of tasks, edit a manuscript, our students now have to take 2 courses. The first, basic manuscript editing, helps them with the concepts. In 8 weeks, it covers 800 pages of The Chicago Manual of Style and barely touches on electronic issues. The second, editing online, teaches students how to take the theoretical decisions and apply them to editing a manuscript electronically. Both the editing and the computer skills are essential if our students really want to be prepared for the job market. And to quote Muenning, “They don’t have a choice. This is the way the world is going.”

That edit applies to us in instruction as much as it does to our students. We also don’t have a choice. Technology has ceased to be a secondary tool and has become part of the instructional process. In publishing, present methods are always subject to change, and the future begins with our next manuscript.

Executive Editor: A Scientist’s Odyssey

Lewis I Gidez

The 27-year odyssey of a scientist illustrates how training and experience in scientific research and an interest in scientific publishing led to a career first as a professional editor and then as the director of publications at the Federation of American Societies of Experimental Biology.

Many editors-in-chief rely on “professional editors”—a term used by my predecessor at the Journal of Lipid Research (JLR), F Peter Woodford—to execute the myriad, and often mundane, tasks associated with publishing scientific research, which completes the creative act that begins in the laboratory of the author. Just who are these professional editors? In a 1970 article titled “Training Professional Editors for Scientific Journals” (1), Woodford described the editors-in-chief at most scientific journals as transient holders of editorial power, prestige, and responsibility who were usually amateurs in the process of publishing a scientific journal. To let these editors focus on the journal’s scientific content, Woodford proposed the position of a professional editor, one with a scientific-research background but who had also been trained “in the editing and management of scientific periodicals”.

Many of the responsibilities of Woodford’s professional editor are carried out today by those known as executive editors, managing editors, or editorial assistants. In contrast to Woodford’s description, most such editors do not have scientific training or research experience. Nevertheless, as scientists today consider various career shifts and options, the role of professional editor may intrigue those with an interest in the communication of science. To provide some insight into such a career, this article describes the evolution of my career from research scientist-teacher to executive editor of a scientific journal to director of publications for the Federation of American Societies of Experimental Biology (FASEB), an odyssey of 27 years and continuing.

My editorial career began at JLR in 1969. By way of background, JLR was started in 1959, in part a result of the rapid methodologic advances in lipid biochemistry in the late 1950s. It was one of the first journals devoted to a specific area of biochemistry. The journal is owned by a not-for-profit corporation, Lipid Research, Inc., which is governed by a board of directors of scientists. It was and is, one of very few journals without organizational (society) or commercial sponsorship.

The role of an executive editor at JLR was conceived by Edward (Pete) H Ahrens, who was the editor-in-chief from January 1964 to July 1969. His concept was an executive editor who would allow the Editor to concentrate on the most important aspect of his editorship: the evaluation of papers for publication. The Executive Editor assumed the responsibility for editorial processing, including implementation of editorial policy and subject editing, and publication management, including financial management, liaison with the publisher and the printer, and other activities related to journal management and production.

In contrast to the practice of some journals today, the JLR executive editor did not and does not change in person or in location with each change in editor-in-chief. Rather, the JLR executive editor remains the same to allow a relatively seamless (and inexpensive) transition from 1 editor-in-chief to the next each 3-, 4-, or 5-year period. This has worked very well for JLR. The executive editor’s office provides funding, logistic support, and advice and training and is the focal point for journal activities. This model has allowed editors-in-chief since 1970 to devote their time almost exclusively to the review process.

LEWIS I. GIDEZ is Director, FASEB Office of Publications, Bethesda, Maryland, and is Executive Editor, Journal of Lipid Research and The FASEB Journal. He has been a member of CBE since 1969 and served many years as CBE Treasurer.
and the selection of high-quality scientific articles for publication without having to be involved, other than for quarterly expense reports, with the day-to-day publication routines. This is not a unique model in today's publication world, but it was unique in 1969.

The first executive editor for JLR was F. Peter Woodford, an ideal choice for this position. He had a PhD in chemistry, had experience in lipid research, and had been involved in scientific editing as executive editor of the Journal of Atherosclerosis Research (now Atherosclerosis) in the early 1960s. While he was executive editor of JLR, Woodford drew on his experience and, with the cooperation of many colleagues, designed and began teaching an 8-month course to train professional editors for scientific journals. Parts of the curriculum of the Editor Training Program, described in Woodford's 1970 article (1), could very well form a job description for an executive editor, managing editor, or assistant editor. A unique aspect of the program was, however, that participants in the program had to have a PhD or MD degree, have at least 3 years of research experience, and have published scientific articles. This scientific training and experience, in Woodford's view, allowed the professional editor to offer procedural or policy advice from a vantage point of familiarity with the scientific process and the peer-review system and to work with the authors of highly technical manuscripts as a colleague. This ability to a large degree can, of course, be acquired through years of experience by those without formal scientific training and experience, but the requirement of training and experience made Woodford's program unique.

