

1977

Annual Report of the Iowa Academy of Science 1976-77

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Annual Report of the Iowa Academy of Science 1976-77

ROBERT W. HANSON*

PREFACE

This report continues the practice of writing a running history of the Academy on a year-to-year basis, begun in 1975. The reports of committees are kept on file in the Academy office and are not published; however, this report includes all legal necessities such as constitution and bylaw revisions, election results, and financial statements. The rest of the report covers the essence of all Academy committee activity and Board action.

REVIEW OF ACADEMY ACTIVITY IN 1976-77

On April 22, 1976, Dr. Willard Poppy of the University of Northern Iowa was installed in absentia as the new president, replacing Dr. Paul Meglitsch. (Dr. Poppy was unable to attend because of a death in his family.) Earlier in the day, at the Annual Business Meeting, Dr. Lois Tiffany of Iowa State University was announced as president-elect — the first woman in the Academy's history to hold that office. The two new directors elected to the Board were David L. Fagle of Marshalltown Community Schools and Margaret Watson of Simpson College, replacing Ruth Siemer of Coe College and Lois Tiffany. Dr. Donald Pilgrim was re-elected as Treasurer for a term of three years under the revised constitution extending the term of that office.

The roster of committees was completed by the new president by the time he took office. All committees and other leadership personnel are listed at the end of this report.

Board of Directors

The new Board of Directors met for the first time on June 11, 1976, at the Tall Corn Towers Restaurant in Marshalltown. The main topic of the meeting was discussion and approval of the budget for 1976-77. Other matters that were taken up at that time included the question of copyrighting the *Proceedings* (a matter which has been discussed during several Board meetings but which was finally settled at the April 9, 1977, Board meeting; the possibility of conducting regional seminars with the AAAS as co-sponsor dealing with such topics as energy, land use, health care ethics, water resources; and scientific advice to state government. No action was taken at the time on these items but as a result of decisions made at the June Board meeting, a great deal of work was accomplished in the area of encouraging high school students and teachers to submit proposals for grant funds from the Academy to support appropriate research or investigative activity at the high school level.

At that first Board meeting the Board decided that it should recommend that the Farm Committee become a standing committee, and since that time a bylaw to that effect was approved by the Board and presented for vote of the membership at the April 1977 business session, along with several other bylaw revisions.

Joint meetings with other state academies were discussed and general plans were made for such meetings in the future. (It is interesting to note that at least two other of our neighboring academies have proceeded with joint meetings.) It is possible that within the next two years a joint meeting involving South Dakota and Nebraska will be planned and scheduled in western Iowa as a fall meeting.

Income from the Academy's farm is an important part of the Academy's assets, and the Board decided that the amount of farm income that can be used for general Academy operating expenses be limited to \$16,000 in 1976-77 and that the rest of the farm income be maintained as a reserve, part of which can be drawn upon by the Farm Committee for making capital improvements to the farm both to the land and to the buildings. The Board went on record, however, of not putting any more money into the improvement of the farm house. The tenants have nothing to do with the operation of the farm, and the cost of maintaining the house takes almost all of the rent that is collected. The Board sees some advantage in having someone living in the house even though the tenants have no formal caretaker responsibility for other buildings on the farm.

A new associate editor for social sciences was appointed — William Klipec from Drake University. A new associate editor for zoology was under consideration but the acceptance was not official until fall. That new associate editor is Nixon Wilson of the University of Northern Iowa. In the spring of 1977 a new associate editor for geological sciences was appointed — Dr. Richard Baker of The University of Iowa.

On recommendation from the Membership Committee a straw vote on some suggested constitution revisions dealing with changes in membership categories was conducted in the fall by way of an enclosure with the first dues statement. The Membership Committee and the Board of Directors studied these proposed revisions in the light of the straw vote during the winter months and the resulting proposed constitution revisions included with the election mailing in March were approved by the membership with few dissenting votes. (These revisions appear at the end of this report.)

