and CBE activities. Although CBE has formed committees on editorial policy and training, biologists are probably most indebted to its style committee for its well-known, comprehensive style manual.⁶

Impressed by CBE's success, and with CBE's advice and encouragement, NSF convinced the American Geological Institute to form a group for geology editors. In 1967, AESE was born. AESE now has over 300 members, and centers its activities around an annual meeting, and *Blueline*, a quarterly newsletter. Its style committee has published pamphlets on mathematical expression and geological nomenclature, and established a reference style for earth science journals.¹⁴

CBE's influence wasn't limited to the US, however. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) used CBE as a model in forming the European Life Sci-

ence Editors' Association (ELSE) in 1967, and the European Association of Earth Science Editors (Editerra) in 1968.^{1,15} These groups merged in 1982 to become EASE. EASE now has almost 400 members from 32 countries. Although most are in the biological or earth sciences, members from other disciplines are welcome.

Both ELSE and Editerra have sponsored workshops and seminars for editors, and have published writers' and editors' handbooks.¹⁶⁻¹⁸ *Earth and Life Science Editing*, the EASE newsletter, offers articles on scholarly publishing, and alerts members to upcoming courses and meetings. Each issue also contains an annotated bibliography of new publications on scientific publishing.

Editors of European Chemistry (EdEuChem), another European group, was formed in 1970. This group's current chairman is Erno Pungor, Institute for General and Analytical Chemistry, Budapest. EdEuChem's 14 or so member editors are currently addressing copyright problems and editorial standards for chemistry journals.

Basil Walby, Commonwealth Scientific and Industrial Research Organization (CSIRO) Editorial and Publications Service, has informed us of a new organization now forming to serve scientific editors in Australia. New Zealand editors may soon follow suit with their own organization.

Editors in countries lacking an editor's association might consider joining an international organization. One such organization is the Committee of Editors of Biochemical Journals (CEBJ) of the International Union of Biochemistry. CEBJ includes representatives from 11 major biochemical journals. One of its accomplishments is a compilation of nomenclature and style recommendations for biochemical journals.¹⁹

One particularly influential international association is the International Committee of Medical Journal Editors. This is not a formal, dues-paying organization, but a loose association of about ten editors-in-chief of biomedical journals who first met in Vancouver, Can-

Table 1: A selected list of scientific editors' associations.

Organization	Purpose	Contact Person
American Association of Dental Editors (AADE)	To improve communication within the dental profession and to elevate the standards of dental journalism among editors of publications of state dental associations, local societies, specialty groups, schools, and other dental organizations	Christine Nolen Taylor Executive Secretary, AADE 1021 West Bryn Mawr Chicago, IL 60660 Tel. (312) 878-0574 (312) 440-2601
Association of Earth Science Editors (AESE)	To foster education and promote interchange of ideas among editors, publications managers, and others responsible for editorial activities in earth science publishing	H.L. James Secretary-Treasurer, AESE Montana Bureau of Mines and Geology Butte, MT 59701 Tel. (406) 496-4166
Association of Editors in Science in Southeast Asia, Australia and Oceania (EDITEAST)	To improve science communication through better cooperation among editors of serial publications, to train scientific editors in the region to publish in English, and to upgrade the standard of scientific publishing in the region	Bakri Abbas Secretary, EDITEAST c/o UNESCO Regional Office for Science and Technology for Southeast Asia JLMH Thamin 14 Thomolpos 273/JKT Jakarta, Indonesia
Committee of Editors of Biochemical Journals (CEBJ)	To act as liaison between nomenclature committees of the International Union of Biochemistry (IUB) and biochemical journals and authors, as well as to develop policies on other issues of concern to editors	For North America: Herbert Tabor Secretary, CEBJ <i>Journal of Biological Chemistry</i> 9650 Rockville Pike Bethesda, MD 20814 Tel. (301) 530-7150 For other regions: Claude Liébecq Boulevard de la Constitution, 69/054 B-4020 Liège Belgium
Council of Biology Editors (CBE)	To improve communications in biology and related fields by promoting effective editing and production practices among editors of primary journals as well as others with an interest in publishing, promoting, distributing, and printing scientific publications or secondary services	Philip Altman Executive Secretary, CBE 9650 Rockville Pike Bethesda, MD 20814 Tel. (301) 530-7036
Editors of European Chemistry (EdEuChem)	To address issues of concern to editors-in-chief of chemistry journals, such as copyright problems and standardization of editorial requirements	Volkan Kisakürek General Secretary, EdEuChem 1700 Fribourg Tre de Fribourg 12 1723 Marly Switzerland
European Association of Science Editors (EASE)	To improve communication in all science disciplines by promoting cooperation among editors of serial publications and other individuals and organizations in science publishing, and by promoting efficiency in publishing operations	Nancy Morris Secretary-Treasurer, EASE P.O. Box 33, Farnham Surrey GU10 3JX UK

