

History of the POLY division of ACS 1951-1990

About the Author

The history of the POLY division below, written in 1991, was generously provided by **Jesse C.H. Hwa**. Dr. Hwa received his B.S. with honors from the St. John's University, Shanghai, China in 1945, and M.S. and Ph.D. in 1947 and 1949, from the University of Illinois. He worked for the Rohm and Haas Co. (1949-63), and the Stauffer Chemical Co. (1963-85) in the Research and Corporate Departments. Dr. Hwa has been President of Hwa International (Stamford, CT), Inc., since 1985. Dr. Hwa's service to the POLY division of ACS include Education Committee (1964-66); Chairman, Membership Committee (1967-68); Alternate Councilor and Secretary (1969-71); Vice Chairman (1972); Chairman (1973); Past-Chairman,(1974); Councilor, (1975-86); Chairman, Historical Committee (1988 - **present**). Dr. Hwa also served the National Office of the ACS as Council Committee on Program Review (1975); Council/Board Joint Committee on International Activities (1975-83); 5 subcommittees of IAC; Advisory Board, "Advances in Chemistry Series" (1974-76); Chairman, Division Councilors Caucus (1976-83); Directorate, Division Officers Caucus, (1983-84); Chairman, Division Officers Group (1978); Program and Organizing Committees, 1979 and 1984 Pacific Basin International Chemical Congress; Volunteer Career Consultant (1990-91).Dr. Hwa has been active in many other scientific, professional, business and ethnic organizations. He has published 20 technical and 10 non-technical articles and has 47 U.S. patents.

The history of the POLY division is divided into: Summary, Preface, Introduction, Early Years (1951-65), Transition and Growth (1966-75), Expansion and Strengthening (1976-91), **Modern Era (1992-present)**.

Preface

It was 5:30 p.m. on a lovely Sunday afternoon just prior to the 1985 fall ACS meeting in Miami Beach. A crowd was waiting for the elevator in the lobby of the Fontainebleau Hilton Hotel. One short fellow asked his friend, "Which floor is it on?" His friend replied, "I think it is on the 40th floor. They always choose the top floor. We don't have to worry. I think everybody is going there." The short fellow said, "I just joined the Division last year and I would not mind meeting some people. Right now I sure can use a cold beer." Sure enough, the crowd all emptied out on the 40th floor, made two right turns and headed toward the end of the hallway. The door to Room 4002 was wide open and several people were standing outside, chatting and with drinks in hand. The room was packed and the noise was thunderous. At the entrance to the room, a big sign read: "Polymer Division Hospitality Suite." The occasion of an open Hospitality Suite of the Division of Polymer Chemistry (POLY) was a recent tradition. As few ACS Divisions do likewise, it sure was a sign of affluence.

As of 1991, the POLY division had over 8,000 members and affiliates and is the second largest division in ACS, after the Division of Organic Chemistry. It publishes possibly the world's most widely circulated polymer journal, Polymer Preprint and operates with an annual budget of over \$400,000. How did POLY get to this size and prestige? The story of POLY is worth telling, especially at the occasion of its 40th Anniversary in 1991.

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The history of POLY had previously been reviewed in a symposium which was held in Atlantic City in September of 1974 and chaired by **Otto Vogl**. Talks were given by several distinguished people including the late **Speed Marvel**, **Herman Mark**, the late **Bill Bailey** and **Charlie Overberger**. A video of the symposium was made but no material was written up in the Polymer Preprints. **Bob Ulrich**, then of General Electric, at about the same time gave a written review of the history of POLY from 1951, the first year, up to around 1974, using some of the material available at the symposium. The document was published as a lead article in "Contemporary Topics in Polymer Science", Vol. 1, Macromolecular Science, Retrospect and Prospect, **Ed. R.D. Ulrich**, Plenum Press, N.Y., 1976. It is the only such material in print.

The idea of writing an updated history of POLY came in 1988 when the writer was asked to serve on the Historical Committee of POLY by the then Chairman, **Dick Ikeda**. Because of his 26 years of association with POLY (since 1964), the writer proposed to undertake the project of writing an updated history. The proposal was well received and approved. Shortly after the initial writing began, it became clear that the job was substantially bigger than what was originally envisioned. Because it was not possible to allocate one uninterrupted period of time to devote exclusively to writing, the writing and editing were done piecemeal in 7 or 8 five to seven-day campaigns over a 3-year period. The material used in the writing came from several sources, the bulk of which being the newsletters published in most of the previous years. The writer also sorted through the archives, stored by POLY's former Business Manager, **Jane Vogl**, in Brooklyn. A few early documents are reproduced here. One particularly interesting source of material came from **Jane Vogl**, who, in 1985, got the idea that it would be nice to collect some remembrances, anecdotes, stories, etc., from some of the people who contributed to the building of POLY. At that time, she had no clear idea of what to do with information collected. In any event, she wrote to over a dozen people and collected some letters from most of them. With her consent and support, these letters, which add authenticity and color to the history, are compiled in the Appendix of this document.

In addition to words, it is always nice to include some pictures of people, whenever possible, as history is made by men and women. In this regard, some archival pictures including some recent ones and photographs of the present and past living chairpersons are shown. The collection of such pictures has turned out to be a bigger chore than first envisioned. The narration of this history covers the entire 40 years of POLY's history, instead of picking up where **Ulrich** left off in 1974. Also, to make this document more useful, tabulation of certain past events, particularly the awards, is included in the Appendix. Since it is impractical to include the names of all the committee chairpersons in each year, only the names of the Executive Committee (Officers and Councilors) in each year and a "snapshot" of all committee members in 1990 are shown in the Appendix.

History is made of people and events and history depends on who is telling it. Although the writer has served POLY continuously for over 26 years, except for 1987, and had the opportunity of witnessing and creating some history, nevertheless the writing, like any historical account, is one man's version. To make this writing more authentic and factual, a draft of the history was first circulated to over 19 people in the summer of 1990 for comments, corrections, additions, etc. These people are, in no special order, **Herman Mark**, **Ray Boyer**, **Charlie Overberger**, **Stretch Winslow**, **Ed Fettes**, **Jane and Otto Vogl**, **Dick Ikeda**, **Charles Carraher**, **Ed**

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Vandenberg, Eli Pearce, Bill Culbertson, Bob Ulrich, Ann and Joe Salamone, James McGrath, Frank Harris, Fred Bailey and Stan Israel. They were chosen on account of their familiarity with the development of POLY in a variety of functions and over a span of time. Omission of others does not mean that they have not equally contributed to POLY. It is a matter of practicality to handle a large number of correspondence. Eight people replied with their comments and corrections, which, after some further careful checking as to accuracy, are incorporated in the document. Hence, it is believed that this history may be regarded as a verified broad account of the events as seen by many people who helped create it.

As this History consists of not only narration, but also tables, archival documents and pictures, printing of the document is more complex. The writer is indebted to **Bill Culbertson**, Preprints Editor, for his contributions in handling the production of the History. It should be pointed out that this review is about the history of the Polymer Division, and not about the history of Polymer Science which would be an entirely different matter and has already been treated extensively by others elsewhere.

The present description of the history of POLY is intended for three types of readers:

1. Those members and affiliates who are not too familiar with the background and activities of POLY, how they relate to ACS, and how the services of POLY such as symposia, preprints, etc. are provided.
2. Those ACS members, including POLY and non-POLY members, who may have presented some papers in POLY meetings and who have some general interest in the internal working of POLY as an organization. It is hoped that this article would stimulate some of them so that they might also be interested in serving POLY.
3. Those who have already served POLY in the past or are now serving. A complete coverage of the history provides the fabric to which each person's contribution can be related. It is an acknowledgment of each individual's effort, however big or small.

Introduction

POLY is a Division of the ACS. It participates in societal activities in two ways: (i) responsible for and carrying out POLY technical programs at National ACS meetings and elsewhere, and (ii) participating in the governance of ACS. At each National meeting, the Department of Meetings and Exposition of ACS provides the mechanism to run a meeting such as announcements, site facilities, staff supervision and support, abstracts, etc. POLY looks after the technical program. Also, during most ACS National meetings when the Society governance meets, POLY Councilors who represent POLY attend Council meetings, vote on issues, and work on appropriate Society Committees.

Outside the National meetings, ACS and POLY continue to interact in various ways including official reports from POLY's Secretary and Treasurer, optional publication of POLY symposia, holdings of conferences to coordinate programming of all ACS divisions, etc. Members of ACS can become a member of POLY by qualifying and paying annual dues. They have a right to hold

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office and to elect POLY officers. Through their support and interactions with one another, they influence and sustain the activities of POLY. Non ACS members can become POLY affiliates. They also pay dues and enjoy all privileges of being a member, but they cannot vote or hold office. A significant number of POLY affiliates reside overseas.

The officers of the Division are elected from the membership. The officers in turn create committees to man various functions. In its first year, POLY had only a minimal organization. As years passed by, the number of people who served POLY in various capacities swelled. By 1990, there were 32 committees and the total number of people who served on POLY in various functions exceeded 100. With the exception of a paid Business Manager, a position which was started in 1983, the work of all other people in POLY to this day is voluntary. Any member may serve POLY. The only unofficial qualification is that he/she has an interest to serve and is active in polymer science. Then, this person may become an officer, via election by the membership of POLY, or a committee chairman via appointment by an officer, or a committee member via appointment by the committee chairman.

The early workers of POLY were mainly from the academia as they were closer to polymer science and it was easier for them to serve POLY. Later, industrial people started to participate in the work of POLY in increasing proportions. So, as a tradition, POLY tries to have its Chairman alternate from the academia and industry. All these people, from an officer to a committee member, devote various amounts of time and effort toward the activities of POLY. For an officer or a committee chairman, the demand of the post is often considerable. For a worker from the industry, this is made possible when his/her employer is willing to allow him/her to spend appreciable company time on POLY activities and to shoulder his/her expenses. (This is an opportunity for the writer to acknowledge on behalf of all POLY workers from the industry, the unsung indirect support of their industrial employers.)

POLY grew from a small group centered on scientific programs at National ACS meetings to a 100-person organization today which not only has sustained and expanded the scientific program in scope and form, but also has extended into auxiliary activities such as education, awards, etc. POLY has built a strong infrastructure to support its mission. POLY's forty years of history may be divided into three periods. While the division is arbitrary, the logic may be seen from an examination of the formation and dissolution of the appointed functional committees.

Period	Duration (Years)	Number of Committees	Committees Formed	Committees Dissolved
I. Early Years	1951-1965	15	6	0
II. Transition and Growth	1966-1975	10	14	0
III. Expansion and Strengthening	1976-1990	15	15	4

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The characteristics and highlights of each period will now be described in some detail in the following sections.

Early Years (1951-65)

Founding of POLY. Prior to 1946, no division or program within ACS was specifically dedicated to polymers, although some polymer papers were presented in some divisions. To coordinate presentation of polymer papers, a High Polymer Forum was organized in 1946 so that polymer papers presented in various divisions could be identified and scheduled. Principally, five ACS Divisions cooperated in this effort, the then Paint Varnish and Printing Ink, Physical and Inorganic, Rubber, Cellulose and Organic. The Forum was popular and well attended.

The official reason for starting a separate division devoted entirely to polymers was that "polymer papers (in the Forum) were spread out in a somewhat random manner over many divisions, so that it was difficult to hear them all in the course of a National Meeting in the event someone was interested in doing so." But the unofficial version was that a bunch of polymer chemists in those days, including **Maury Huggins, Paul Flory, Speed Marvel, Herman Mark, Ray Fuoss** and others, were in a railroad station bar in Atlantic City waiting for the train after an ACS meeting. They chatted about the Forum. The idea of starting their own Polymer Division was born there.

