

interviews were deposited in the Center for the History of Chemistry in Philadelphia.

A joint session (open meeting) with the ACS Society Committee on Chemical Abstracts Service at the 205th ACS National Meeting in Denver in March 1993 was the last one for the Committee as it was then constituted. The ACS Council at its March 31, 1993, meeting dissolved the Committee and established in its place a Joint Board-Council Committee on Chemical Abstracts Service. Since the governance function with respect to CAS was taken over by the CAS Governing Board established in 1991, the new Committee is to act in an advisory and information exchange role between CAS, the Governing Board, and the ACS membership. Lura J. Powell, the Committee Chairman, established a subgroup (Jean G. Marcali, chairman) specifically charged with improving interactions between the Division of Chemical Information, the Division of Computers in Chemistry, and other Divisions, and the Committee.

As this history was going to press, the Division learned that Karl F. Heumann passed away on April 8, 1993. He was the 1960 Divisional Chairman and served the Division in numerous other assignments. He was also the first R&D Director at Chemical Abstracts Service (1955-1959) and the 1959 President of the American Documentation Institute (ADI).

### 3. Symposia and Sessions at the ACS National Meetings, 1975-1993

#### General Characteristics

A detailed list of symposia and general sessions at the ACS National Meetings for the 1975-1993 period is presented in **Appendix 6** (page 97). The information given includes the number of papers in each symposium or session, the name of the presiding chairman, and the name of the cosponsoring ACS Division or ACS Committee, if applicable.

The Division took part in all of the 36 numbered ACS National Meetings in that period, 170th through 205th, including the ACS/CSJ (Chemical Society of Japan) Chemical Congress in Honolulu in April 1979.

The total number of papers presented in the 1975-1993 period was 1,739. As in the previous years, certain perennial topics were presented and debated frequently:

- education
- nomenclature
- Chemical Abstracts (CA)
- patents
- copyright

Training was no longer confined to courses or instruction in literature searching, but now was extended to searching online. Various groups were involved such as database producers, online vendors, search intermediaries, and end users.

With the advent of the ability to search and retrieve information through structure and substructure searching, different nomenclature needs were discussed. On the one hand, the presence of systematic name fragments facilitated searches for substances containing these fragments. On the other hand, common and trivial names led directly to the retrieval of information through chemical dictionaries online.

The operation of Chemical Abstracts Service (CAS) and its publications and services continued to be the subject of both formal and informal papers, and of occasionally heated discussions ranging in scope from technical content to online searching to pricing.

Patent- and copyright-related problems continued to be of vital interest to the Division members. Patents and published patent applications continued to proliferate, patent offices became automated and incorporated many database building and searching techniques. Copyright Law interpretation became a primary concern to librarians, organizations, and individuals alike.

A group of chemists specializing in legal practice and of those involved with legal aspects of the intellectual property protection was formed as the Subdivision of Chemistry and the Law. Between 1980 and 1982, it was responsible for a large part of the Divisional program. With the formation of the ACS Division of Chemistry and the Law in 1983, the more legal aspects of patents, trademarks, and copyright, as well as discussions on laws in the workplace, environmental laws, and other government laws and regulations of concern to chemists, and on para-legal careers became their domain. Because of the many topics of interest to both Divisions, numerous symposia were joint or cosponsored.

It is again of interest to review trends in programming by listing the most popular topics in each succeeding decade.

In the 1970's the topics discussed were:

- computer-assisted organic syntheses
- pattern recognition
- quantitative structure-activity relationships
- chemical reaction searching
- online databases, systems, and searching
- numerical databases
- environmental laws and information systems
- international activities and transborder data flow
- document access

The ability to search for and retrieve information online had the greatest impact on all aspects of information handling and that was reflected in many papers. Early systems were fairly complicated so that trained information intermediaries normally operated them. Gradually, the systems became more friendly, and more and more papers described their use and acceptance by the end users.

