

History and Founding Editor's Perspectives of *Cytometry*

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Cytometry, the journal of the International Society for Analytical Cytology (ISAC), had its genesis, like the ISAC, in the series of conferences on automatic cytology sponsored by the Engineering Foundation in the 1970s. The history of ISAC has been well documented by Phillip Dean in a previous article and in one appearing in this issue (1,2). My personal perspectives on *Cytometry* complement the histories of ISAC and the editorial I wrote in 1997 when I stepped down as editor (3).

Automatic cytology started to evolve in the late 1960s as an interdisciplinary science exploiting advances in electronic, computer, and chemical technologies to enable rapid and quantitative analysis of large numbers of individual cells. Frequently, early research was driven by potential applications to problems in cancer diagnosis (the Pap smear), chromosome analysis (cytogenetics), and blood cell analysis (hematology) and to a wide range of problems in basic biology. This early work was reported at various national and international conferences, particularly those sponsored by the New York Academy of Sciences and the International Academy of Cytology.

The series of Engineering Foundation Conferences (EFC) on automatic cytology first provided a coherent and ongoing forum where scientists and engineers from diverse disciplines could meet to exchange ideas. These conferences were initially small and by invitation only. They were organized according to the strict dictates of Dr. Sanford (Sandy) S. Cole, director of the EFC. Afternoons were always unscheduled to leave much time for informal interactions among the participants; likewise, presentations at the formal sessions had to allow ample time for discussion and interaction between the presenter and the audience. Open and free explorations of ideas were encouraged; for this reason, no record was made from the early conferences. But by the Third Automatic Cytology Conference, held at the Asilomar Conference Center, California, in December 1973, participants felt that they were generating so much energy and excitement that they wished to reach a wider audience, particularly their colleagues who were unable to attend the conference.

Paul J. Anderson, editor of the *Journal of Histochemistry and Cytochemistry*, invited me to be guest editor for a special edition devoted entirely to papers from the Third Conference (4). Most presenters submitted manuscripts that underwent peer review. The special issue contained

39 papers, many of which remain relevant today. Authors included many luminaries of the ISAC and the field: Sam Latt, Leon Wheelless, Mike Melamed, Frank Traganos, Lew Kamensky, Mort Mendelsohn, Walter Sandritter, Mack Fulwyler, Harry Crissman, Tom and Donna Jovin, Joe Gray, Peter Bartels, George Weid, and Bas Ploem. This issue also was used to introduce the Technicon Hemalog D system, thereby setting a precedent in which our publications are used to introduce commercial systems and the innovative science and engineering that they embrace.

Papers from the next three Automatic Cytology Conferences were published similarly in the *Journal of Histochemistry and Cytochemistry*, with the support of Paul Anderson and with financial support from the Engineering Foundation; Bart Gledhill joined me as guest editor for these special issues in which all manuscripts underwent peer review (5–7). Each issue was larger than its predecessors and each seemed to have an increasing scientific impact. The last issue in this series (7) contained 104 articles from presentations at the first international conference held at Schloss Elmau in the Bavarian Alps in 1978. It was at this conference that steps were formalized to create our own society, the Society for Analytical Cytology (SAC), and our own journal, *Cytometry*. I was appointed the society's editor and was charged with creating a journal and negotiating for a publisher.

It was easy to develop the aim and scope of *Cytometry*, as these mirrored those of the society as defined in the (I)SAC statement of purpose (1). From the outset, *Cytometry* was designed to reflect the SAC and especially to provide a peer-reviewed record of presentations from the SAC conferences so that they could reach a much wider audience than just the conference attendees.

The editorial board was selected for their scientific excellence and relevance, even though they were not necessarily members of the society. The aim was always to bring disciplinary and geographic diversity to the board and a commitment to the journal.

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Published online in Wiley InterScience (www.interscience.wiley.com).
DOI: 10.1002/cyto.a.10098

I started receiving manuscripts in late 1979, before the Automated Cytology VII conference. The first manuscript was rejected. In July 1980, the first issue of *Cytometry* was published. It had 14 articles, 11 of which were based on presentations at the conference. Sam Latt was the lead author of the first article.

The SAC had entered into a profit-sharing contract with Williams & Wilkins to publish *Cytometry*. They had been the publishers for the *Journal of Histochemistry and Cytochemistry* and thus had familiarity with the special issues and saw the potential for *Cytometry*. However, they soon became disenchanted with *Cytometry* when we failed to meet their subscription expectations. *Foot and Ankle*, launched at the same time, had already achieved a subscription base of more than 10,000—why weren't all pathologists subscribing to *Cytometry*? They terminated the contract after 3 years.