In the summer of 1969, Woodford resigned his journal position to devote more time to his course. The new editor-in-chief designate of JLR, a researcher at the New York State Psychiatric Institute in New York City, agreed to take on the role of editor-in-chief if I were appointed as the new executive editor. In the fall of 1969, 2 lipid biochemists with no professional editorial experience took on the 2 top editorial positions of a major research journal, in addition to continuing their research and teaching. Although Woodford's course was being taught, there was no time for me to take it before becoming the executive editor. The position needed to be filled right away, and my research and teaching responsibilities continued. My training as a professional editor started with a short crash course with outgoing Executive Editor Woodford, consisting of several 1- or 2-hour sessions over a period of a few months and covering the routine for manuscript management, general office procedures, the review system, essentials of scientific editing (with emphasis on comprehensibility), indexing, financial management, and double-entry bookkeeping. Although I did attend 1 formal class session of the course, this jump-start was a far cry from his 8-month curriculum.

Executive Editor Activities
My activities during my first 10 years as JLR executive editor can be divided into 4 main categories: editorial activities, manuscript management, financial management, and publication management.

Editorial Activities
A primary role of the executive editor was to edit accepted manuscripts and work with the author to improve comprehensibility. This was done before the manuscript was sent to the copyeditor, and it enabled the author to respond appropriately at an early stage in the publication process. This level of editing was the raison d'être for a professional editor with a scientific background. It followed Woodford's recommendations (1): 'The editor-in-chief could help the author to revise his manuscript and correct any or all of the faults of presentation...but with the pressure of his other commitments and the increasing volume of publication he simply does not have the time. An assistant editor who is expected to devote a large proportion of his time to the task can aid both the author and eventual reader enormously. It is important that he have the scientific knowledge which enables him both to understand what he is editing and to communicate with the author on the same level of competence.' Although having an executive editor with a scientific background is by no means a sine qua non for a successful journal, this combination has worked well for JLR. Scientific training, general knowledge of the broad subject area of the journal, and specific knowledge of some subdisciplines have provided an important degree of quality control.

Another editorial activity the executive editor was responsible for was the construction of an annual index. The journal had a tradition of a detailed index, with many more citations than title or supplementary keywords. In the early years, entries were recorded on index cards as each article was edited. (Beginning in 1982, the index items were entered directly into a computer database as each issue was published.)

Manuscript Management
While the editorial office was in New York City, first with Woodford at Rockefeller University and then with me at Rockefeller for a short time and then at the Albert Einstein College of Medicine, another major activity was manuscript management. During this (precomputer) period, manuscript activity was tracked by recording all pertinent facts, figures, names, and dates for each paper on large tables in an accounting ledger, and addresses and phone numbers were kept in card files. Keeping track of this information eventually warranted the employment of a full-time editorial assistant, who also handled routine office tasks.

All manuscripts were submitted to the executive editor who, in conjunction with the editor-in-chief, assigned them to an associate editor and an editorial-board member according to their areas of expertise. The editorial-board member had the responsibility of reviewing the paper and/or selecting outside referees. All reviews were returned to the associate editors, who met once or twice a month with the editor-in-chief and the executive editor to evaluate the manuscripts.
At that time, all the associate editors were in New York City, and the meetings were much like those of a study section. The editor-in-chief drafted the decision letters, and all the editor-in-chief’s correspondence came from the executive editor’s office. Author revisions were sent to the executive editor, who then distributed them to the associate editors before editorial meetings. It was a long review procedure, but very thorough.

When the editorial moved to San Francisco for a 3-year period and then moved back to New York, essentially the same procedures were followed except that the editors-in-chief had their own part-time editorial assistants and handled much of the correspondence from their own offices. As executive editor, I attended all the editorial meetings in New York and occasionally the meetings in San Francisco.

Financial Management
Another task of the executive editor was day-to-day financial management. The journal maintained a checking and savings account, and deposits were made and checks written weekly. All bills, salaries, taxes, and so forth were paid from the editorial office. I became proficient in double-entry bookkeeping and cost-accounting. Each year I prepared for the external audit, and I was responsible for preparing financial statements and summaries for the board of directors of Lipid Research Inc., the owner of the journal.