The 1970's saw the emergence of online vendors, Lockheed's DIALOG, System Development Corporation's (SDC) ORBIT, BRS, and National Library of Medicine (NLM). These organizations as well as the users of their systems contributed many papers. The government systems such as MEDLINE, TOXLINE, and NIH/EPA Chemical Information System were described in detail.

Environmental laws, notably the Toxic Substances Control Act (TSCA), had a tremendous impact on reporting, compiling, and retrieving information on toxic and potentially toxic substances. A comprehensive computer-based information system, established to support the decision-making responsibilities of the EPA, was the subject of papers and discussions.

As the databases proliferated, cooperation, networking, and resource sharing, national and international, became necessary and essential. The Division became a forum for reports from such organizations as UNISIST, INIS (International Nuclear Information System), IUPAC (International Union of Pure and Applied Chemistry), ICSU (International Council of Scientific Unions), and their Committees such as AB (Abstracting Board) and CODATA (Committee on Data for Science and Technology).

Access to full documents, or rather regulations governing their distribution, copying, and lending, were discussed. In spite of the proliferation of information services and their sophistication, these services provided pointers only to the specific data needed. Very few numerical databases were then in existence. The chemists still needed to consult the original documents, and often wanted to keep copies

in personal files.

In the context of all these developments, it should be mentioned that in 1974 a new ACS Division of Computers in Chemistry was created to recognize the large and growing importance of computer science to chemistry in analysis, education, marketing, organic syntheses, and theoretical calculations from an atomic and molecular perspective.

In the 1980's, information on a plethora of newly developed fields, techniques, experiences, and uses was shared in papers, posters, and demonstrations. They were concerned with:

- artificial intelligence research and applications
- natural language processing
- full text capture and searching
- graphic manipulation of structures
- biotechnology information
- personal computers and minicomputers
- optical disks
- office automation and workstations
- electronic publishing and delivery
- new technology for information centers
- end user searching
- information careers for chemists

The availability of personal computers had the greatest effect on information retrieval. A common part of the laboratory and office, they shortened immeasurably the cycle of the generation, storage, transfer, and use of chemical information. Computers are now an integral part of laboratory instruments and data collected are being transferred to personal computers for further processing as well as for combining with graphics and text. Resultant manuscripts may be sent electronically to other researchers or to journals for publication. Telecommunications link the personal computer with remote databases, to search them and to retrieve the information for research.

The meetings that we have had in the 1990's so far featured further refinement in topics discussed in the 1980's such as:

- hypermedia in chemical information
- Markush structure databases and searching
- 3-D chemical databases and 3-D substructure searching
- similarity searching
- intellectual property protection

## Highlights at Selected Meetings

At the 170th ACS National Meeting in Chicago in August 1975, the first meeting at which the Divisional program appeared under its new name, papers were presented on a wide variety of topics ranging from the application of Wiswesser Line Notation (WLN) in substructure searching to chemical information networking to the impact of environmental laws on information requirements. The latter heralded the beginning of symposia related to environmental concerns for years to come. Most of these described the activities of the Environmental Protection Agency (EPA).

At the 171st ACS National Meeting, the Society's Centennial Meeting, in New York in April 1976, the first Herman Skolnik Award Symposium was presented. Included were papers that reviewed milestones in chemical information and progress reached thus far [Ref. 20]. Some also speculated on the potential future trends for chemical primary journals, chemical nomenclature, indexing and classification systems, notation and topological systems, and information industry. Herman Skolnik was not only the first recipient of the Divisional Award named in his honor, but he was also a member of the ACS Centennial Coordinating Committee and the chairman of the Committee on ACS Centennial History.