We were fortunate in quickly finding a much more suitable publisher. Alan R. Liss specialized in smaller journals, and Alan, as a former physicist, was especially enthusiastic about *Cytometry*. He became our publisher in 1983 with volume 4. Under Alan's guidance, *Cytometry* prospered. He was never concerned with mundane issues like editorial page allowances. His philosophy was to publish all that was scientifically meritorious and to work out monetary details later. This philosophy enabled *Cytometry* to publish special issues, even while greatly exceeding the nominal page allowance.

Four special issues of *Cytometry* were published (8–11). Each became a landmark publication in its own right. Collectively, they greatly enhanced the impact of *Cytometry* and the significance of ISAC meetings as the place to first report on major advances in techniques and applications. Likewise, special sections allowed contributions to be focused on a single topic, often based on a session at an ISAC congress (12–15).

Cytometry grew not only in the number of papers published but also in its scientific reputation to become one of the most frequently cited journals in its area. Scientific credibility also brought subscribers, with more than 700 library and institutional subscriptions. Concurrently, there was rapid growth in the number of ISAC members, all of whom received a subscription to *Cytometry* as part of their society dues (1).

In 1990, Alan R. Liss was acquired by John Wiley & Sons and became a separate division, Wiley-Liss. Working with the new publishers, ISAC entered into a 15-year publishing contract that provided for the continued growth of *Cytometry*. Publication went from six to eight issues per year and then in 1994 to monthly publication.

The new contract provided for a strong royalty stream to ISAC but also provided a realistic level of support for the operation of the editorial office. This allowed important changes in its editorial management. To begin with, the editorial office had received virtually no support from the publisher; the editor had to rely on strong institutional support. The new contract provided sufficient funding for the editorial office to be largely self-sufficient, so that it became possible for ISAC to select the best qualified

candidate for the position of editor without depending on institutional largesse.

As analytical cytology matured as a discipline, its applications, particularly to clinical medicine, became increasingly apparent. In 1982, the SAC and the Engineering Foundation organized the first meeting on Cytometry in the Clinical Laboratory, at Santa Barbara, California. This meeting was reported, partly "a cappella," by Howard Shapiro (16). A second EFC on Clinical Cytometry was held at Sea Island, Georgia, in 1983. Subsequently, Mariano LaVia and John Parker organized the Charleston, South Carolina, series of conferences on clinical cytometry. These conferences lead to the formation of the Clinical Cytometry Society (CCS) and to the creation in 1994 of a new section journal, *Cytometry: Communications in Clinical Cytometry*, appearing as *Cytometry* volume 18, number 1. This is an independent section of *Cytometry*, published jointly by ISAC and CCS. LaVia and Parker were the initial editors and were succeeded in 1998 by Chuck Goolsby.

In 1997, I retired as editor of *Cytometry* and was succeeded by Jan Visser. It is a tribute to Jan that the transition went smoothly and that *Cytometry* continued to expand in scope. In 1999, the journal *Bioimaging* was merged into *Cytometry*. A special issue was devoted to a series of important papers on molecular imaging that had been submitted to *Bioimaging* before the merger (17).

In 2002, Jan was succeeded by our present editor, Charles L. Goolsby. He now has responsibilities as editor for *Cytometry*, *Bioimaging*, and *Communications in Clinical Cytometry*.

The editor of *Cytometry* has much in common with editors of other peer-reviewed scientific journals, large or small. It is a position of much responsibility and much power. The decision to accept or reject a manuscript rests ultimately with the editor; over time, it is these decisions that define the journal.

As editor, I took these responsibilities seriously. About two-thirds of all manuscripts submitted to *Cytometry* were initially rejected. One of the joys of editors is being able to work with researchers to turn unacceptable manuscripts into worthy scientific contributions. I was able to work with investigators to rescue more than half of the rejected manuscripts and got great satisfaction mentoring investigators as they made essential changes to meet our scientific standards.

Previously, I reminisced on some of the statistics of *Cytometry* (3). I suspect not much has changed. Manuscripts had been received from more than 60 different countries. The most frequently cited paper was that of Vindeløv, Christensen, and Nissen on their technique for preparation of nuclei for flow cytometry (18). This statistic emphasizes the important role *Cytometry* has in disseminating new techniques. The most published researcher was Joe Gray, reflecting the large number of major contributions he has made to our field. Howard Shapiro remains the sole investigator to use verse in his contributions (16,19); I did not realize how, at the time, I was encouraging our master of rhyme.

When *Cytometry* and ISAC were founded, the naysayers said that both were based on a narrow technology and doubted that they would survive a decade. How wrong they were. Together, *Cytometry* and ISAC continue to thrive, building on the old and exploring the boundaries of the new. I predict that both will be vital forces for scientific and technologic advancement a quarter century from now, and that *Cytometry* and ISAC will continue to expand their scope and impact based on the energy, enthusiasm, and scientific commitment of their present members and leaders.

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