The budget for 1976-77 involving \$44,584 of disbursements was approved. Included in the budget was an \$8,000 state appropriation for the *Proceedings* and \$16,000 from farm income.

One of the major items taken up by the Board at its second meeting on November 6, 1976 was a proposed indexing project that was included as a second-level in the request for a state appropriation for the 1977-79 biennium. The Publications Committee and the Executive Director had explored in depth the question of whether, in fact, there was a need for such an index and, if so, whether it should be computer-generated or whether it should be a manual index. Correspondence with qualified persons in the indexing field provided the Board with enough information to make a decision to propose a manual index of the *Proceedings* on the condition that the appropriation from the state were sufficient to cover the cost during the next two years. Not only did we not get an appropriation for the indexing project but because of a freakish misinterpretation of our appropriation request, the Governor's budget included only 56% of what we have been getting the last several years. (The Governor's staff admitted that an error was made in putting this low figure in the Governor's budget and we expect to make up for it in 1977-78.)

A policy on charges to authors of articles in the *Proceedings* was developed by the Publications Committee and approved by the Board at its November meeting. That policy was circulated widely as a tentative policy subject to revision.

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A revised Article VII of the constitution was studied by the Board and recommended for vote. This article deals with amendments and was also included in the mail ballot in the spring of 1977. A new bylaws article on election procedures was passed at the Annual Business Session in April of 1977.

The third meeting of the Board of Directors took place on April 9, 1977, again at the University of Northern Iowa. At that meeting it was decided after considering the pros and cons of copyrighting that the *Proceedings* not be copyrighted generally speaking. There may be some individual issues and some special occasions that will require a registered copyright, however.

Meeting locations for the Academy in future years were determined to be:

- 1978 University of Northern Iowa
- 1979 Cornell College
- 1980 Simpson College

The Student Programs Committee had been very active during the fall and winter months and the chairman of that committee appeared before the Board to go over a new draft of "IJAS Bylaws." The Board approved the document with minor revisions. Under these new "Bylaws" the Junior Academy was to solicit school and individual memberships and place greater emphasis on the promotion of research activities on the part of high school students.

Even though the state appropriation for the coming year was cut 44%, the Board agreed to support the limited 10 year indexing project of the *Proceedings* for the period 1967 through 1976. John Mort of Fayette, Missouri, a professional indexer, was engaged to do the index during the summer of 1977. The Publications Committee and the Editorial Board will decide whether an annual index will become part of the *Proceedings* on a regular basis.

There was some optimism on the part of the Board that this initial project may soon lead to an indexing of the *Proceedings* that goes back to its very beginnings.

The Board discussed the possibility of establishing an Academy speaker's bureau and decided to study the possibility of setting up an Iowa Academy Distinguished Lecture Program involving one Academy lecturer per year who would go out under Academy auspices for a limited number of engagements.

The concept of reduced dues for spouses of Academy members was approved by the Board. (A change to this dues structure will require a bylaws revision.)

Final action on the budget for 1977-78 was deferred until the new Board met on June 3, 1977.

Committee Activity

Each meeting of the Board of Directors includes careful consideration of committee reports and recommendations. Committees operate on a continuous basis without regard for the year cycle — with one exception. The **Annual Meeting Committee** cares for planning and evaluation of each annual convention. The execution of the plans is left to the Executive Director and the Local Arrangements Committee of the host institution. The printed program of the 1977 meeting at Drake includes the names of members of both committees.

Table I summarizes registered attendance at the 1977 meeting. Table II deals with the matter of repeat attendance by members during the past four years. Non-member repeat attendance is not covered by these data.

As shown in Table I, students constituted about 24% of those registered. Nonmembers, including students, constituted about 27% of the registration.

Table II identifies 1044 individual members that were registered at least once during 1974-76, of whom 440 attended two years in a row. There were 89 that were registered all four years. Attendance in consecutive years dropped from 308 in 1975 to 169 in 1977, but about

half of the 1044 individuals were present for more than one meeting during the period.