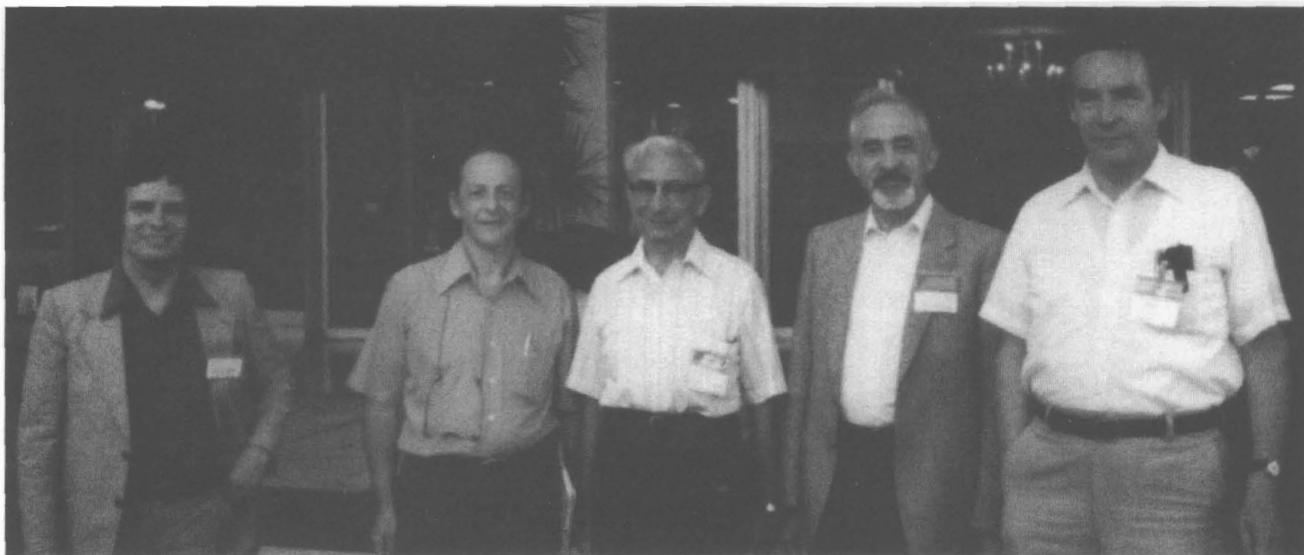
At that meeting, the Division started sponsoring a long series of vendor's workshops and seminars with two workshops on "Using CA Volumes Indexes" and "Using CA Condensates." This series continued for ten years till the 192nd ACS National Meeting in Anaheim in September 1986.

The 172nd ACS National Meeting in San Francisco in August/September 1976, the Society's West Coast Centennial Meeting, was made memorable by two general addresses: a) "From Then to Now" by the 1976 ACS President and 1951 Nobel Prize laureate, Glenn T. Seaborg, and b) "Chemistry - Key to Our Progress" by 94-year old former ACS President, Joel H. Hildebrand. At the Divisional luncheon Carlos M. Bowman expressed an opinion that there was too much talking to one another at the Divisional meetings and not enough contact and communication with bench chemists who needed facts and data [Ref. 21]. He also felt that too many papers had dealt with the methodology "how to do things", rather than with the guidance on how new developments could be useful to others.

At both 1977 ACS National Meetings, the 173rd in New Orleans in March and the 174th in Chicago in August, patent literature was discussed at great length, especially how it had changed and how it should be handled.

The 175th ACS National Meeting in Anaheim in March 1978 was almost exclusively devoted to the handling of medicinal information including that mandated by the Toxic Substances Control Act (TSCA) and that managed by the Food and Drug Administration (FDA).

The 177th ACS National Meeting in Honolulu in April 1979, which was the ACS/CSJ Chemical Congress with the participation of the Royal Australian Chemical Institute, the Chemical Institute of Canada, and the New Zealand Institute of Chemistry, provided a new and unusual experience of mounting joint symposia with the Japanese chemical information scientists.