Publication Management
Although the term was not used in those days, JLR was really self-published with a professional (nonprofit) publisher acting as publication manager. The executive editor decided on the size and content of each issue on the basis of the number of accepted articles received by a given date. In 1969, the journal was a bimonthly publication. Through 1970, Rockefeller University Press managed the publication process, including the redaction, subscription fulfillment, and interaction with the composition and printing vendors. In 1970, the journal, about to move from Rockefeller University Press and lacking a substantial reserve fund, sought outside sponsorship from both commercial and noncommercial sources with the hope of finding a sponsor that would assume financial responsibility for the journal. Those efforts were unsuccessful, and the journal’s board of directors decided to continue publishing without outside financial backing.

In 1971, publication management was shifted to FASEB, whose responsibilities were similar to those of Rockefeller University Press. Composition and printing vendors were selected by FASEB with the approval of the executive editor. In time, more of the financial and business aspects of the journal operation were shifted from the editorial office to FASEB; the journal paid a fee to FASEB for reductory and business services. The day-to-day aspects of publication management were handled at FASEB, with the executive editor ensuring coordination with the editorial activities and reviewing decisions for compliance with the journal’s policies. The journal’s overhead costs were minimal because office space was provided by the parent medical schools of the editor-in-chief and the executive editor. By the late 1970s, the journal was on a sound financial basis, and the idea of finding a publication sponsor was abandoned.

Changes in Manuscript-Management Activities
In 1980, when the editorial office moved to Boston, the publisher changed to put all the management of manuscripts in the editor-in-chief’s office. Journal correspondence with the authors, reviewers, and editorial board was handled by the editor-in-chief’s editorial assistant. Without the responsibility for manuscript management, there was no longer the need for a full-time editorial assistant for the executive editor. The position was reduced to about 20 hours a week and finally eliminated in 1982.

The editorial quality control of accepted articles and responsibilities for financial and publication management remained with the executive editor. In fact, the editorial activity, long the paramount activity of the JLR executive editor, expanded during the early 1980s. The number of submitted and accepted articles increased, and the number of issues increased from 8 in 1980 and 1981 to 9 in 1982 and 12 in 1983.

Also during this time, computerization of various aspects of journal management was becoming available and became an added responsibility of the executive editor. The hand-recorded manuscript-management tables of monthly submissions, noted earlier, were replaced by computer files (word processing at first and then databases) in the editor-in-chief’s office. The executive editor also ensured that each new editor-in-chief had a compatible and efficient computerized manuscript-tracking system.

Computerized manuscript management reached a zenith in 1993-94 with the introduction of a tracking program, written in Microsoft Access code, developed expressly for JLR. The program database, which contained tracking information for nearly 150 papers when the editor-in-chief position moved from Dallas to Iowa City in 1995, was easily integrated into the office routine of the newly appointed editor-in-chief. By modification of fields, the program also can be used for tracking all the production steps for each article or issue from rejection to mailing. Over the years, information from those databases has been summarized for each publication year and maintained on spreadsheets in the executive editor’s office. The data, which include a wide range of publication and subscription information, have aided and simplified manuscript-tracking and other procedures in the publication of JLR.

Editorial and Publication Management
From the start of my work with the journal in the fall of 1969 through July 1986, I held an academic position; about two-thirds of my time was devoted to research and teaching activities, and the remainder to journal responsibilities. In August 1986, I left academia after being appointed director of publications at FASEB. Concomitantly, the
executive-editor function of JLR moved with me to FASEB; this presented an interesting situation.

Since 1971, FASEB had acted as publication manager of the journal, although publication policies were always approved by the executive editor and the JLR board of directors. My day-to-day activities for JLR had been primarily editorial. Now, in 1986, the same person who was the executive editor of JLR was also the de facto publisher of JLR. In addition to editing accepted manuscripts as before, I now became involved in all types of publishing activities, such as obtaining estimates from and selection of printing and composition vendors, analysis of printing and composition invoices, selection of paper stocks, selection of a vendor for foreign distribution, sale of advertising, marketing, establishment of print-runs, budgeting, and revenue-enhancement and cost-containment measures. What had started as a part-time career as a professional editor had now become a full-time career in scientific publishing that continued to include being a professional editor for JLR.

My new position at FASEB also involved the management of other publications, including Federation Proceedings. In this journal, founded in 1942 as the official publication of FASEB, the proceedings of symposia presented at FASEB meetings were published. The editorial aspects of Federation Proceedings were handled by the executive editor for that journal (who from the middle 1960s until 1985 was Karl F Heumann, longtime member and past-president of CBE). In July 1987, FASEB started a new journal, The FASEB Journal, which became the successor to Federation Proceedings. In 1988, I became the executive editor of The FASEB Journal; the assistant executive editor oversees the redactory work and is responsible for production details. My editorial role is as a consultant and arbiter on both editorial and occasionally scientific points that need resolution or clarification. The editor-in-chief is responsible for the peer-review process and manuscript management.