Table I. Registered Attendance, 1977

	Pre-registered		Walk-in		Total
	Papers	Others	Fri.	Sat.	
Members					
Professional	86	155	77	40	358
Student	41	8	5	3	57
Total	127	163	82	43	415
Nonmembers					
Professional	22	20	21	10	73
Student	59	6	5	19	89
Total	81	26	26	29	162
Guests, etc.	—	20	4	—	24
Total	208	209	112	72	601

Table II. Repeat Attendance, 1974-76 (Members)

Consecutive Years	No. of Meetings Attended During Period			Total
	Two	Three	Four	
1974, '75	71	148	89	308
1975, '76	52	31+(122)	(89)	83+(211)
1976, '77	39	10+(31)	(89)	49+(120)
	162	189+(153)	89	440 (331)
Number that attended one time only				529
Others				75
TOTAL INDIVIDUALS				1044

(Numbers in parentheses are counts duplicated in the columns)

The section meetings were confined to Saturday with the exception of a symposium on Iowa Coal sponsored by the Geology Section and scheduled Friday afternoon along with symposia on the Food Chain in Iowa and the Iowa Preserves System. Attendance at these three symposia was at room capacity, indicating a strong interest among those present in these topics indigenous to Iowa. The Friday morning general session, dealing with "Perceptions of Natural Resources and their Management in Iowa" in an address by Roger Q. Landers of I.S.U., prompted a motion in the annual business session that followed that the conservation committee of the Academy be re-established, having been disbanded in 1970 when the constitution and bylaws underwent a major revision. (As a consequence of the motion, President Tiffany and the Board of Directors agreed at the June 1977 meeting of the Board that an *ad hoc* committee be appointed to clarify the functions and goals of such a committee and to define its relationship to the existing Social Implications Committee.)

The section meetings included over 200 papers, one of the highest numbers in the past ten years. Table III summarizes number of contributed papers and attendance by section.

The economics section failed to produce a program in 1977 for the second consecutive year. At their June 1977 meeting the Board moved to dissolve the section under the Academy's bylaws.

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Table III. *Number of Papers and Attendance by Section, 1977*

	Papers	Attendance
Anthropology/Archeology	14	51
Botany	24	65
Cell Biology	15	30
Chemical Education	0	24
Chemistry C	10	25
Chemistry D	10	20
Conservation	21	60
Economics	0	0
Engineering	16	20
Geology	27	39
Mathematics (M.A.A.)	9	56
Physics	7	29
Physiology	12	37
Psychology	21	35
Science Teaching/ISTS	19	54
Zoology	18	30
Totals	208	575

Table IV shows the distribution of contributed papers among professionals and students, members and nonmembers.

Table IV. *Contributed Papers by Member Category*

	Members	Nonmembers	Total
Student	41 (20%)	59 (28%)	100 (48%)
Professional	86 (41%)	22 (11%)	108 (52%)
	127 (61%)	81 (39%)	208 (100%)

These data substantiate the Iowa Academy's role in providing a forum for student papers, both graduate and undergraduate, and show that the policy of admitting nonmembers to contribute papers attracts a significant number of such persons, mostly students. Of 146 students registered, 100 presented papers.

The publications of the Academy (*The Iowa Science Teachers Journal* and the *Proceedings*) continued to be managed and printed in Cedar Falls. The *Journal*, as a joint project of the University of Northern Iowa and the Academy, has been made available to any secondary school science teacher in Iowa on a complimentary basis. The University's contribution consists of \$750 toward printing costs, typesetting, and mailing expense. The rest of the cost is borne by the Academy, which in 1976-77 amounted to \$780.05 for printing and about \$200 for clerical work and postage. The *Journal* reaches 366 high school teachers that are not members of the Academy, 628 Academy members (only those requesting the *Journal* receive it), and 28 subscribers. In addition, 155 copies are sent on an exchange basis to editors of other similar publications.