**Speakers at the "History of Abstracting" symposium at the ACS/CJS Chemical Congress in Honolulu, HI, on April 4, 1979: Reiner Luckenbach, Eugene Garfield, W. Val Metanowski, Walter Lippert, Dale B. Baker.**

Gabrielle S. Revesz was the Divisional Program Committee Chairman who collaborated with Shizuo Fujiwara on the chemical information program. The emphasis of the Divisional program was on international aspects of technical information retrieval and on large databases, numeric and bibliographic. Each symposium and session had two cochairmen, an American and a Japanese. Out of a total of 64 papers presented, 19 papers were by the Japanese researchers. The Divisional social event was a moonlight cruise along the Waikiki Beach, with a buffet dinner on board. For some participants, the rolling of the boat was too strong for comfort.

The meeting was memorable for some participants because of the difficulties of getting to and leaving the island, caused by the United Airlines' strike. Those who did not fly in the preceding week had to find alternative routes, even through Seattle or Vancouver. Some never reached Hawaii and that included several speakers whose papers had to be either cancelled or read by someone else. When it came to leaving Honolulu, many had to wait even several days to find alternative airline carriers, including Australia's Qantas.

At the 180th ACS National Meeting (2nd Chemical Congress of North America) in Las Vegas in August 1980, the Subdivision of Chemistry and the Law, led by Howard M. Peters and Hubert E. Dubb, made its official debut with the symposia on protection of intellectual and industrial property, on patent systems, and on specific environmental and workplace laws. There was also a symposium on the uses and applications of the Wiswesser Line Notation (WLN). This was the last symposium on the topic, since the use of the linear notations was decreasing as topological codes and connection tables became more and more applicable to chemical structure encoding, and to structure and substructure searching.

The meeting in Las Vegas was notable for an unusual circumstance. It was first planned for San Francisco and then moved at a short notice of a few weeks to Las Vegas. In spite of its being a joint meeting, only one Canadian presented a paper before the Division. Since the change in location was so sudden, some speakers could not adjust their travel plans and did not come. Their papers had to be read by others.

At the 181st ACS National Meeting in Atlanta in March/April 1981, some symposia addressed specifically professional issues such as careers in information science and in law-related activities.

At the 183rd ACS National Meeting in Las Vegas in March/April 1982, the Herman Skolnik Award was presented to Robert Fugmann from West Germany. He was the first winner of the Award from outside the U.S. Thus, the Award has become international in scope.

At the 184th ACS National Meeting in Kansas City in September 1982, Chemical Abstracts Service (CAS) observed its 75th anniversary with a commemorative symposium. It featured Dale B. Baker, Toni Carbo Bearman, Bryce Crawford, Jr., Paul Rhyner, and Edward E. David, Jr., who discussed not the past, but future information activities in the computer age.

At the same meeting, the Division hosted a five-member delegation from the Chemical Industry and Engineering Society of China, headed by their Deputy Secretary General.

The Divisional Chairman, Jean G. Marcali, officially represented the Division and spoke at the farewell dinner for the retiring CAS Editor, Russell J. Rowlett, Jr., in Kansas City on September 12, 1982.

At the 185th ACS National Meeting in Seattle in March 1983, within the framework of the symposium on "History of Chemical Information Science", chaired by Herman Skolnik, various historical aspects of the Division were presented: a) historical overview (Herman Skolnik), b) its members (Peter F. Rusch), c) communications (Ben H. Weil), d) finances (Jean G. Marcali), e) organization (Carlos M. Bowman), f) meeting programs (W. Val Metanowski), g) papers published (Herman Skolnik), and h) future plans (Ralph E. O'Dette) [Ref. 24]. At the Divisional luncheon, Thomas L. Isenhour, Editor of the *Journal of Chemical Information and Computer Sciences*, spoke about future plans for the Journal.

At that meeting the newly formed ACS Division of Chemistry and the Law, headed by Hubert E. Dubb (Chairman) and J. Susanne Siebert (Secretary), made its debut with three symposia. The Division evolved from the Subdivision of Chemistry and the Law (1980-1982).

International interest and concerns were expressed at the 186th ACS National Meeting in Washington in August/September 1983. Symposia were mounted on "International and Transborder Flow of Information" and the "European Inventory of Existing Commercial Chemical Substances (EINECS)".