International Association of Anthropology Editors (IAAE)	To provide for professional consultation among anthropology journal editors	Cyril Belshaw President, IAAE c/o <i>Current Anthropology</i> 6303 NW Marine Drive University of British Columbia Campus Vancouver, BC Canada V6T 2V2 Tel. (604) 228-4997
International Committee of Medical Journal Editors	To decide among scholar-editors of general medical journals the technical requirements for manuscript submission to medical journals, as well as to consider other issues of concern to editors	For Central and North America: Edward J. Huth, MD <i>Annals of Internal Medicine</i> 4200 Pine Street Philadelphia, PA 19104 Tel. (215) 243-1200 For other regions: Stephen P. Lock, MD <i>British Medical Journal</i> British Medical Association Tavistock Square London WC1H 9JR UK
International Federation of Scientific Editors' Associations (IFSEA)	To function as an umbrella organization for editors' associations, organizations in related fields, and individuals interested in the communication and transfer of scientific information	Elizabeth M. Zopf Secretary, IFSEA BIOSIS 2100 Arch Street Philadelphia, PA 19103 Tel. (215) 587-4800
Optometric Editors Association (OEA)	To promote standards of excellence in optometric communications among editors or assistant editors of serial optometric publications	Harriet E. Long Executive Secretary, OEA Association of Schools and Colleges of Optometry 600 Maryland Avenue, SW Suite 410 Washington, DC 20024 Tel. (202) 484-9406

ada, in 1978. There they established guidelines for submitting manuscripts to medical journals.²⁰ More than 200 medical journals worldwide now subscribe to these guidelines, which have come to be known as the "Vancouver style."²¹

Anthropology editors are served by the International Association of Anthropology Editors (IAAE), which formed in 1977. The 50 members of this organization recently sponsored a symposium on scholarly serials publishing, held at the eleventh International Anthropology Congress. The symposium, cosponsored by IFSEA, was intended to allow anthropology editors to learn from the experience of editors in other fields. At the suggestion of Cyril Belshaw, president of the international congress, I performed a citation analysis of anthropology jour-

nals,²² and spoke on the role of editors in making the information in their journals more retrievable.

Rounding out this catalog of editors' associations are the American Association of Dental Editors (AADE), formed in 1931, and the Optometric Editors Association (OEA), formed in 1965. Although these organizations have a strong interest in dental and optometric journalism, they also address the problems of editors of scientific journals in these fields.

That editors first began to organize in North America and Europe is not surprising. After all, western journals clearly dominate international science publishing.²³ In the Third World, the Association of Editors in Science in Southeast Asia, Australia and Oceania (EDIT-

EAST) has been formed. Individual editors are now seeking to organize associations in Latin America, Africa, and India. Editors' associations in the Third World could play an important role in improving communication between Third World and Western scientists.

The scientists who formed all the organizations mentioned here and listed in Table 1 are to be lauded for their commitment to the professionalization of science editing. But scientific publication is an international, multidisciplinary enterprise. Editors deserve an equally international and multidisciplinary organization. In the 1970s, Miriam Balaban, editor of *Desalination* and lecturer at Boston University, Massachusetts, recognized this need. Balaban and other scientific editors convened the 1977 conference in Jerusalem mentioned earlier. Since that time, IFSEA has held two more "global" meetings, in Amsterdam in 1980, and in Philadelphia in 1983. The Philadelphia meeting was cosponsored by CBE and the Society for Scholarly Publishing, and benefited greatly from the organizational efforts of BioSciences Information Services. IFSEA's next such meeting is scheduled for 1986 in the Federal Republic of Germany. The 1989 meeting may be held in Alaska.

Under the leadership of Balaban, IFSEA's first president, IFSEA has steadily consolidated its position as an umbrella organization for editors' associations. One major focus of activity has been the promotion of workable journal standards. In conjunction with the Ciba Foundation and ELSE, IFSEA has published guidelines on reference style and the preparation of camera-ready copy.²⁴ IFSEA has also established a liaison with the ISO committee that sets publication standards. Furthermore, IFSEA serves as a contact for organizations seeking recommendations or advice from editors. For example, the Association of American Publishers recently contacted IFSEA regarding standards for electronic manuscript preparation.²⁵

Last fall, IFSEA members met at the Weizmann Institute, Rehovot, Israel, to set goals for the future.²⁶ At that meeting, attendees agreed that education for science editors and writers would be a major priority. In fact, IFSEA's new president, Eli Chernin, Harvard University, Cambridge, Massachusetts, has himself given science writing courses. IFSEA intends to prepare a directory of existing courses in science editing and writing. IFSEA will also encourage universities and colleges to include editing and writing courses in their science curricula. And the organization will seek funding from international agencies to help improve scientific publishing in the Third World. Discussions have already begun with such organizations as the International Development Research Centre, which has a keen interest in the training of Third World editors and writers. Moreover, IFSEA has set for itself the ambitious goal of establishing an international center for training science editors and writers.