Most of the leg work on forming the Division probably fell on **Paul "Pop" Powers**, then of Battelle Institute. Pop collected signatures for the petition to ACS to form a new division and brought **Paul Flory** along in the actual petitioning. Both **Pop** and **Flory** claimed and wished to be remembered as the founders of the Polymer Division. The petition consisted of 78 signatures, which exceeded the minimum of 50 required, and was submitted in October, 1949 at the fall National ACS meeting. The petition was approved by the ACS Council in 1950 as a probationary division and formally as a full Division in 1951.

The objectives of the Division were "to advance knowledge and understanding of the processes of polymerization and of the chemical constitution and chemical and physical properties of the polymeric materials, and to promote basic research in these fields." These objectives have remained unchanged until this day.

Organization. The organization in 1951 was minimal, consisting of a Chairman, Vice Chairman, Secretary/Treasurer, two Councilors and two Alternate Councilors, as required by ACS bylaws. There were three committees: Nominating, Program and Membership. **Speed Marvel** was Chairman, **W.E. Hanford**, Vice Chairmen and **Herman Mark**, Secretary/Treasurer. The succeeding Chairman from 1952 to 1955 were: **Hanford, Flory, Fuoss** and **Mark**. Later three more committees were added: Biennial, Preprints and Education.

The burden of the daily work of POLY, like that for most small organizations, fell on the Secretary/Treasurer who, like a kitchen sink, caught everything. POLY mandated that the duration of that office be three years. Hence, during the early years, only four people served in

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that office: **Herman Mark**, **Joseph Dec**, **F.H. "Stretch" Winslow** (who served for two successive 3 year terms) and **Bill Bailey**. Because of the nature of that office, the Secretary/Treasurer had to attend to all business and membership matters. That person practically ran the Division and made most of the decisions. For example, Winslow's file for the years 1961 and 1962 measured two inches thick, all in onion skin papers. POLY owes much to the devotion of these early officers.

In the first few years, the Chairman of the Program Committee was a non-officer, separately appointed by the Chairman. Later, the Vice Chairman automatically served as Chairman of the Program Committee. The official thought behind this, was that, since the technical program of the Division was such an important activity, the newly elected Vice Chairman ought to take part in POLY's work by first taking care of the technical program. This tradition started in 1959 when **Frank Mayo** became Chairman. The unofficial reason, according to Mayo, was that he thought the incoming Vice Chairman had nothing to do. The Division dues were initially set at \$2, but it was reduced to \$1 in 1954. When the Preprints were issued in 1960, the dues went up to \$4. The Bylaws of the Division were revised periodically in order to improve the operations of the Division, e.g. automatic succession of Vice Chairman, voting by mail instead of at a business meeting, etc.

Technical Programs.

1. General Papers and Symposia. The focus in the early years was centered on the technical program. This was what the founding fathers set out to do and until this day, POLY has continued that tradition. In the early years, the polymer community was a closely-knit group. The active people knew what was going on and were able to schedule timely papers and symposia. The average attendance was usually 150-170 and peak attendance was 250-350.
In later years, as membership grew and the areas of interests broadened, scheduling of timely scientific programs stemmed from close contact of the officers with the membership. Members active in certain fields frequently proposed symposia dealing with their expertise. Of the ten members, they were asked to organize and chair those symposia. This provided stimulation, participation and challenge to these people. As a result, over the years, symposia at ACS meetings consistently were of high quality, timely and reflected members' interests. This became the cornerstone of POLY's technical strength.
2. Biennial Symposia. In the 1950's, the Gordon Research conferences had already become very popular. The informal atmosphere, lots of discussion, close personal contacts with colleagues of high stature, etc. all were good reasons why many people flocked to attend the Conference. The "Polymer" session of the Conference was particularly popular because polymer research was widely practiced in the industry. The problem then was that the Gordon Conference was too successful. Lots of people, often over 300, applied. To maintain Conference objectives, the Conference Chairman on Polymers had to limit the attendees to about 100. This created a lot of dissention among those rejected. POLY officers who themselves were active in the Gordon Conference were aware of this situation. Then they said: "Why can't POLY have our own 'Gordon

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type Conference?" So, in 1959, **Frank Mayo** appointed a committee to plan on a Biennial Polymer Symposium of the Polymer Division.

To put on a conference outside of the ACS meeting created much more work. Besides the program itself, now someone had to handle the logistics of site selection, reservations, registration, payments, etc. So an Arrangements Chairman was appointed to deal with those problems and to work along with the Symposium Chairman. Secretary **Winslow** was intimately involved in the preparation. The first such symposium sponsored by POLY outside of ACS meetings was held in 1962 at the Michigan State University with **H. Starkweather** and **J.R. Kinsinger** as Program and Arrangements Chairman, respectively. It had a Gordon Conference-type format and was attended by some 375 people. Since the work in putting up such a symposium was considerable, it was decided to sponsor such a symposium every other year. Since then, the Biennial Symposium has become a landmark and a companion portion of POLY's technical program up to the present time.

Polymer Preprints. The idea of preprinting polymer papers practically started from day one of the Division. As early as 1953, the pros and cons of having Polymer Preprints (PP) were hotly debated in Division business meetings, with no resolution. The pros cited usefulness to those not able to go to the ACS meetings, and possibly more detailed discussions. The cons worried about added burdens to speakers, encouragement of people not to go to meetings, and added cost to members. In fact, in 1955, the membership voted not to have preprints.

The idea of preprints did not die. Evidently, the subject surfaced again in subsequent business meetings. As a hindsight, probably the deciding factor was a practical one: the mechanics of who does what and when. It was no easy task to put out a preprint. The work load all fell on the shoulders of the Secretary. POLY was most fortunate to have **Stretch Winslow** at that time. Winslow was able to acquire the "know how" from the then Division of Organic Coatings and Plastics which had been preprinting their papers, and talked **Chester Rosenbaum** of Du Pont Co. to be the first Preprint Editor, who served faithfully for seven years.

The Number 1 issue of Volume 1 of PP was issued in the spring meeting of 1960. It had the familiar 5 1/2 x 8 1/2 format, with a gray cover. That "thick book" format stayed essentially unchanged for many years with some minor improvements such as lettering on the spleen of the volume and changes in the color of the cover. PP was initially conceived as a convenience to the members. The officers at that time did not realize that 40 years later, the Division would have grown so big and prestigious that PP would later become possibly the largest circulating polymer journal in the world. A recent 1989 survey showed that 80% of the POLY members said that they belong to POLY primarily because of the quality of the Division Symposia and the availability of PP. The foundation of POLY in those years - symposia and PP - remained intact until 2007.

Membership Committee. The membership count from 1951 to 1955 was 306, 421, over 560, 545 and 646, respectively. When **Bill Bailey** was Secretary/Treasurer in 1963, he maintained that about half of all chemists in the U.S. had, in one way or another, something to do with polymers.

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We ought to have more members. The thing to do was to go after them. So he conceived the idea of setting up regions whereby in each region there was a local POLY representative who would recruit new people to join POLY. Later he created the Membership Committee to undertake that task. Because of his leadership, the membership at the end of 1964 was 3,597 (3,419 members, 178 affiliates), a growth of 70% over 1963.

Education Committee. In 1964, an Education Committee headed by **Maurice Morton** was formed. The initial vision at that time was a modest one: POLY ought to help academic chemistry departments know more about polymers by making information on polymers more easily available to them. Early work consisted of mostly information gathering and surveys. It was, of course, a slow start as the initial Committee was small and the tasks were almost limitless. Later when **Eli Pearce** became Chairman of the Committee, the activities gathered more momentum. But the real advance did not come until 15 years later.

Transition and Growth (1966-75)

Beginning in 1966 and for the next 10 years, POLY underwent a transition from an informal "family"-oriented division to a business-like enterprise. The Division was growing and there were additions of many new activities. All these had to be pulled together into a logical and manageable format. By the end of that transition period, much of what we see as POLY today was in place. The following 15 years were a period of expansion and strengthening of the Division's infrastructure.

New Committees and Governance Restructuring. During this period the Executive Committee, which consisted of the Officers and Councilors, remained unchanged. The number of functional committees increased from 6 in 1965 to 20 by 1975 (an increase of 14). The background for the formation of each new committee is described below in an approximate chronological order.

Nomenclature. A Nomenclature Committee was formed under Chairman **Bob Fox** early in 1966 because, since the nomenclature of polymers was not unified in those days, it was thought that POLY might be able to contribute in some way. The activity, consisting of investigation, proposals, revisions, etc. in specific areas of nomenclature needs, was to support the work of the IUPAC Commission on Macromolecular Nomenclature. One of the first completed projects was basic: a system to name homopolymers according to their structures, rather than their source. There were also other continuing projects. While understandably progress of work in this Committee had been slow and not widely publicized, nevertheless this Committee has served POLY faithfully until this day.

Bylaws. The growth of POLY necessitated updating of bylaws to match the real life activities. A caretaker would watch the developments and needs. When situations required it, the Bylaws Committee, usually just one person, would go through the process of proposing specific bylaw changes and getting membership and ACS approval. Since POLY's birth, the bylaws were revised many times.

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Charter Flights. By the mid-sixties, international polymer meetings became more frequent and many members attended the overseas meetings. In those days, it was possible for organizations to negotiate directly with airlines and obtain charter rates. So, POLY initiated this activity to provide service and benefits to its members. **Henry Z. Friedlander** headed this effort from 1965 to 1977, during 3 years of which the program was managed by his associate, **Charlie Garber**. The first charter flight and two group flights were on SEBENA in the fall of 1965 to coincide with the 1965 IUPAC Macromolecular Symposium in Prague and other meetings elsewhere in Europe at that time. Members, not required to attend any meetings, could get off in Brussels or Zurich at a round-trip fare of \$238 from New York. They enjoyed a plane-load of friends, amenities, free open bar and fun.

For over 10 years, the popular "Friedlander flights" pleased many POLY members who went to Europe for meetings or for vacationing. Under advisement by the Executive Committee, Chairman **Bill Culbertson** terminated the "Friedlander flights" in 1978. POLY then used a travel agency to manage group flights to international and biennial meetings, sometimes with optional tour and hotel packages. This program was also very popular and well received. Only in recent years when discount airfares were widely practiced by airlines, the POLY-sponsored group flights and packages were discontinued.

Membership Booth. In the early years, the job of the Secretary and Treasurer was one. Beginning in 1966, that job was divided into two parts. **Bill Cass**, then of Northeastern University, was Secretary from 1966-1968. Anyone who attended POLY meetings in those days would remember faithful Secretary Cass sitting outside of POLY meeting rooms and selling Preprints. He was there, mornings and afternoons, for all five days.

When **Jesse Hwa** became Secretary in 1969, the Secretary's job had grown further. As an industrial manager with limited time availability, he quickly spun off a few clearly defined tasks. The first urgent task was to have someone look after membership booth matters. That created this Committee which was headed by Jim Kinstle during the early years. The delegation of jobs increased efficiency, involved more people and enhanced motivation.

Circulation. Polymer Preprints was available not only to members, but also to corporations and libraries. As the price for such sales or subscriptions were higher than that for members, library subscriptions represented a good revenue for POLY. Bill Cass used to put the names of subscribers on addressograph plates and, with a home-made device, he hand cranked each addressograph plate to get the address of the subscriber. He also handled all the billing and mailing of the Preprints to over 300 accounts. Hence, this library subscription and circulation task was another urgent job that Secretary Hwa had to spin off.