The *Proceedings* continue to be printed in Cedar Falls, and the June issue of 1977 came out in June — the first time in the history of the Iowa Academy that this publication has been current. Manuscripts now flow in a continuous stream from editor to managing editor to typesetter to author and back. When the editor has an issue completed it goes to the printer under a strict agreement of production deadlines. Costs of production are now predictable within reason. Charges to authors are being made according to a reasonable policy established by the Publications Committee whereby authors are subsidized by the Academy to the extent of 125% of the basic contract price for typesetting. Under some conditions authors may request even more subsidization.

A ten-year index of the *Proceedings* for the years 1967-1976 will be published late in 1977 as a result of Board action to engage the services of a professional indexer on a trial basis. The work of the Publications

Committee in 1976-77 was devoted largely to consideration of the pros and cons of an indexing project and whether it should be computer-based or manual.

The **Recognition and Awards Committee** did not select a recipient for the Distinguished Fellow Award in 1977, reserving this honor for the most deserving of Iowa Scientists. The IAS Award of Merit was presented to four persons:

Harrell L. Strimple, University of Iowa, for distinguished international contributions to the field of paleontology, for inspiration to many individuals, and for administrative ability as Curator of the Department of Geology at the University of Iowa.

Delma E. Harding, Iowa State University, for outstanding service in training biology teachers, for exceptional concern for students and enthusiasm, and for her many contributions to community and state in the public understanding of science.

Paul Helmick, Drake University, for pioneering development of courses in several areas of physics and for a distinguished career as a physics teacher, and for long and faithful service to the Iowa Academy of Science (Secretary, 1925-29; President, 1950-51).

George C. Huff, Drake University, for outstanding contributions and leadership in undergraduate biological education, for administrative achievements in higher education, and for devotion and service to the Iowa Academy of Science (President, 1960-61).

Each one was presented a framed engraved certificate at the Friday evening general session on April 22, 1977.

Five secondary school teachers and one elementary teacher were recognized for excellence in teaching following the banquet on Friday evening, April 22. Each of the following teachers was presented with an engraved plaque by David McCalley, coordinator of the Excellence in Science Teaching Awards program:

Biology	<i>Owen Primavera</i> , Milford Community High School.
Chemistry	<i>Henry L. Caudle</i> , West High School, Davenport.
Earth Science	<i>Ross Iverson</i> , Miller Junior High School, Marshalltown.
Elementary Science	<i>Diana Brill</i> , Southeast Elementary School, Ankeny.
Junior High Science	<i>Barbara Bell</i> , South Junior High, Ft. Dodge.
Physics	<i>James E. Jones</i> , Ames High School.

During 1976-77 the Academy's **Research Grant Committee** awarded funds to each of the following to support the project described:

Kathryn S. Thomason, student, Luther College, Decorah, Iowa — \$200 to help pay for maintenance of rats during the duration of the experiment and to purchase carbon dioxide for histological examinations at the termination of the project, which is aimed at relating two previously unrelated areas of research — the Campbell-Sheffield theory and the work with lesions in the frontal and hippocampal regions of the brain, i.e., a comparison of heightened arousal in laboratory rats produced by deprivation and lesioning.

Kathleen J. Sutphen, student, Clarke College, Dubuque — \$70 to pay 20% of the salary as an undergraduate laboratory assistant (the balance to be paid from federal work study funds) and \$130 for special chemicals for a research project involving the synthesis of several dithiolate ligands and some transition metal complexes of the ligands.

Prior to 1976 all research grants made by the Iowa Academy came from funds made available from the AAAS on the basis of one dollar for each Academy member who was also a member of the AAAS. The Academy had budgeted an additional \$500 of research grant funds for 1976-77 and all but \$35 of the AAAS grant of \$465 for 1976 had been awarded by the start of our fiscal year. There was \$135 carried over to the start of the 1977-78 fiscal year and three proposals that arrived in the spring of 1977 were funded to the extent of \$200 each in July 1977.