In 1992, FASEB assumed publication-management responsibilities for the Journal of Leukocyte Biology on a fee-for-service basis under a contract with the Society for Leukocyte Biology. The FASEB Office of Publications personnel have no formal affiliation with this journal. A senior editor (who is also the assistant executive editor of The FASEB Journal) oversees the redactory work and is responsible for production details. My publication functions for this journal are similar to those for JLR and The FASEB Journal. My editorial function for this journal is like that for The FASEB Journal, as consultant and arbiter.

In recent months, a major new pursuit in our editorial office and a shared responsibility of the executive editor-director of publications has been establishing the presence of the journals on the World Wide Web (WWW). Both the JLR and The FASEB Journal present tables of contents, searchable abstracts, and other journal information on the WWW, although neither journal offers full text.

FASEB has its own Web server, and the Office of Publications works closely with the composition vendors (who supply title-page information and article abstracts in ASCII form) and with the staff in the Printing and Graphics Division and the Office of Communications and Information Systems for the WWW presentations. Currently, the FASEB Office of Publications publishes an annual directory of members of FASEB societies that contains nearly 44,000 entries. The entries also are on the WWW. There are plans for members who have e-mail capabilities (now about 55% of all members) to be able to update their entries online.

There are extensive files of databases and spreadsheets of publication management and editorial activities that we have kept, especially for JLR, some from as far back as the early 1980s. Recent data are retrieved for current needs, for example, the name and address of a reviewer, the number of offprints that an author ordered, the composition expense for a given issue, or where the printing budget stands. However, the power of database and spreadsheet programs is exploited when they are used in a methodical approach to solve problems. These programs and the collected data allow the design of experiments asking "what-if" and seeking correlations, all to help to explain journal "phenomena" in much the same way that a bench scientist would ask questions about a biologic system and design appropriate experiments. Because other professional editors and publication directors also may be interested in using these tools to study journal phenomena, some examples of our analyses are given below.

- Our data show that, over the last 5 years, the monthly composition author-alteration charges for JLR have been 5% to 11% of total composition costs, compared with 9% to 20% for the other 2 journals. We also have seen the positive effect of online copyediting on author alterations (decreased expense) in The FASEB Journal and the Journal of Leukocyte Biology, the 2 journals for which submission of accepted articles on disk is mandatory. Of course, many factors enter into the magnitude of author-alteration charges, and it would be an oversimplification to attribute the relatively low alteration charges for JLR to any set of circumstances. But the basic data for this analysis were easily retrieved and allow us to ask further questions to evaluate the role of any number of editorial and publication characteristics—such as the type of editing provided by the executive editor, the long tenure (17 years) of JLR's copreeditor, and the "culture" of the journal with its emphasis on editorial quality control—on a journal's fortunes and progress.

- In budget planning, we asked how much money would be saved by decreasing the number of color prints in The FASEB Journal. That is an important question because the journal does not charge invited-review authors for color, although it now stipulates that color should be used only when it enhances communication of the science. An answer to the question required the printer to provide new invoices for several issues in which unwar-
ranted color was "eliminated". Superimposed on that question was another: What would be the effect on printing and distribution costs if the issues with fewer color prints were printed on heavier paper? By extrapolating data from 4 or 5 sample invoices provided by the printer, we were able to determine the financial implication of these changes. The answer: If color were used more judiciously, more than enough would be saved to pay for the added expense of higher-quality (and heavier) paper and the concomitant increased cost of mailing.

- Authors are concerned not only with a rapid 1st decision about their manuscripts but with publication as rapidly as possible. What quantitative measures are there for comparing on a year-to-year basis the total publication time? One approach used by JLR is to calculate the percentage of total papers published in a given year that were received in the same year. The percentage reached a peak in 1991, fell for the next 3 years, and increased in 1995 and 1996 as changes in procedures took effect. For 1996, 44% of the articles published were received in 1996.

Because the data go back to 1986, answers to questions like those are easily retrieved with very simple programming and allow evaluation of changes over the years in light of changes in journal policy or procedure.

My odyssey started in September 1969 and is still under way in 1997. For nearly 17 years, I followed 2 professional roads: that of a research investigator and that of a professional editor, an executive editor. There is no question in my mind that a scientific background has been an essential element for the kind of editorial function I have provided. Interestingly, I am still on a dual track—this time, however, as an editor and a publisher. As an investigator, I always had a great sense of fulfillment in seeing my work published, whether I was a junior or senior author. I still feel that sense of achievement as each issue of a journal appears, partly because the act of publishing is an end in itself (the we-got-through-that-one-this-month feeling) and partly because the publication process is the final step in the creativity of scholarly investigation.

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