Through an advertisement in the Newsletter, **Bob Saxon** of American Cyanamid in Stamford, among others, applied. He got the job, partly because he lived nearby. That fortuitously turned out to be a fortunate choice for POLY. **Saxon** had that job of Circulation Manager continuously from 1970 to 1979, for a total of 10 years. He faithfully expanded the circulation business and, year after year, good income kept coming into the treasury. The interesting thing was that with the exception of **Hwa**, practically no one knew him because during the 10 years, he came to ACS meetings only once. A frequent question asked at POLY board meetings was "Who is this man Saxon?"

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Public Relations. The Public Relations Committee was an outgrowth of the Membership Committee which promoted the cause of POLY. This separate Committee was formed to engage in a variety of PR activities, particularly in publicizing POLY scientific programs.

Speaker's Bureau. One of the activities of the Public Relations Committee was to maintain a Speaker's Bureau whereby members would volunteer, when requested, to give talks on their specialties to technical or non technical groups. The availability of willing speakers was broadly advertised through Newsletters and Preprints. **Eli Perry** was in charge of this activity for several years. Later this activity was separately designated as an independent committee.

Professional Affairs. In the early 70's, the subject of professionalism was actively discussed in ACS. The wave of professional activism culminated later in the election of **Dr. Allen Nixon** as ACS President. POLY appointed **A. Pavlath**, an active proponent of professionalism, also a POLY member, to head a new Professional Affairs Committee. One of the principal projects at the time was to help unemployed polymer chemists find jobs. In later years, as the national emphasis on professionalism subsided and unemployment of polymer chemists dropped, this Committee likewise was dissolved.

Awards and Grants. After spending 3 years in dealing with the operating problems of POLY, and when Hwa became Chairman in 1973, his main concerns were with how to manage the greatly enlarged team and how to address the future. The Division at that time was financially incapable of handling anything more than the day-to-day needs. While POLY was not ready for Awards and Grants, but in envisioning the kind of organization that we wanted it to be, Hwa wished to make a start. In 1973, Hwa appointed two special advisors: (a) Jack Koenig to gather information and consider sources on funding for polymer research; and (b) Joseph Kennedy to gather information on awards and honors available for deserving members of the Division. These two posts were later formalized by Chairman Otto Vogl in 1974, as the Grants and Awards Committees, respectively. It took several more years of continued exploration and work before POLY actually obtained grants and had its own awards.

Planning. The Division was in the midst of growth by 1973. It ought to be concerned with future problems, comments coming from the members, areas of strength and weakness, the direction and programs that POLY should be thinking, etc. As planning function was common in industrial business and research organizations, there should also be a place for such function in POLY. A Planning Committee was created with Hwa doubling as Chairman. In the third Expansion and Strengthening Period of POLY's history, this planning function became an important and useful tool of the Executive Committee.

International. When the International Committee was first formed in 1970, that was the time when many members became more active in the international polymer community. There were many contacts via conferences, visiting lecturers, etc. It became desirable that POLY should have a representative with an international reputation who would travel frequently overseas. The representative would then promote stronger relationships between POLY and individuals and polymer societies. In this process, POLY would also gain international membership. **Joe Kennedy** and **Vivian Stannett** were the representatives until 1974.

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Intersociety Relations. In a few more years, it became apparent that the International Committee as it was first conceived, was too broad. The development of international membership was one activity, but the development of relationship with foreign societies was another. A decision was made in 1975 to split the two functions. The name "International Committee" remained unchanged, but it then confined the activity to the development of international membership. A new Intersociety Relations Committee was created in 1975. POLY was fortunate to have **Otto Vogl** head this function right after Vogl's term of chairmanship in 1974. This job required not only an international reputation, frequent foreign travels, but also the sensitivity of knowing the politics of international interaction.

The term Intersociety also encompassed domestic as well as international. The emphasis in the beginning was international. Later, as POLY entered into the third period of expansion and strengthening, the domestic aspect was strengthened and enlarged. Today, in 1990, the two aspects are split further. The Intersociety Committee now stands entirely for domestic activities, while the international aspect has been carved out and renamed as Foreign Affairs Committee.

Macromolecular Secretariat. In the early 70's, POLY already began to co-sponsor joint symposia with other ACS divisions. At times, other divisions sponsored their own symposia with considerable content in polymer chemistry. This was because polymer science manifested in many disciplines of chemistry. **Jack Elliott**, Chairman in 1969, had long felt that there should be a better way of pulling the resources of various divisions and addressing the many facets of polymer science at the same time. This would foster cooperation and synergism. The concept of a Macromolecular Secretariat was born. The divisions that could have interest in such a concept were, besides POLY, Organic Coating and Plastics (now PMSE), Rubber, Wood and Fiber (now Cellulose) and Colloid and Surface. At Elliott's initiative, supported by Otto Vogl (representing POLY), they first developed the basic concepts of the organization. Then a series of planning meetings with other divisions began in 1971, culminating in the official formation of the Secretariat in 1973, with Elliott as the first Secretary of the Secretariat. The first such joint symposium involving all 5 divisions took place in that year. The topic was "Acrylonitrile in Macromolecules" and presentation of papers from the contributing divisions took place sequentially in one room. The overall organizing chairman was **Eli Pearce**. This new programming practice was very well received by all and has since been continued up to the present.

Notable Events and Activities

Membership Survey in 1967. Believing in the value of interpersonal contacts and in the need for reaching out to members and non-members and finding out their interests and needs, so that POLY can better scope out future programs and directions, Membership Chairman **Jesse Hwa** launched a major membership survey in 1967. The method was via the utilization of the Membership Committee's regional structure that **Bill Bailey**, **Ed Fettes** and **Joginder Lal** established earlier, and Hwa later expanded. After being contacted by Regional Directors and 81 representatives on a person-to-person basis, a total of 765 members (ca. 20% of POLY membership) and 1343 non members, the majority of whom had at least some moderate connection with polymer technology or science, responded each filling out a questionnaire. He noted that over 85 members indicated a willingness to serve on various committees. In a report to the Executive Committee and the membership, Hwa summarized the following findings:

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- Among the non-members, a large majority (almost 50%) know little about POLY. They may become members if they are approached and given more information about the Division. Many have also shown interest in becoming members if the Division sponsors programs of a more applied nature.
- In general, the present members think well of the Division.
- Most members favor an experimental joint meeting with other sister divisions separate from the fall ACS meeting.
- Most members are agreeable to an increase in dues to implement an expanded program. The majority of members are dissatisfied with the status quo in programming. An expanded program is desired.
- Many would like to see some expanded activities, especially a membership directory.

He then provided a series of recommendations:

- The Division should expand the scope and intensify the present programs. Suggestions:
- Establish a more permanent office of Program Chairman to enhance continuity in programming.
- Establish four program subcommittees:
- National ACS meetings (present program committee)
- Joint meetings with non-ACS organizations (new)
- Symposia (present Symposium Committee)
- Polymer Courses (new)
- The Division should set up a new Activities Committee.

And continued with specific suggestions:

- Establish two activities subcommittees:
- Group flights (present activities)
- Publicity and arrangements (new)
- The Publication Committee could consider the preparation of a membership directory.
- The Division should consider the feasibility of obtaining a paid secretary to implement various expanded operations.

The survey provided useful input to POLY and resulted in the recruitment of many new members and additional members to serve POLY. Most of the recommendations were implemented in subsequent years.

Membership Survey in 1969. In 1968, the Executive Committee wished to reexamine the role and goals of POLY in light of the vastly expanded usage and understanding of polymers, to assure that the Division was responsible and meaningful to the needs of present and future members. In particular, since POLY's bylaws states: "to promote basic research", some members questioned whether the charter on "basic" should be expanded to include "applied." Another survey among the membership was authorized. In 1969, Membership Chairman, **Bill Culbertson**, initiated a survey using a similar earlier person-to-person approach via the Regional Directors and their representatives. All together, 695 members and 584 non members responded. Culbertson reported the following conclusions: "On the question of direction and objectives, the

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Division is divided. Of the 695 members surveyed (ca. 20% of the total Division membership), 59% favors that we broaden our scope to include both the basic and applied areas while 32% prefers that we pay primary emphasis on basic subjects. Some suggest middle-of-the-road approaches. Of the non-members contacted, a larger fraction (ca. 65%) also favors a broadened scope. Many of the non-members are potential members of the Division."

The Executive Committee used the results as advisement, but did nothing to change the wording of the charter. In subsequent years, as the sheer volume and depth of Division technical program expanded, the need to define basis vs. applied disappeared.

Financial Crisis. Normally, receipts from dues and library subscriptions could cover expenses in Preprints and newsletters, and there was usually some left-over balance to carry over to the succeeding year. Hence, for the years 1965-1969, there was around a \$16,000 balance each year. Then in 1969, a crisis happened requiring a change of Treasurer. Chairman **Jack Elliott** then appointed **Otto Vogl** to take over the position in a difficult situation.

At that time, many members took the POLY option of paying \$12 for a 3-year period instead of \$5 annually. Some of the income in one year included dues for future years. Coupled with escalating Preprint costs, the end of the year balance in 1970 dropped to nearly zero. Vogl had to put brakes on spending and administer the treasury very carefully. With **Jane Vogl's** help, Otto sweated over this difficult period. By the end of 1971, the balance was \$2,477. During **Jim Mark's** brief administration in 1973, the balance was around \$5,000. The big upturn in financial health started with the arrival of Joe Salamone in 1974 who was resourceful and greatly advanced POLY's financial position. With continued contributions from the succeeding Treasurers, POLY has steadily climbed the steps of financial prosperity. The balance at the end of 1989 was \$358,479.

Biennial Symposium established in 1974. It may be a surprise to some younger members to know that POLY at one point almost terminated the Biennial program. The 1972 Biennial, held in June at the University of Michigan campus in Ann Arbor, was very poorly attended. POLY lost money. The treasury had only about \$5,000 as carry-over at year-end. The cost of Preprints continued to mount and we could not afford another loss situation at the next Biennial. The National economic environment was not that great at that time.

The Executive Committee agonized on what to do. Was the poor attendance due to too many meetings, not good enough program, wrong time of the year, or wrong location? Was it time to terminate the Biennial series? Vice Chairman Hwa felt that we should poll our members once more before any decision was made. A questionnaire was consequently included in the October 1972 Newsletter. The results did not show a clear directive. So by the Spring of 1973, the Executive Committee bit the bullet and decided to try one more time. The time (December) and location (Tides Inn, North Redington Beach, Florida, near St. Petersburg) were changed. The attendance of 168 was considered marginally successful in the midst of the oil crisis at that time. Financially, POLY gained a little. That gave POLY the confidence to continue to use the format of holding the Biennial in the winter and in a resort-like environment. This change proved to be a turning point in POLY's history. The format of holding Biennial and other similar meetings in the future years up to the present has since followed that pattern.

POLY Meeting Outside ACS. In April 1973, POLY held a joint meeting with the Rubber Division in Detroit. That was the only meeting which POLY skipped a National ACS meeting

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and held a Division meeting outside of ACS format. The attendance was satisfactory and POLY received some net income. Turner Alfrey, Jr., winner of the ACS Award in Polymer Chemistry, sponsored by Witco, was honored in a joint banquet. Since that Divisional meeting format did not produce any special benefit, no such inter-divisional meeting has been scheduled.