The AAAS Board of Directors announced later in 1976 that the "head count" grants would cease and that individual academies would have to compete for grant funds on the basis of their plans to restrict such funds to the support of high school student research. Protests from various academies at the Association of Academies meeting in Denver in February caused the AAAS Board to postpone the change in policy for one year, but the impending change prompted the Academy's Board to appoint a committee to develop new guidelines for grants to support high school student research. The new guidelines provide for help to high school teachers in designing appropriate investigative projects and writing acceptable proposals. The grants will be made in increments of \$25 up to a maximum of \$200 and will begin in the fall of 1977. The Academy's Research Grants Committee will administer both secondary and post-secondary school research grants and Academy funds will be used for the latter up to \$1000 in 1977-78.

The **Student Programs Committee** in 1976-77 wrestled with the problem of defining the Iowa Junior Academy of Science and its relationship to the Academy generally and to the Student Programs Committee. The problem of developing and encouraging interest in science at an early age prompted the committee to propose activities for elementary students and teachers, but other matters diverted attention away from that area during the year. A new set of "bylaws" of the Junior Academy were written, including a return to the concept of individual and school membership in IJAS (to go into effect in the fall of 1977) and a re-emphasis on the encouragement of investigative activities at the secondary school level. Philosophical differences between the Board of Directors and the IJAS Director became more apparent as time went on, culminating in the resignation of Dr. Edward L. Pizzini from that position in June of 1977.

The American Junior Academy of Science (AJAS) is sponsored by the Association of Academies of Science (through which the Iowa Academy is affiliated with AAAS). Each year two students are selected to present their research papers at the AJAS meeting held in conjunction with the national AAAS convention. In 1977 the two students were selected from several that were invited to present papers at the annual meeting of the Academy at Drake — particularly those that were rated best at the Iowa Science and Engineering Symposium held in February at the University of Iowa under the direction of Edward L. Pizzini and those who competed in the Westinghouse Science Talent Search from Iowa. In all, ten students came as guests of the Academy; nine presented papers before an audience that included an Academy panel of ten judges who selected the following to represent Iowa at the AJAS meeting in Washington, D.C., in February, 1977:

Renee Steinke, Tri-County Community High School, Thornburg: "Transfer of an Acquired Response to Naive Rats by Injection of Ribonucleic Acid Isolated From the Brains of Trained Rats."

Douglas Farris, Lewis Central High School: The Physiological and Psychological Detriments From Induced Stimulation of Auditory Nerves in Mice."

Steven Isaacson of Lincoln High School, Des Moines, was selected as an alternate.

In 1978 there will be broader representation of Iowa students among those competing for selection for the AJAS. Papers from the regional science fairs will be invited and those students who receive incremental

research grants will be given special encouragement to participate along with those from the Iowa Symposium, the Science Talent Search, and any Student Science Training Programs conducted by Iowa colleges and universities for high school students.

The **Membership Committee** met physically for the first time in at least nine years in the spring of 1976 at Clarke College during the annual meeting. Membership categories came under scrutiny, especially the Fellow category. With more than 450 Fellows in the membership already and another large number that qualified, the committee felt that the category had lost its significance. Other concerns about membership categories were mentioned in the Annual Report for 1975-76 (*Proc. of the I.A.S.* 83:44). The committee recommended a revision of Article III of the Constitution and Article VI of the Bylaws doing away with the Fellow category altogether. The proposed changes were submitted to the membership with the first mailing of dues statements in October 1976 for a straw vote to determine sentiment at large. Although a majority approved the changes, a large number of comments came back that prompted the Membership Committee and the Board of Directors to recommend a modified revision of Article III of the Constitution. The revised Article appears in the minutes of the 1977 Annual Business Session at the end of this report.

The changes in Article III of the Constitution have the following implications:

1. All present Fellows will remain Fellows, but the criteria for future Fellows will be upgraded considerably.
2. All present Associates will be redefined as "Members" except Student Associates, who would retain their same category. A few new members would be able to enter as "Fellows" on recommendation of the Membership Committee.
3. New members that qualify will be entered as "Members." Others will enter as "Associates," using the existing meaning of the category.
4. The revision will restore some of the historical objectives of the Academy in recognizing scholarship while at the same time not excluding anyone from participation in Academy activities. Office-holding and voting privileges are expanded but now include "Members" and "Fellows" only.
5. Emeritus status will be restricted to "Fellows" in the future.
6. One of the main functions of the Membership Committee in the future will be the evaluation of applications or nominations for promotion to Fellow status.