At that meeting, the Division contributed a paper on "Searching Fiber/Textile Literature: Sources and Methodology" by B. Z-P. Bass to an ACS Macromolecular Secretariat's symposium on "Polymers for Fibers".

At the 188th ACS National Meeting in Philadelphia in August 1984, a major novelty was a joint session of the Division with the ACS Society Committee on Chemical Abstracts Service (SCCAS). The purpose was to introduce the Committee to the Division, to explain the ACS governance, and to provide a forum for exchanging views on topics of mutual interest. This practise of holding joint sessions has continued into the 1990's, first once a year and since 1988 at every ACS National Meeting.

The ACS Computer Secretariat, of which the Division was a founding member, under the leadership of Rudolph J. Marcus, made its debut at the 189th ACS National Meeting in Miami Beach in April/May 1985 with a symposium on "The Use of Computers in Chemistry". The attendance was excellent, 185 in the morning and 150 in the afternoon. The Division contributed two papers on "Path of Computerized Chemical Information" (Aldona K. Valicenti and Robert E. Buntrock) and "Computer Hardware and Software in Chemical Information Processing" (James E. Rush).

The Division hosted the 3rd ACS/ASIS/SLA Tri-Society Symposium on "New Technologies and Chemical Information - 1986" (chaired by Ruthann Bates and Joanne L. Witiak) at the 191st ACS National Meeting in New York in April 1986. At the Herman Skolnik Award Symposium "Challenges in Moving Toward a New International Chemical Information Order", honoring Dale B. Baker, papers were presented by prominent speakers from Switzerland, France, Japan, and Germany. At the Divisional luncheon, Pamela S. Richards spoke on an unusual subject, "World War II Technical Information Activities of the Allied and Axis Powers".

The ACS Biotechnology Secretariat, of which the Division was a founding member, made its debut at the 192nd ACS National Meeting in Anaheim in September 1986. Presented was a full week of symposia on the impact of chemistry on biotechnology, technology of biopolymers, biotechnology of agrochemicals, and biotechnology in agriculture, food, and waste treatment. The Division contributed a symposium on "Biotechnology Information", organized by Ronald A. Rader.

At the same meeting, the ACS Division of Computers in Chemistry observed its 10th anniversary with a symposium on "The History of Computing in Chemistry". W. Val Metanomski contributed a paper on "Impact of Computers on Chemical Literature". The paper reflected the activities of the ACS Division of Chemical Information in the field expanding from "chemical literature" to "chemical documentation" to "chemical information", and of its members who under-

went a transition from "literature chemists" and "chemical librarians" to "chemical information specialists".

At the 195th ACS National Meeting (3rd Chemical Congress of North America) in Toronto in June 1988, several symposia with emphasis on numerical data and numerical databases reflected the international participation. One symposium specifically described the activities of CODATA (Committee on Data for Science and Technology of the International Council of Scientific Unions). Out of a total of 58 papers presented before the Division, 10 were by Canadian, two by Mexican, one by German, and one by French speakers.

That meeting saw the last symposium of the ACS Computer Secretariat on "How the Computer Has Affected the Practice of Chemistry". One session was contributed by the Division, organized by Bonnie Lawlor and chaired by Eugene Garfield.

At the 196th ACS National Meeting in Los Angeles in September 1988, Rudolph J. Marcus was honored at the Divisional luncheon for his contribution to the Society's activities by single-handedly organizing, guiding, and nurturing the ACS Computer Secretariat. The Secretariat was needed as an umbrella organization to bring together various aspects of computer applications before the latter became part of everybody's professional life.

The 202nd ACS National Meeting was the 4th Chemical Congress of North America in New York in August 1991. The Division presented symposia focused on synthesis planning, chemical reaction searching, and three-dimensional structure handling. The international aspect was highlighted by the symposium on "International Flow of Information: North America and Europe", organized by Edmund T. King.