Organization and Business Management. During this transition period, POLY grew in many directions. Several managerial actions were initiated and they transformed POLY into a business-like organization.

Executive Committee. The first important change in 1966 that signaled a transition from a small science-oriented "family"-style organization to a multi-facet business enterprise was the division of the Secretary/Treasurer's job into two. Up to that time, **Stretch Winslow** and **Bill Bailey** each had the previous combined job for 6 and 3 years respectively. When Bailey became Vice Chairman in 1966, he split the combined job into two. Bill Cass and Jack Kinsinger each became Secretary and Treasurer respectively for 3 years.

Incorporation. When **Bill Gibbs** took office in 1971 as Chairman, he felt that there was a need to protect POLY officers against possible outside legal actions. The Executive Committee voted to proceed to incorporate POLY, patterned after the Rubber Division. The incorporation was completed and took effect in 1972.

Operations Manual. The Membership Booth Committee which was freshly created called for volunteers who would do a one-shot manning of the booth. There was a rapid turnover of the member-in-charge responsible for the booth. Also, each manning of the booth provided experience which could be passed on to the next member in-charge. The Membership Booth Committee, under **Jim Kinstle**, started an operations manual which detailed the steps on how to man the booth.

When Secretary Hwa transferred his office to the succeeding Secretary, **Frank Karasz** in 1972, there were a lot of details about what a secretary was supposed to do. This was in spite of the fact that the booth activity, the library subscriptions, and the PP manuscript preparations had already been divested to others. Hwa wrote a detailed job description about the secretary's job to help the incoming Karasz.

As the Division grew rapidly, it was felt by the Executive Committee that it was a good idea to have an operations manual for all posts of the Division. That started the ball rolling. But to collect a manual for a large number of people was a slow task. It was several years later that the first manual was published. It was updated periodically throughout the years. The existence of the Operations Manual helped POLY to perpetuate the "know-how" and keep the machinery of running the Division going.

Dues Collection. Up to and including 1969, membership dues were collected directly by the POLY Treasurer, which meant that notice preparation, labels, mailing, money handlings and address changes were all handled by the Division. In 1969, ACS Office of Divisional Activities offered a pilot program to help POLY collect Division dues along with the ACS collection of national dues. There was no cost to POLY for members, but \$1/year charge for each affiliate. With the advice of Treasurer **Otto Vogl**, POLY took on the offer and this more efficient

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procedure, started in 1970, has since been carried out throughout all the subsequent years and greatly reduced the work load of the Treasurer.

Streamlining Preprints and Programming Operations. The task of the preparation, editing, production and distribution of preprints was a big job, spread among several people. The early Publications Committee looked after contracting printers and the production end of the operation, while the Secretary took care of the front end of the work: (a) collection of the final manuscripts on special papers from symposia chairmen and the authors of general papers, (b) submission of the manuscripts to the Publication Committee for production and (c) submission of preliminary and final POLY programs, author abstracts and author cards to ACS. That was the situation in 1967-1968 when **Bob Lenz** and **Bill Cass** were handling the production of Preprints. Because of both the ACS and production deadlines, there was tremendous pressure on the Secretary, twice a year, to come up with manuscripts and abstracts on time. Secretary Hwa (1969) found that at times he had to "get tough" and act like a cop to press particularly some lax symposia chairmen on the proper manner of submitting high-quality final manuscripts, e.g. no delays, no "abstracts only" (i.e. sorry no manuscript), no excessive number of papers, etc. This aspect of the Secretary's work connected with Preprints preparation was clearly identifiable and was also spun off by Hwa in 1971. He asked Bill Culbertson to take charge of this work, beginning in 1972.

The tradition at that time was that the Vice Chairman would double also as Program Committee Chairman. When Hwa became Vice Chairman in 1972, he felt that since the Program Chairman changed every year, programming would be more efficient and easier if there is some continuity in that Committee. That was one of his recommendations back in 1967. In 1973, Hwa again appointed Bill Culbertson, who already had the Preprint manuscript preparation job, to be Secretary to the Program Committee. In that way, Culbertson would be able to help the incoming new Program Chairman and lend continuity.

In 1973, **Bob Lenz** wished to resign as Preprint Chairman. The Executive Committee asked **Jim McGrath** to serve as the new Preprint Chairman. So the production end of Lenz's job and part of Culbertson's job in preparing abstracts, programs, cards, etc. for general papers all went to McGrath. Since it was logical for the Program Committee to deal with symposia chairmen, the job of preparing and collecting symposium manuscripts was retained by Culbertson as part of the Program Committee's function. Culbertson then provided his final documents to McGrath and McGrath, as the new Preprint Editor, was in charge of the final operations in producing Preprints. That *modus operandi* went smoothly and has remained unchanged. In later years, the term Committee on Publications-Preprints Editor was changed simply to Preprints. The Publications Committee survived to mean publication of all others-books, etc. except Preprints. The idea of continuity in programming, instead of a new man in charge every year, was well received in 1973/1974. So by 1975, breaking the tradition, a separate Program Chairman was appointed to serve a 3-year term and the first Chairman so appointed was Culbertson.

Business Style. In the 60's, business meetings of the Division were held rather informally in the motel or hotel room of one of the officers. There was no distinction whether the attendee is a committee member or officer. Decisions were made simply by a voice vote of those present. It was not until when **Jack Elliott** was Chairman, that business meetings were conducted in a comfortable meeting room provided by ACS.

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Organization and Supervision. Traditionally, POLY's business meeting involved all those active in the Division's activities. Besides the Executive Committee, the rest of the people included all the chairmen of the committees. To separate the two groups of people, Secretary Hwa coined the word "Board" to denote the large group of people composed of all the working people in POLY, as opposed to the smaller "Executive Committee", which according to the Bylaws, had the power to make business decisions.

It was necessary to convene the Board meeting for reporting purpose, but because of the large number of topics to be presented and discussed, the Board meeting often lasted 3 hours. In the early 70's, a separate Executive Committee meeting was held immediately after the Board meeting. (Later in 1976, Chairman Fred Bailey further separated the two meetings at two different times.) Such separation helped the delineation of responsibilities and the decision-making process.

By the time Hwa became Chairman in 1973, he found he had to communicate with 26 Board members directly on the business of the Division. This situation clearly needed improvement. In that summer, he devised a management responsibility and reporting system that he was familiar with in the industry - an organization consisting of line and staff. He developed an organization chart in which each officer of the Executive Committee i.e. Vice Chairman, Secretary, Treasurer, and the past Chairman, had the responsibility of a line manager. Each officer was in charge of a few committees, the nature of which was close to the function of that officer. Hence, the Chairman did not have to reach out to each committee.

In the summer of 1973, after having devised what is now known as the grid system, Hwa first informed **Otto Vogl**, then Vice Chairman, about his proposal and solicited his support in 1974. Vogl agreed. In the Fall of 1973, the re-organization was announced at the Board meeting. In 1974, Vogl further fleshed out the organization chart. By 1975, the transition was essentially complete. The structure known at that time, except for some latter-day modifications, still stands today.

During the period from the late 60's to early 70's, Jack Elliott, Otto Vogl and Jesse Hwa had a close personal and working relationship. This group, which Vogl called the triumvirate, provided much vision and leadership that transformed the informal working group in the early era into a modern functioning organization. The Division then entered into a period of expansion and strengthening of the infrastructure.

Expansion and Strengthening (1976-91)

By the end of the Transition and Growth Period (1975), the essential organizational elements of POLY that we recognize today were in place. From 1976 onward, POLY underwent continued expansion. Through the leadership of many outstanding Division chairmen, as noted later, and the support of many committees.

Fifteen additional new Committees were created (not listed in any special order):

- Biotechnology Secretariat
- Surface Science and Catalysis Secretariat
- Divisional Officers Caucus
- Workshops
- Hospitality Suite

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- Banquet
- Exhibits
- ACS/ECOM
- Historical
- Business Office
- Operations Manual
- Industrial Liaison
- Councilors
- Publications
- Library

Four earlier Committees, Charter Flights, Grants, Speaker's Bureau, and Professional Affairs, were phased out. While some of the new committees represent new directions and programs, most may be regarded as expansion, strengthening and building of the infrastructure. The development of these committees as well as the activities of some of the continuing committees that were created earlier will now be discussed according to appropriate topical groups. This discussion, in effect, describes the current principal activities of POLY.

Scientific Programs. POLY's scientific program, the main strength of the Division, expanded further in both direction and frequency. By 1990, the scope of POLY's program encompasses the following:

Programs during ACS National Meetings:

- General papers
- POLY symposia
- Tutorials
- Joint symposia with other ACS divisions, including Macromolecular Secretariat, Biotechnology Secretariat, and Surface Science and Catalysis Secretariat

Programs outside of ACS National Meetings

- ACS Regional Meetings
- Biennial Symposia
- Special POLY Symposia
- Topical workshops
- Joint symposia/workshops with non-ACS organizations
- International conferences

Programs Held During National ACS Meetings:

1. *General Papers and Symposia.* The Divisions of the ACS are responsible for the organization and presentation of technical programs in the area of their expertise at National ACS meetings. To this charge by ACS, POLY has fulfilled its duties since the founding of the Division in 1951. A strong technical program has remained POLY's

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strength for 40 years.

POLY's Program Committee is primarily responsible for programs at National ACS meetings. Traditionally the Committee is composed of a Chairman and a co-Chairman, with 15-20 members who are active research people themselves and who bring along with them, their personal knowledge of active areas of research and the people involved in them. At times, this Committee is a starting point for many younger scientists who wish to serve POLY in an area that they know something about. The strength of programming comes from the collective knowledge and foresight of these people, where timely symposia are planned 3 years in advance. Because of the large number (5-8) of symposia at each ACS meeting, POLY has a constant flow of timely research for presentation. Researchers also use POLY as a vehicle to interact with others having a similar interest. Hence, this manner of interaction, via symposia, provides the opportunity, particularly to younger contributors from both industry and academic, to get started and involved in interacting with their peers in POLY sessions at ACS meetings. When one integrates this process in a large variety of topics over 40 years, it is not difficult to understand that scientists flock to POLY as a medium for and focus of their scientific activity outside of their own laboratories. This constant in-flow of people and their scientific knowledge provides the basic strength of POLY and the value of the Symposia documents - the Polymer Preprints.

POLY also provides a forum for individual, unsolicited papers which does not fit any symposium. Hence, the opportunity to present general papers is a tradition that POLY has maintained throughout the years. In recent 15 years, the number of general, non-symposium papers has grown considerably. The task of finding meeting rooms and identifying session chairmen, etc. has likewise become increasingly difficult. In 1975, at ACS's request, Program Chairman Bill Culbertson started the first Poster Sessions for POLY. Later, in 1980, Dick Ikeda, as Preprints Editor, who then looked after general papers, formalized Poster Sessions for a portion of the general papers as Special Topic papers during the national ACS meeting. The poster session took place between 5:30 7:30 p.m. This format of programming and presentation has been very well received as it has given the session authors and attendees alike an efficient and personal way of scientific interaction, without setting limits to the number of such poster papers that can be presented. The poster papers are fully included in the Preprints.