IFSEA will also continue to work toward uniform journal standards. As an international organization for all editors' associations, IFSEA is the natural medium for fully involving editors in setting standards. The federation plans to review the style guidelines and formats of major scientific journals. After comparing these standards with those established by ISO, it hopes to make recommendations to ISO.

ISI has been an IFSEA member since IFSEA's inception. Although ISI supports all aspects of IFSEA's program, we are particularly interested in their work on editorial standards. As mentioned in other essays, poor contents page formats, ambiguous author addresses, and inconsistent reference styles make it difficult for secondary services to get information to subscribers in a timely manner.⁸ It is hoped that IFSEA can eventually broker a universal agreement on editorial standards that will eliminate these problems. With this in mind, the

subject of standards has been my main theme at several IFSEA-sponsored meetings.

At the Jerusalem conference, ISI offered suggestions for improving the retrievability of scientific information.²⁷ At the Amsterdam conference, we conducted a workshop on the editor's role in journal article dissemination and retrieval. During the Philadelphia conference, editors and other professionals in scholarly publishing visited ISI to see for themselves how a secondary information service operates, and, I hope, to better appreciate the interdependence of primary publications and secondary services.

IFSEA has many ambitious goals. To meet them, it will need the support of

editors and others in scientific publishing. The federation, therefore, offers full memberships to organizations of editors, and associate memberships to other groups in scientific publishing. These associate members include publishers' organizations, scientific societies, and secondary information services. CBE, EASE, AESE, IAAE, and EdEuChem are IFSEA's full members, while associate membership has been granted to organizations such as the American Institute of Physics; the International Group of Scientific, Technical & Medical Publishers; and ISI. A complete listing of associate members is presented in Table 2. Although IFSEA's mission is to serve as an umbrella organization for associations involved in scien-

Table 2: Associate corporate members of IFSEA.

American Institute of Physics H.W. Koch American Institute of Physics 335 East 45th Street New York, NY 10017	Institute for Scientific Information* R.A. Day Institute for Scientific Information 3501 Market Street Philadelphia, PA 19104
American Mathematical Society W.J. LeVeque American Mathematical Society P.O. Box 6248 Providence, RI 02940	STM: International Group of Scientific, Technical & Medical Publishers C.I. Pedersen Institute of Physics Techno House, Redcliffe Way Bristol BS1 6NX, UK
American Psychological Association A. Mahoney American Psychological Association 1200 17th Street, NW Washington, DC 20036	International Union of Geological Sciences Advisory Board for Publications D.F. Merriam Department of Geology Wichita State University Wichita, KS 67208
Center for Academic Publications, Japan M. Watanabé Center for Academic Publications, Japan 4-16 Yayoi 2-chome Bunkyo-ku, Tokyo 113, Japan	Nordic Publishing Board in Science K. Westerlund Nordic Publishing Board in Science Finlands Akademi Banmastargatan 12 00520 Helsingfors 52, Finland
Ciba Foundation M. O'Connor Ciba Foundation 41 Portland Place London W1N 4BN, UK	Primary Communications Research Centre A.J. Meadows Primary Communications Research Centre University of Leicester Leicester LE1 7RH, UK
Fachinformationszentrum Energie, Physik, Mathematik GmbH W. Rittberger (or E. Paul) Fachinformationszentrum Energie, Physik, Mathematik GmbH D-7514 Eggenstein-Leopoldshafen 2, FRG	Royal Society of Chemistry D. Williams Royal Society of Chemistry Burlington House London W1V 0BN, UK
Institute of Physics L. Cohen Institute of Physics 47 Belgrave Square London SW1X 8QX, UK	

tific editing, individual editors for whom no associations exist are also encouraged to join. Membership dues for individuals are nominal. Editors' associations and associate corporate membership fees are scaled to ability to pay.

With such a reasonable fee schedule, there's little reason why anyone involved in scientific publishing should not join this organization. If IFSEA can fulfill its goals, the international scientific com-

munity will benefit. And if IFSEA helps editors improve their journals, everyone with a stake in scientific publishing—readers, authors, publishers, librarians, and secondary information services—stands to benefit as well.

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