A good illustration of the variety of topics and the versatility of Divisional activities was the program at the 204th ACS National Meeting in Washington, DC, in August 1992. Symposia were given on genome information, hypermedia in chemical information and education, topological information in molecular modeling, and biotechnology patent information.

The variety of topics was also evident at the 205th ACS National Meeting in Denver in March 1993, where symposia dealt with stereochemical information, competitive intelligence, and environmental information management systems.

For the 206th ACS National Meeting in Chicago in August 1993, symposia are planned to cover new technologies for the delivery of chemical information, chemical information careers in transition, spectroscopic databases, computational approaches for matching chemical structures, chemical information instruction, and electronic notebooks.

### Unusual Experiences

For all the ACS National Meetings, the assignment of hotel rooms for Divisional meetings and social functions has always been done by the ACS Department of Meetings and Divisional Activities. Special requirements have been honored for most meetings, such as having cosponsored and related symposia organized by other Divisions, as well as Divisional governance functions, in the same hotel or convention center where the Divisional own symposia and sessions were held.

Occasionally, however, the Division was unlucky in having its meeting room or social function in hotels ill equipped for the purpose or far away from the center of the ACS National Meeting activities. Here are a few instances of such experiences to be reminisced by the participants in years to come:

- Hotel Konover in Miami Beach in September 1978, farthest north on Collins Avenue, 4.1 miles from the Convention Center, site of the ACS Exposition
- Hotel Warwick in New York in August 1981, where corridors and rooms were refurbished with accompanying noise, just outside the meeting room while the sessions were being held
- Hotel DiLido in Miami Beach in April 1985, where
  - hotel staff did not know or pretended not to understand much English, which was convenient for handling, or rather ignoring, complaints
  - for the Executive Committee meeting, the seating was arranged in tables of four, ideal for a bridge tournament
  - at the luncheon when someone asked for a slice of bread, a whole loaf was delivered still wrapped in plastic foil
- Hotel Milford Plaza in New York in April 1986, definitely a third-class, not noted for cleanliness
- Hotel Pennsylvania in New York in August 1991, farthest south on 7th Avenue, 22 city blocks

from New York Hilton Hotel, site of the ACS Exposition

### 4. Special Meetings, Joint Meetings, and Regional Activities, 1975-1993

A detailed list of symposia and sessions at the special and joint meetings is presented in **Table VII** (page 47-48), along with the number of papers and the names of organizers and chairmen.

#### ACS/ASIS/SLA Tri-Society Symposia

The 1st Tri-Society Symposium (originally referred to as "Seminar") was held in conjunction with the 69th Special Libraries Association (SLA) Annual Conference in Kansas City on June 11, 1978. The host was the SLA Chemistry Division and the topics included indexing, retrieval of structures, accessing online files, and toxicological information. The program attracted more than 100 attendees.

The precedent for a cooperative effort of the three groups was established. An organizational meeting on the next Symposium planned for 1981 took place as early as November 15, 1978, with Gabrielle S. Revesz representing the Division, yet the plan was abandoned on June 10, 1980. Even a last minute detailed proposal by Harry M. Allcock did not produce the desired result. The reasons cited for cancelling the project were "organizing complexity, meeting conflicts, and loss of spirit". The organizers agreed "to shake hands and quit", because "the financial and organizational risks were looming larger, and the potential for benefit smaller".

It took a determined effort on part of James M. Cretsos, on behalf of the American Society for Information Science (ASIS) - Special Interest Group on Biological and Chemical Information Systems (SIG/BC), to put the project back on the front burner in March 1981. Once all three societies became convinced that such a meeting would be very beneficial to the professional needs of the three groups, planning proceeded smoothly.

The 2nd Tri-Society Symposium was on "Technology and Its Impact on the Future of Chemical Information Processing" and was held in conjunction with the 45th ASIS Annual Meeting in Columbus on October 17, 1982. The emphasis was on new techniques and systems, and interfaces with end users. Over 90 participants attended. The final report by James M. Cretsos, the symposium organizer, stressed the cooperative spirit of the three cosponsoring groups and