Besides the planning and presentation of the final technical program at each national ACS meeting, another aspect of the work of the Program Committee, which is not so visible, is the pressure and discipline that accompany the collection and preparation of material which must be forwarded to ACS national office and the Preprint Editor by certain deadlines. Such material include abstracts, preprint manuscripts on special papers, author cards, preliminary and final programs. In recent years, there have been over 300 papers presented at each national meeting. The job of timely receipt of a large volume of documents from the symposium chairmen and individual authors, all in proper form meeting the publication standards of Preprints, requires a smooth modus operandi established by the Program Committee and the Preprints editor so that the authors and symposium chairmen know and conform strictly to POLY's requirements. The end result that consistently high-quality Preprints are published on time year after

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year attests to the skill and diligence of particularly the chairmen of the Program and Preprints committees. Recently, C.W. Frank and A.D. English, as co-chairs, further advanced the operations of the Program Committee. A 20-page section on Preprints and Program in the 1989 edition of POLY's Operations Manual represents the know how of putting on first-class programs and preprints at national meetings.

2. *Tutorials.* As it has been the tradition of POLY to present programs of interest to scientists from both the academic and industry, the Program Committee was constantly aware of the need to strive for a balance in programs. One innovative approach in this regard, advanced by Carl Wooten, then Chairman-Elect of POLY, at the Program Committee meeting in Las Vegas, 1980, was to present state-of-the-art tutorial lectures at a level targeted for an average B.S. or M.S. type attendee. This would encourage industrial sponsors and managers to approve more people from industry to attend POLY sessions as such tutorials would be considered a beneficial broadening or re-education experience for their employees.

The first two tutorials were experimentally presented at the Fall 1981 ACS meeting in New York on the Sunday afternoon prior to the meeting so that the lectures would not interfere with the regular programs. The topics were Polymer Crystallinity by Phil H. Geil and Rubber Elasticity by Jim E. Mark. The attendees received lecture notes and the sessions were very well attended. With this encouragement, 3 more sessions of what is now known as the "Polymer Science and Engineering Lecture Series" were scheduled for the next ACS meeting in the Spring of 1982. One fringe benefit not fully appreciated in the beginning was that the series also allowed many experienced scientists not only from the polymer field, but also from other Divisions and disciplines, to broaden or reinforce themselves in topical areas that they are not as strong in. Through this free educational program, POLY has further broadened its services to its members and the scientific community. The tutorial program format has later been adopted by other divisions by following POLY's lead, but they charge a fee for attendees. POLY continues to offer tutorial seminars without an extra charge or a fee.

By the Spring 1991, the 28th session of the series will be scheduled. The average attendance at some of the more popular lectures has been 400-500.

The tutorials, also at times, some short courses, have been supported by funds from the Industrial Sponsors Group (discussed later).

3. *Joint Symposia with other Divisions or Societies.* As polymer science does not stand alone, POLY often sponsors symposia jointly with other ACS Divisions so that the technical strength of two or more sister Divisions is pooled together. In such instances, POLY may be a prime or co-sponsor, the difference being that POLY would preprint the paper if it were the former.

The most successful and semi-formal form of co-sponsoring symposia, as initiated in 1973 and described in an earlier section, is via the Macromolecular Secretariat. This tradition of planned programming has not only been maintained to date, but also copied by other groups of ACS Divisions. In 1988, within the ACS, the Biotechnology Secretariat and the Surface Science and Catalysis Secretariat were born and POLY, via its two new corresponding committees, has supported the programming activities of these two new additions.

Programs held outside of ACS National Meetings:

1. *ACS Regional Meetings.* At most ACS Regional Meetings, members of POLY organize mini-sessions on Polymers to give speakers and attendees from the region an opportunity to participate in scientific communication. These smaller polymer programs are supported by POLY informally through the regional membership.
2. *Biennial Symposia.* The recent tradition of holding Biennial Symposia in attractive resort-like locations continued during the Expansion and Strengthening Period. The meeting format continued to be one of Gordon-Conference style, with a variety of topics and ample opportunity for discussion. During such Biennial meetings, the official Polymer Division award ceremony has been held since 1976.

In 1980, at the occasion of the Biennial Symposium in Palm Springs, CA, POLY and the Society of Polymer Science, Japan held the first joint U.S.-Japan Polymer Conference, with POLY's Bill Bailey and SPSJ's Prof. T. Tsuruta as co-chairmen, featuring 24 invited speakers and a baseball match. It was very memorable.

3. *Special and Joint Symposium.* At times, there has been a need to schedule a symposium on a special topic outside the National ACS meeting. Such need may stem from the nature of the topic itself, the energy of the organizers, international participation, overcrowding of regular ACS POLY program, etc. Over the years, there have been an average of at least two or more per year of such outside symposia which may be sponsored entirely by POLY, or with another scientific society, or be held in the U.S. or in a foreign country. Such activity lends additional scope and flexibility to POLY. Once in a while, some organizers were too ambitious on the importance of their specialty and had to cancel announced programs because of lack of response.
4. *Topical Workshops.* During the Fall 1978 ACS Meeting in Miami, a few POLY officers, including Stan Israel, Eli Pearce and Joe Salamone, lay lazily on the sandy beach, admiring the beautiful surroundings. The idea of having a special symposium to do with polymers and water jokingly came about in the conversation. As the discussion drifted toward format, the concept then evolved, was a single-topic meeting different from a structured symposium in format, but similar to a biennial in a leisurely environment. The group should be smaller, composing of the active researchers themselves, and the discussion should be freer including unfinished work and speculations. This type of meeting might satisfy another special segment of POLY membership. A formal program proposal, formulated and organized by Joe Salamone and Eli Pearce, was made at the Gordon Polymer Conference in 1979. Ed Vandenberg, then chairman in 1979, gave the go-ahead.

In November of 1979, what is now known as Topical Workshops, entitled "Biomedical and Water Soluble Polymers", was held in Bermuda with Salamone and Pearce as co-chairmen. The results were gratifying. Two years later, the second one on "Maximizing Polymer Properties" was organized by Norman Gaylord and was held in White Sulphur Springs, West Virginia. The continued success of these workshops resulted in the

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formation of the Workshop Committee with Norman Gaylord as Chairman, who has since been succeeded by others.

In subsequent years, the format of Topical Workshops drifted away from that originally conceived. Now it is more structured, with multi-speakers, like a Biennial. Furthermore, many other independent Division sponsored or co-sponsored symposia or conferences that were held outside of National ACS meetings are now also called Topical Workshops.

Intersociety and International Activities. Since polymer science is universal across national boundaries, POLY has been very successful in the international arena, as witnessed by frequent joint intersocietal and international conferences and activities. However, in terms of organizational approach to such activities, there has been much evolution and restructuring from one committee to another. At times, it has been confusing to many.

As described earlier when the International Committee was first formed in 1970, the charge was to develop international contacts and membership. Then in 1975, the International Committee was limited to international membership promotion, while the new Intersociety Relations Committee looked after intersociety relations and programs. By 1982, the International Committee was renamed to International Membership Committee. In 1984, the original Intersociety Relations Committee was split into two separate pieces: the Domestic and Foreign Intersociety Relations Committees. Then, in the following year, the term domestic in the Domestic Intersociety Relations was dropped while the Foreign Intersociety Committee was renamed as Foreign Affairs. By 1989, the International Membership Committee was dissolved and absorbed by the existing Membership Committee while the Intersociety Relations Committee was subdivided into four subcommittees: APS, SPE, AIChE, and IUPAC.

In spite of many name changes, the substance of international activities was not hurt, and in fact it continued to prosper. The notable achievement comes from the Foreign Affairs Committee which had been headed by Otto Vogl up to 1990. In 1990, Joe Salamone becomes chairman.

The charter of the Committee is to develop scientific and close working relationships with similar international societies devoted to polymer science. To achieve the goal, besides having international recognition, the Committee should have many years of continuity in interacting with other societies in order to develop contacts and ripen the relationship. Also, experience in international protocol and sensibility to others' feelings are important in this work. In this regard, Vogl and his Committee, composed of delegates from other countries, have succeeded in this assignment.

The Committee has had some ongoing dialog and agreements of minimum cooperation with some European polymer organizations such as those from Italy, France, Scandinavia, UK, Austria, etc.

In the Pacific Basin area, the first step in some formal cooperation was the treaty between POLY and the Society of Polymer Science of Japan.

Later, the next major visible achievement is the formation of Pacific Polymer Federation (PPF).

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After several years devoted to inception, preliminary discussions, and internal approvals from each society, PPF was formally formed in 1987 by three founding organizations: POLY, Society of Polymer Science (Japan), and the Polymer Division of Royal Australian Chemical Institute, which formed the PPF Council, with Vogl as its first President. This was a very prestigious achievement for POLY and an acknowledgment for Vogl's leadership. In 1989, five new members from appropriate polymer organizations of Canada, South Korea, Malaysia, New Zealand, and the People's Republic of China were added to the Council. The first major activity of the PPF was a Pacific Polymer Conference held in Maui, Hawaii in December of 1989. It was very successful.

In all these international and intersocietal activities, Vogl functioned as a *de facto* senior Foreign Minister managing the foreign affairs of POLY.

Industrial Liaison. It all started with a simple idea. Since polymers are so pervasive and many chemical companies are deeply involved in the science and business of polymers, why can't they play a more active role in supporting polymer science? After all, industries are directly benefited by a strong polymer-related organization such as POLY. So why can't POLY ask the major companies to contribute at least a token sum, such as \$500 per year, to support certain activities, particularly education in polymer science, that might be appealing to the companies? With this extra funding, POLY could implement certain worthwhile educational programs which would be of long-range interest to the companies that hire well-trained polymer scientists.

The idea received encouragement when Eric Baer, as Chairman of the Grants Committee in 1978, succeeded in securing a long-term grant from Dow Chemical to fund POLY's new Division of Polymer Chemistry Award. The Officers, including Bill Culbertson, Joe Salamone, Ed Vandenberg, and Eric Baer went into some serious planning. The net outcome was the proposal to form an Industrial Sponsor's Program in which industrial firms would be approached by the Industrial Liaison Committee of POLY to donate some money and form an Industrial Sponsor's Group (ISG). The sponsors would also send representatives to participate in the ISG activities. In some sense, ISG was an extension of the Corporate Associates idea that Eric Baer advanced earlier.

The Industrial Sponsor's program got a big push in 1979 when Ed Vandenberg became Chairman of the Industrial Liaison Committee. Vandenberg, more than any other individual, championed this activity tirelessly and is largely responsible for the accomplishments to date.

In 1979, 77 letters to solicit support went out to large industrial companies. By February 1980, 19 companies joined the Group, each contributing \$500. That was a most rewarding start. Over the next 6 years, POLY received about \$70,000 in dues from the sponsors, not including \$35,000 from individual company contributions for specific programs and awards. Of the total sum, over 80% was used on educational programs. Because of this extra source of funding, an avalanche of educational activities, carried out by the Education Committee, have propelled POLY into dazzling heights in polymer education.

The work of the Industrial Liaison Committee did not stop here. It took continued effort to reach out and enlist more industrial companies. By 1989, the number of sponsors had grown to 35 and

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the annual contribution was increased to \$1,000 each. Also, the Committee arranged to have an annual conference, during an ACS meeting, whereby representatives of the ISG and POLY could have a dialogue, in the form of an open panel discussion, on selected subjects of common interest. That annual event, started from the beginning and continued to the present, has become a tradition. For example, in 1989, the topic was "Polymer Recycling: The Key Issues." Video tapes were made and available to others so interested. Some members of the ISG went beyond providing annual contributions; they opened up their labs to allow summer employment in order to support Education Committee's educational programs.

Education. While the Education Committee is one of the oldest appointed functional committees of POLY, its activities did not flourish until during the current era of Expansion and Strengthening. There were many reasons, the most important of which is the slow and multi-facet nature of the educational process and the continued effort required to make progress. From the late 60's to the early 70's, the Education Committee, under Eli Pearce, steadily but slowly made some progress on projects such as inclusion of Macromolecular Chemistry as a separate category within the NSF, promoting polymer courses at U.S. universities, making and distributing H.F. Mark's lectures, preparing bibliography of polymer texts and monographs, polymer laboratory manual, etc.

In 1974, two important events happened. Bill Bailey, as President of ACS, appointed Eli Pearce as a member of the ACS Committee on Professional Training (CPT) and Charles Carraher as chair of the Polymer Test Committee. Also in that year, at Atlantic City, Eli Pearce, Charles Carraher, Joe Salamone and Stan Israel formulated and worked through the concept of a Joint Polymer Education Committee (later called Poly Ed) from representatives of POLY and the then Division of Organic Coatings and Plastics, since both divisions were interested in polymer educational matters. These two events provided leverage and momentum to the work of this committee.

By 1978 Poly Ed had grown to about 20 members. Several significant milestones were accomplished: (a) the first ACS Standardized Exam in Polymer Chemistry was published; (b) an entire issue of CHEMISTRY was devoted to polymer chemistry; (c) the 1978 edition of "Undergraduate Professional Education in Chemistry: Criteria and Evaluation Procedures", published by CPT, stipulated that advanced courses in polymers should be included in undergraduate core curriculum and that the basic elements of polymers should be taught in all undergraduate courses. Later, Shalaby, who continued on CPT in Pearce's place, was influential in the development of the new degree -- a B.S. in Chemistry with Polymer Science option.

Up to the late 70's, most of the work of the Committee largely was associated with targets or institutions somewhat familiar with or sympathetic to polymer chemistry. When funding from ISG became available in 1980, the Committee under Chairman Guy Donaruma, who was a prime-mover, initiated a dazzling array of accomplishments which have continued to the present. Many of these new activities were now targeted toward the more difficult areas of bringing polymer education to communities unfamiliar with polymer.

By 1987, the array of activities had become so numerous and diverse that a reorganization of the large Committee took place under the leadership of Charles Overberger and Charles Carraher.

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The realignment more clearly defined areas of responsibility so that this large group could function more efficiently.

- o Chairmen (C.G. Overberger, POLY; C. Carraher, PMSE)
- o Advisors (from Industrial Liaison Committee)
- o Vice Chairman and Director
- o Secretaries
- o Polymer Education Newsletter Editor
- o ACS Committee on Professional Training Representative
- o Associate Directors (4)
 1. Industrial/Government Professionals
video tapes, short courses
 2. College/University Professionals
video tapes, core courses, visitations, alternate methods, academic sabbatical, Polymer Curricular Award, text book author committee, speaker's bureau
 3. College/University Students
ACS exams, literature, surveys, summer undergraduate scholarships, summer employment, polymer history, Undergraduate Polymer Chemistry Awards
 4. K-6/Jr./Sr. H.S. Students and Teachers
K-6 new initiations, polymer science in secondary education, Jr./Sr. High and initiatives, NSF proposal

Some of the activities of the Education Committee are listed below chronologically. Many of the items have continued up to the present. Many of the programs receive financial support by the Industrial Sponsor's Group.

- 1980
 - o Distributed survey on the utilization of polymer chemists in industry and all U.S. chemistry departments (abridged).
 - o Inaugurated the first Proctor and Gamble Co. summer scholarship program for undergraduates to work on a polymer project (later supported by ISG)
 - o Published the first issue of Polymer Education Newsletter (PEN). (The circulation was 1,700 in 1980 and over 3,000 in 1989.)
- 1981
 - o Published Introductory Polymer Science syllabus
- 1982
 - o Initiated faculty visitation program to develop polymer science courses in universities which have interest in establishing a polymer chemistry curriculum
 - o Collected and reported polymer sample availability from over 50 companies
- 1983
 - o Developed and distributed core course report
 - o Summer work for teachers in a polymer-oriented company for training in polymers
- 1984
 - o Proposal to NSF to support polymer chemistry workshops for high school teachers
 - o Undergraduate summer employment program in polymer science

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- o Expanded preparation and distribution of articles, and books related to polymer history
- o Letters to textbook authors and publishers promoting the inclusion of polymer subjects

1985 o Program on polymer education in secondary schools

- o Inaugurated a Polymer Curriculum Development Award

1986 o Increased activity in educating K-16 in polymer awareness

1987 o Organic Chemistry Certificate Award

- o Travel grants to undergraduate students to a polymer related meeting

1988 o High School Teacher Award

1989 o Formation of Joint Societal Science Education Committee

Many of the listed activities were manned by sub-committees and many of them are still concurrently carried out today.

In conclusion, during the recent decade, POLY, via its Education Committee, has taken the leadership of going beyond the existing polymer community and institutions and bringing polymer education to the young and the uninitiated. The process of cultivating the roots to promote future fruition, which may sound self-preservation, is nevertheless a noble mission that POLY, as a nationwide, impartial institution, can best serve. One hopes and can envision that given another decade of effort to strengthen the educational infrastructure, POLY may shine, not only for its traditional prestige in technical programs and publishing Polymer Preprints, but also for its leadership and services in polymer education worldwide.

Membership. Along with the Program and Education Committees, the Membership Committee, in the 60's and 70's, was one of the 3 largest committees of POLY with over 20 members. In 1978, there were 20 Regional co-Chairman and 4 Subcommittees: Local ACS Section and non-ACS polymer-oriented groups, graduate students and post-doctorated fellows, young industrial polymer scientists, and polymer science and technology authors.

In 1976, at the beginning of the present Expansion and Strengthening Period, the membership count was 3870 members plus 397 affiliates. By May 1989, the count was 7,374 members and 647 affiliates. The affiliates are mostly foreign scientists who are not ACS members, but wish to receive primarily Polymer Preprints.

The Membership Committee periodically conducted surveys among POLY members to sense the pulse of the membership. In 1985, led by Committee Chairman, K. Wagener, a letter survey was made among POLY's new members. Out of the 300 responses, 210 indicated interest to serve POLY. The top 5 valued-services to new members, also interpreted as reasons for their joining POLY, were: Preprints, Symposia in National ACS meetings, topical workshops, polymer education workshops and Newsletters. In 1989, another mail survey, completed under Chairperson Dana Garcia, showed the following (with 305 responses, or 4.1% of POLY membership):

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o An overwhelming majority, over 85%, said that they have been ACS members for 8 to 12 years, have job responsibilities primarily in polymer science, find symposia and Preprints useful and POLY serving their professional needs.

o In the past 5 years, these members have gone to national ACS meetings from 1 to 4 times, spending 30-45% of time in POLY symposia.

o About a third of the respondents indicated interest to serve on one of POLY's committees. (This finding was disappointing to some, but encouraging to others.)

Since the mid 80's, the size of the Membership Committee has been reduced to only one person.

A separate activity related to the Membership Committee is the Membership Booth which was initiated 20 years ago. This Committee has continued to labor hard to provide useful service at both National and non-ACS meetings. In every occasion, the Committee recruited new members and sold many Preprints.

Preprints and Circulation. At a very nominal cost to POLY's members and affiliates, Polymer Preprints remains one of the two most important products of POLY. The production and its distribution are no easy job, as attested by the fact that relatively very few ACS Divisions know how to produce and market a similar product. It takes years of experience and sustained dedication on the part of a few people who master such an operation. Bill Culbertson, as Editor, has made outstanding contributions in this regard in POLY's history.

In 1976, Chairman Fred Bailey appointed Dick Ikeda and Pat Cassidy as Preprints Editor and Assistant Editor respectively. The cost of printing and mailing the "thick book" had continued to escalate. Cassidy later uncovered potential cost saving which required a change in the size and format of the Preprints. Following a membership survey on this matter, the Executive Committee in 1979 decided to make the major change of the format and size of Preprints from 5.5 by 8.5 inches to 8.5 by 11 inches, with 2 long vertical columns per page and an average of 2 pages per article. The change took place in 1980. There have been some other changes associated with plastic wrap, labels, adhesives, etc. in the first few years of production, but the format and packaging have been successively improved.

In 1982, Bill Culbertson succeeded Ikeda as the Preprints Editor, and has served in that post up to the present. With the support of his Committee, Culbertson has made outstanding contributions in this regard in POLY's history. The production and sale of Preprints, like other publications, has a business aspect. Because of increasing work load, the Editor's office has expanded to include 3 other coordinators to handle (a) news/announcement information, (b) general (special topics) papers and (c) financial/advertising as services to the member readership.

To illustrate, the two Vol. 30 (1989) issues incurred the following statistics:

Copies	\$ Cost	Cost/ Vol. Produced	\$ Cost /Issue	Page
(1) 607 9,139	52,612	5.75	0.0095	

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(2) 648 9,358 58,736 6.27 0.0097

The total cost of \$111,375 which includes shipping, represented a 10% increase from the previous year, largely from increase in the number of articles, mailing and paper costs. This cost amounts to about half of all POLY expenses and is not compensated from the dues alone. Fortunately, POLY has revenues from other sources, principally from the sale of Preprints to libraries, to compensate for the deficit. That brings us to the functions of the Circulation Manager. Since Preprints were also sold principally to libraries, the task of handling subscription orders, payments, single issue orders and requests, missing copies, air-mail deliveries, surplus copies, etc. was administered by the Circulation Committee (of one), created in 1969. In 1979, exactly 10 years after he accepted the position of Circulation Manager, Bob Saxon, one of the least-known strong contributors to POLY, completed his faithful service. Library subscription receipts tripled from \$4,000 to \$12,000 during that decade and contributed significantly to the financial resources of POLY.

Fred Dammont succeeded Saxon in 1979 and likewise has faithfully and aggressively served this Committee up to the present.

Since the work content has expanded, a separate Committee on Library Subscription was created in 1988 to handle just the library aspects. The number of library subscribers in 1989 was around 600 and the income was around \$50,000.

Notable Events and Activities

1. Awards

Ever since the 60's, ACS has administered an annual Award in Polymer Chemistry which was supported by the Witco Chemical Corporation Foundation. For many years, it has been the only polymer-related award that POLY was associated with. Traditionally, during the spring ACS meetings, on Monday morning and with no competing sessions, whenever possible, the Witco Award Symposium is scheduled whereby the awardee gives the last award winning lecture. More recently, the award has continued, but is now sponsored by the Mobil Chemical Company. Later, ACS has administered another polymer-related award, called the ACS Award in Applied Polymer Science, sponsored first by the Bordon Chemical Company, and more recently by the Phillips Petroleum Company.

POLY did not have its own award until 1976, when the Award Committee, under Eric Baer, succeeded in receiving funding from the Dow Chemical Company. In that year, POLY instituted its own first biennial Division of Polymer Chemistry Award to "recognize outstanding research and leadership in polymer science." The first recipient was Prof. Paul Flory and the ceremony took place at the Biennial Symposium where Chairman Fred Bailey handed out the first award.

In 1981, Dow again supported another biennial award, called the Creative Polymer Chemistry Award, "to recognize and encourage accomplishments and/or innovation of unusual merit in the field of basic or applied polymer chemistry by younger scientists." POLY administered the award and the first recipient was L.J. Fetters.

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In 1982, a biennial Polymer Education Award was created "to recognize, encourage and stimulate outstanding achievements by an individual in promoting undergraduate and/or graduate polymer education." The program, administered by POLY, was first supported by Proctor and Gamble Company and latter supported by funding from the Industrial Sponsors Group. The first recipient was H.F. Mark.

In 1983, POLY initiated its own annual Distinguished Service Award to one or more individuals "in recognition of their outstanding contributions to the Division of Polymer Chemistry." The first recipients were E.J. Vandenberg and Joginder Lal.

The last three awards were given during national ACS meetings. All of the above awards are administered by the Awards Committee. Tables listing the awardees of the 4 awards are shown in the Appendix.

As described elsewhere, there are several other education related awards administered by the Education Committee.

2. Historical

As POLY matured, the element of history now became important. An early Archives Committee (of one person) created by Otto Vogl in 1974 resulted in the publication of the 25 years of POLY history by Bob Ulrich in 1976. Shortly afterwards, that Committee disappeared from official POLY committee listing. In 1979, a re named Historical Committee was appointed. For the next 10 years, essentially nothing was done by this Committee.

After Hwa was appointed to this Committee by Dick Ikeda in 1987, a major project to update the history of the Division of Polymer Chemistry (not history of polymer science) was started in 1988, and completed with the publication of this History at the occasion of the celebration of the 40th Anniversary of POLY in 1991.

3. Special Presentations

In an effort to positively influence the financial support of both government and industrial sponsored polymer research, Chairman Jim McGrath in 1986 testified before the House Congressional Committee on Science and Technology.

Jim Economy, Chairman in 1985, suggested the idea that, in addition to interfacing with other scientific organizations, POLY should also let the financial community know about polymers and its value and contribution in U.S. economy. In 1986, after sufficient preparations were made, McGrath and his team, including Economy, gave a presentation to the financial community in New York, which emphasized the economic opportunities and benefits of long-range polymer research.

4. In Memoriam

It is with great sadness to record that some former Officers of POLY have passed away. The notables are, not in any chronological order:

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T. Alfrey, Jr.

W.J. Bailey

A.M. Bueche

P.J. Flory

T.G. Fox

C.S. Marvel

F.R. Mayo

M. Shen

J.K. Stille

A.V. Tobolsky

Management and Operations. Early in the 70's, it was already recognized that the expanding Division should be run like a business. Although it is a voluntary scientific organization, one can still conceive it in terms of an enterprise involving a management team, product and services, cost, marketing and net return. From this point of view, one can examine the operational aspects of POLY during this period of Expansion and Strengthening.

1. Organization: In 1975, the Executive Committee approved a proposal by Jesse Hwa, that, to strengthen the tie of POLY's members to the decision-making body, a new post, called Member-at-Large, be created by direct voting from the membership. This added person will be a new member of the Executive Committee. Consequently, by general election in the fall of 1975, Paul Lindenmeyer was the first person elected to that office to take effect in 1976.

In 1977, Fred Baily, then Chairman, felt that as work in POLY expanded, POLY could benefit if the Chairman and Vice Chairman posts be expanded to a 3 person succession: Chairman, Chairman Elect and Vice Chairman. This would require a 3-year tenure of the elected top officer, thereby allowing the incoming officer to acquire 2 years of job exposure before taking office as Chairman. This concept was approved and put into practice beginning in 1979, after POLY's bylaws were amended accordingly. Using the grid system, the incoming Vice Chairman immediately became responsible for several committees.

The candidates for election to the post of Vice Chairman are nominated by the Nominating Committee, the Chairman of which is a fresh person every year to avoid inside breeding. As a tradition, the Committee tries to alternate candidates from the academia and from the industry, whenever possible. At times, the Committee found it more difficult to identify qualified candidates from the industry. There are no fixed criteria whether or not the candidates have had prior working knowledge of POLY by serving on some of the committees. In POLY's history, all Chairs have made contributions, big or small.

By 1990, there were 11 members in the Executive Committee, 31 appointed committees and many other subcommittees. The largest committees were Education and Program. The total number of people involved in all the committees exceeded 100. The organization in 1990 is shown in the Appendix.

The Board, the Executive Committee and certain committees meet twice annually during the National ACS meetings in separate sessions. Oral and written reports are made and minutes are

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later distributed. In addition, the Executive Committee sometimes meets a third time, such as during the Gordon Conference or an outside symposium.

2. Financial

In 1976, the year began with a carry-over of \$8,100 from the previous year. Since that time, the financial position of POLY steadily improved due to several major factors: allotment from ACS, surplus from operating workshops, grants and industrial awards, and the sale of Preprints. The biggest single expense is Preprints, the cost of which equals half of POLY's income and continues to escalate each year. With constant effort to monitor expenses, the Preprints Committee has been able to hold down the cost of producing and delivering Preprints.

By 1989, POLY had an income of \$454,000, of which only 16% came from membership dues. Other major categories of income were grants and donations (including industrial sponsors) 21%, workshops 22%, publication (including library subscriptions) 22%. The total expenses of \$415,000 included speaker costs 14%, national meetings 22%, workshops and other meetings 30% and publications (including Preprints) 34%. Including a surplus of \$39,000 that year, the carry-over to 1990 was \$358,000. The Industrial Sponsors funding, a separate account, has been largely earmarked for educational and other polymer development activities. As required by ACS, the Treasurer submits an annual Treasurer's report to ACS's Council Committee on Divisional Activities.

The current dues for members, student and affiliates are \$10, \$5, and \$20, respectively.

3. Arrangements and Publicity

POLY interfaces with the outside world through several offices and channels, in addition to certain functional activities, such as education and Preprints, whereby contacts with the outside are made through their own committee members.

a. Secretary - The Secretary's office is the principal interface with the staff of ACS' Department of Meetings and Expositions. All arrangements for meeting and conference rooms and delivery of banners, posters, Preprints, etc. are made through that office.

The Secretary takes and issues minutes of the Board and Executive Committee meetings, edits and issues the bi-yearly Newsletters, and makes annual Secretary's report to ACS. Besides these official duties, there are still a myriad of chores that the Secretary unavoidably has to do.

b. Banquet - POLY traditionally holds its social and a dinner on the Wednesday night during each National ACS meeting. To manage the details of arranging for the banquet, a Banquet Committee was created to look after such activity.

c. Hospitality Suite - As the financial standing of POLY improved, the Executive Committee opted to initiate a "Hospitality Suite", on the Sunday night (5:00 - 8:30 p.m.) preceding the ACS meeting to provide an opportunity for the membership to meet and talk to POLY's staff. There were refreshments. It was an instant success; the attendance was overwhelming. The Committee members made purchases, served refreshments and cleaned up. This event has since been a tradition whereby many members flock to the suite and invariably could meet someone they

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know. Formerly this committee was called "Local Arrangements", and recently "Social Events." Its present name reflects its current activity.

d. Exhibits - In 1987, a new Exhibit Committee was formed to solicit exhibitors to complement certain workshops. The first exhibit took place at the occasion of the workshop on "High Performance Composites", held in Jackson Hole, Wyoming in March of 1988.

e. Public Relations - The work of the old Public Relations Committee expanded as POLY generated more programs and activities, and publicity targets became more numerous. In recent years, activities of this Committee have been in 4 segments: posters and bulletins, awards and nominations, articles and advertisements, special events. This committee, now headed by Tom Pacansky, has greatly expanded the visibility of POLY and POLY programs to the outside world.

f. Publications - The Committee, headed by D. Gerbi, handles the contracting and the publication of books based on material presented in POLY-sponsored or co-sponsored symposia. Two frequent publishers that this Committee uses are ACS Department of Publications (Book and the ACS Symposium Series) and Plenum Publishing Co. where POLY members can get significant discounts.

4. Business Office

The business of POLY is conducted by the officers and the committees all of whom are volunteers spending their own time and using the services of their employers. As the activities of POLY grew and the financial resources became more available, Joe Salamone, Chairman in 1982, proposed to establish a paid Business Office to handle some of POLY's activities. POLY was fortunate to have Jane Vogl as its first Manager, starting in 1983, with her office located in the Polytechnic University in New York. The initial activities of the Office concerned with membership list maintenance and change, royalties and contracts, interaction with Secretary and Program Committee. Later, as outside symposia and workshops became more numerous and the educational programs expanded, considerable time of that Office was devoted to the administration and handling of many chores. Also, the membership used the Office as a one-stop "Information Center" to help them with a large variety of inquiries. The work load of that Office has greatly increased since its inception. The Office also is a depository of old documents, excess reports and files of earlier officers. Jane Vogl was succeeded by Judith Pearce in 1989. In 1990, the office was moved to the Virginia Polytechnic Institute and State University, with Diane M. Morrill as Manager.

5. Operations Manual

As POLY expanded, more jobs opened up and inevitably there was a normal degree of turn-over in personnel. In some committees, new comers got on-the-job training by others and acquired the knowledge to function in the posts they serve. In many other instances, the newcomer had to learn from scratch. To smoothen the transfer of jobs from one to another, a formal Committee on Operations Manual was formed in the mid-70's to collect and publish the objectives and the modus_operandi of every office and committee. The manual was a compilation of job descriptions prepared by each office holder who knew his/her job the best. It was not an easy task to do because the mission, scope and activities of several offices and committees continued to evolve. It took several years of hammering away before a completed Operations Manual was

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made available to all office holders. This manual is invaluable to newcomers, as intended, and greatly smoothens the operations of POLY.

6. Bylaws

To accommodate organizational and operational changes that allow greater efficiency and effectiveness of POLY, POLY's bylaws were periodically revised. Recent revisions were made in 1975, 1977, 1979 and 1987. Jim Kinstle has served this Committee faithfully for many years.

7. Logo

In 1976, the Executive Committee decided to acquire a logo for the Division. Secretary Ed Vandenberg took on the assignment. Dick Gilbert, Chairman of the Membership Committee, suggested that why not ask some students at the School of Design of North Carolina State University where Gilbert was located to compete in designing a logo for POLY and budget a \$200 prize for the top 3 winners. The idea was well received and later implemented. The top entries were later voted upon by the Executive Committee, resulting in the selection of the present logo.

8. ACS/ECOM

It is perhaps fitting to record that the latest new activity of POLY is to join the electronic age. In 1989, ACS began experimenting on an Electronic COMMunication System which, as the name says, is aimed at electronic mail communications, various databases (e.g. directory of graduate research), news bulletin boards (e.g. meeting deadlines, meeting programs, C & EN concentrates etc.). POLY, under Secretaries Ann Salamone and Frank Blum, was the first ACS division with an active program to support the ACS initiative. POLY's part in the system would be at the "submenu" level, which would allow POLY to access information such as ACS program information, POLY news, sending messages to the business office, change of address, etc. In 1990, Tom Ford was appointed Chairman of this newest committee to develop the computer programming necessary to provide a user-friendly, initiative interface, as well as useful functionality. While this new activity is a start, it is a long way from the early days when POLY was founded 40 years ago.

Citizenship within ACS

As a unit of ACS, POLY has made increasing contributions over the years to the Society through the work of its Officers and Councilors. In this respect, POLY has been a solid citizen within the community.

1. Recognition by ACS as Outstanding_Division

As mandated by ACS Bylaws, the charge to a division is primarily in carrying out the scientific program of that division. It was very clear that by the 80's, the overall strength of POLY has been very robust and that fact did not get submerged without notice by others.

Hence, and certainly not by chance, POLY was awarded by ACS as one of the Outstanding Large Divisions in 1982. The criteria for that award were: quality of technical programs, administration and financial position, educational thrusts, interdivisional and intersociety interactions, membership growth, and overall improvement. This confirms all the progress and

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achievements that were described in the previous sections. The officers in 1982 were: Joseph Salamone (Chairman), Norbert Bikales (Chairman Elect), Guy Donaruma (Vice Chairman), Shalaby Shalaby (Secretary), and Stan Israel (Treasurer).

The recognition did not stop there. In 1984, POLY was again awarded as one of the Outstanding Large Divisions by ACS. POLY was cited for its increased membership, outstanding technical programs at National ACS meetings including POLY's free tutorials, excellent workshops, intersociety activities, Biennial Symposium, participation in PAC Chem, and publications, especially Polymer Preprints. The officers in 1984 were: Guy Donaruma (Chairman), Jim Economy (Chairman-Elect), Jim McGrath (Vice Chairman), Ann Salamone (Secretary), and Stan Israel (Treasurer).

In 1990, it was announced that, for the third time in this decade, POLY was again awarded the Outstanding Large Division by ACS in 1989. Only one other division besides POLY has shared this honor for winning three times. The officers in 1989 were: Stan Israel (Chairman), July Bentam (Chairman-Elect), Ray Ottenbrite (Vice Chairman), Ann Salamone (Secretary), and Bill Daly (Treasurer).

In 1990, POLY has also become the first division to receive the Phoenix Award from ACS for outstanding contributions to the 1990 National Chemistry Week.

2. What's in a Name?

POLY and the then Division of Organic Coatings and Plastics (ORPL) were very close, and are still now, in divisional relationship and activities. But a small crisis developed in 1980, when that Division proposed to change its name, as they felt that ORPL no longer reflected accurately the current mission and the interests of that Division. ORPL initially proposed to change the name to the Division of Applied Polymer Science: Plastics, Coatings, etc.

POLY was sympathetic to ORPL's desire to change its name, but objected to that particular selection because the issue touched upon a basic premise that POLY had existed upon. POLY's position, as articulated by Chairman Carl Wooten in 1981, was that: "Our main concerns center around what is meant by applied science and by our belief that the members of our society will come to believe that our division is not interested in applied polymer chemistry. As you members are aware, we cover many subjects that could be called applied chemistry. Industrial polymer chemistry, whether it be long or short range, or knowledge oriented in its objective is called applied by many people if it is meant to be useful. We now have programs designed to serve the needs of the industrial chemist and we will continue to do so."

Initially neither the POLY and ORPL officers nor the ACS Committee on Divisional Activities could resolve this matter. Later, after having made a serious effort to search for alternate names, ORPL submitted a second proposal of Division of Polymeric Materials: Science and Engineering (PMSE). That was a very fine selection and won full support of POLY. This small crisis was resolved and the two divisions continue to cooperate in many areas.

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3. Contributions of Councilors

Because of the role of Councilors in the work of ACS is not well known, some brief background is first provided here.

Similar to the U.S. government in some respects, ACS is governed by the National Officers, the Board of Directors, the Council, and supported by a large staff. The Council is composed of Councilors who represent local sections and divisions. Up to 1977, each division sent two Councilors to the Council, much like sending U.S. Senators to the Congress. As mandated by ACS Bylaws, these division Councilors are elected directly by the division membership, not appointed by the officers, and sit in the Executive Committee of each division. A large amount of the work of the Society is done by the Council through its many standing and appointed committees. These working committees are very influential, as intended, and they contribute to the operations and governing of the Society. Since the number of Councilors greatly exceeds the number of posts available in the Society Council Committees, there is often a waiting list of interested Councilors who wish to get involved in the committee activities. It usually takes a few years for a freshman Councilor to know his/her way around the Council, much like what a politician does, in order to be elected or appointed to a working committee. For this reason, divisions often vote for the same Councilors for many years in a row in order to enable them to mature and contribute to the Society's governance.

Traditionally, POLY's Councilors were selected from Past Chairman or other past senior officers who have the time and experience to devote to both the governing of POLY via the Executive Committee and the governing of the Society. Some Councilors that are closely associated with POLY activities through their past or current activities can get elected, not through POLY, but by their local sections in which they are also active. There is, however, a constituency difference between a Councilor elected through a division and one elected from a local section.

The Division Councilor's activities in the Council or Council Committees pertain rarely to the interests of a specific division, because their concerns, such as Society election procedures, setting future ACS meeting dates, dues increases, etc., are broader societal problems. Yet, the Society's work has to be done and Division Councilors are part of that governing body.

With this background, POLY's Councilors have contributed their share, if not more, of effort in ACS activities.

Active involvement of POLY Councilors in ACS governing started with Ed Fettes (1966-1972). He gradually ascended and became Vice Chairman of ACS's Committee on Divisional Activities. He provided much leadership at that time, particularly in the area of coordination of program-scheduling among the Divisions for national meetings.

In later years, Bill Gibbs and F.E. Bailey also became Secretary of the Committee on Divisional Activities. Eli Pearce has served as Chairman of Council Committee on Nominations and Elections, and as an elected member of ACS's Council Policy Committee. In addition, many other POLY Councilors, including J. Kinsinger, J. Hwa, N. Bikales, etc., served in various Council Committees.

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4. Collective Action of Division Officers and Councilors

During the period 1975-1978, several events happened in the governing of ACS which pertain to the interests of all Divisions and which have since changed the Constitution and funding allotment to Divisions, benefiting the Divisions substantially. POLY Councilors at the time, Gibbs and Hwa, and in addition, F.E. Bailey, as an officer, played active roles in effecting those changes.

a. Greater Division Representation in the Council - It all started with a special study by A.D. Little, Inc., commissioned by ACS in 1974, to investigate and report on the "Structure, Governance, and Business Management of ACS." One of the several major recommendations in that report was: "with Divisions executing a major function within the ACS, the steps initiated in 1974 aimed towards providing them with more financial support should be strengthened. In addition, Divisions should be accorded more representation in the governance." That report touched a nerve among Division Officers and Councilors because up to that time, there had been general dissatisfaction among the Divisions. The Divisions maintained that since they had hitherto made significant contributions to the Society's scientific programs, they had not been accorded sufficient voice in the Council, financial support or influence in Society's policies.

At that time, each Division had a fixed number (2) of Councilors to sit in the Council. From the 27 Divisions, 54 Division Councilors represented only 12% of the total 447 in the Council. It was unsatisfactory to the Divisions.

What followed rapidly was an informal gathering of Division Officers and Councilors at the fall 1974 national meeting in the Blackstone Hotel in Chicago, later called the Division Officers and Councilors Caucus, to discuss their and other related issues, formulate some joint political actions to promote the follow-up of the A.D. Little Report, and work toward a change in Constitution to allow greater representation of the Divisions in the Council. The POLY Councilors were among the more active ones in (a) strategy planning, (b) discussing with some influential people in ACS governance and (c) leading debates in Council meetings. The net outcome after almost 2 years was that the Council voted and later approved by the ACS membership, to allow the Council to consist of 90 (20%) representatives from the Divisions, without increasing the total size of the Council, beginning in 1978. As a result, because of the appointment among the Divisions, POLY, as a large Division, had an increase of 2, from 2 to 4, Councilors. Since 1978, POLY has 4 Councilors.

b. Division Officers and Councilors Caucus - At about the same time when the campaign on greater representation was active, the Division Officers and Councilors Caucus turned its attention to other issues: urging ACS to provide more financial assistance to Divisions and to allow them to have a greater voice in societal affairs. This Caucus was a forum for informal exchange of views and actions among the Officers and Councilors. At one point, because of the need to address different subjects by a different group, the Caucus was split into a Division Officers Caucus led by Fred Bailey and Ken Craver and a Division Councilors Caucus, led by Jesse Hwa and Frances Estes. Later the two were combined again and have since been called simply Division Officers Caucus (DOC). While DOC has never been an official unit of the ACS, it has been very helpful to the Division Officers and Councilors. Later, it was formally organized as an organization.

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In 1977, an in-depth review of the financial status of all divisions, made by DOC, was presented to the Divisional Activities Committee (DAC). It was revealed that 5 of the 28 divisions were in dire financial condition. The formal report by Fred Bailey led to a petition to provide financial allotment to the divisions using income from national meeting and Program Development Fund from DAC.

To respond to the need for greater financial assistance to Divisions and to the need of a greater voice on the part of the Divisions in Society policy matters, the ACS Board of Directors in 1977/1978 approved several measures: (a) formation of a provisional Science Commission (later became permanent) composed of 15 members, 5 of whom being from the Divisions, to evaluate and recommend programs that would strengthen the societal scientific interests; (b) allocation of funds to the Divisions as assistance to their operations. The latter was in 2 forms: (a) fixed amount according to the Divisions size and (b) a variable amount depending on the attendance at each Divisions technical sessions during National ACS meetings. Both of these 2 measures which were approved by the council in 1980 are still in effect today.

Because of the usefulness of DOC and the greater diversity of Councilor's activities, POLY later created 2 new Committees, one on DOC and one on Councilor Activities to coordinate and provide feed-back to the Executive Committee.

A special mention and honor goes to Fred Bailey. Bailey, as Chairman of POLY in 1976 and Councilor from 1978 to 1989, was active in DOC from its inception. In 1985, he was presented with a plaque "recognizing his strong and creative leadership as Chairman of DOC from 1980-1985." Bailey was also elected a member of the Science Commission in 1978 which provided the analysis and recommendation to the Board of Directors on division allocations. In 1989, he was elected a Director from Region II.

5. Top Citizens

POLY is also proud to have its native sons who rose from the ranks and ultimately became the Society's top citizens - Presidency of ACS:

W. Sparks

C.S. Marvel

W.J. Bailey (also Chairman of the Board of Directors)

C.G. Overberger (also Chairman of the Board of Directors)

Gordon Nelson

E.M. Pearce (1990 candidate for President-Elect)

VII. CONCLUSIONS

As the narration of the history of POLY comes to an end, it is time for the writer to make some personal remarks.

Because POLY's charter spells out a clear directive which has not wavered in 40 years, POLY has had a clear mandate toward which POLY has steadily broadened and strengthened its scientific programs. These programs meet the needs of its members who are one of the largest constituents in the chemical industry. With strong membership support, POLY has been able to develop into its present prominent and prestigious position today. If the importance of polymer

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science in the industrial world does not diminish in the future, which is a probable scenario, the need for POLY's services likely would remain high. With continued diligence, POLY could likely remain in a renowned position in the scientific community, as it is today, for many more years to come.

Besides excellence in scientific programming, perhaps another area that POLY could also excel in the future is in polymer education. To this end, POLY has made a big stride during the past decade. One can envision that, in one or two decades from now, POLY may also become an educational institution which could be as strong as its strength in scientific programs. Excellence in technical programs and education complement and reinforce each other. This goal is not unreasonable and may be achievable if POLY continues to be diligent and innovative.

As empires rise and fall because of the acts of men, POLY's present position and that which we aspire to in the future would not be possible if it were not for the efforts of many men and women, who, in its 40 years of history, have contributed their time and service, however large or small, to the work of POLY. In the final analysis, it is the people who have made POLY into what it is today. Because POLY provides a forum that attracts people through involvement and recognition, there has been a healthy turnover in personnel that continues to provide an influx of new blood and vitality. There is constantly a healthy blend of some senior people, who have the knowledge and experience, and new comers who have the energy and new ideas. As George Butler once whispered to the writer in one of the Board meetings, "It is good to see some new faces."