Membership trends during the past several years are shown in Table V.

Table V. *Membership Counts 1974-1977*

	1974	1975	1976	1977
Associate	680	638	663	714
Student Associate	155	160	156	173
Fellow	433	481	488	465
Life Member	23	26	34	37
Emeritus	66	65	66	65
TOTAL	1357	1370	1407	1454

Each year about 10% of the membership fail to pay dues and are dropped in January for that reason. New member recruitment in 1976 consisted of mailings from the central office to encourage nominations by present members and incentives that accompany the privilege extended to contribute papers to the section programs of the annual meeting. Differential registration fees and publication charges for members constitute further encouragement to join.

The beginnings of work toward the creation of a **Governor's Science Advisory Council** were mentioned in the Annual Report for 1975-76.

The *ad hoc* committee working on this project continued to develop a proposal during the fall of 1976. The completed proposal with the names of 34 nominees and their vita was hand delivered to Governor Ray on December 6, 1977, who received it enthusiastically. During January and March, contacts with the Governor led to the appointment, on April 22, 1976, of twelve Council members and a liaison officer, as follows:

Energy Panel: *Dr. Robert S. Hansen*, Ames Laboratory USERDA; *Mr. David M. Hodgin*, Spectra Associates, Inc., Cedar Rapids; *Dr. George Skadron*, Drake University; *Dr. Virendra C. Patel*, University of Iowa.

Environmental Panel: *Dr. Richard Bovbjerg*, University of Iowa; *Dr. Clyde M. Berry* and *Dr. Keith R. Long*, both of the Institute of Agricultural Medicine, University of Iowa; *Richard A. Van Deusen*, D.V.M., Ames.

Resources Panel: *Dr. William L. Brown*, Pioneer Hi-Bred, Des Moines; *Dr. Roger Bachmann*, Iowa State University; *Dr. Kenneth A. Christiansen*, Grinnell College; *Dr. Kenneth F. Clark*, University of Iowa.

Liaison Officer: *Robert W. Hanson.*

The date of appointment was selected by the Governor to coincide with the first day of the 1977 Academy meeting. The Council appointees were invited that day to a luncheon meeting with the Governor and the heads of several state departments whose work might entail advice from the Council. The appointed Council was introduced at the Academy banquet that evening and on May 16 the members met in Toledo to organize. At that meeting the three panels elected chairmen and a Council Presiding Officer was chosen. Plans were made to meet as panels to explore the ways in which each one would function with respect to the state agencies. *Dr. Robert S. Hansen*, Director of Ames Laboratory ERDA was elected Presiding Officer of the Council; the elected chairmen of the respective panels are: Energy — *Dr. George Skadron*; Environment — *Dr. Keith R. Long*; Resources — *Dr. William L. Brown*.

Governor Ray considers the Council and the Iowa Academy of Science to be closely related in the sense that the Academy will be instrumental in contacting the scientific community for input. Academies of science throughout the country are getting more involved in the area of scientific advising to state government. Executive Director Hanson (Council Liaison Officer) was invited to attend a meeting sponsored by the National Governors' Conference in Washington, D.C., in April, along with several governors' science advisors from other states, to review NSF guidelines for the State Science, Engineering, and Technology Program. This program, sponsored by the National Governors' Conference and the National Council of State Legislators, will provide study grants of \$50,000 to provide each state government with assistance in the "development or improvement of the policy-formulation processes in their States," in both the executive and legislative branches. The Iowa Academy office will be involved in the administration of the grant for the executive branch (\$25,000). A legislative advisory mechanism has yet to be developed.

Even though the Governor's Science Advisory Council is an extra-Academy body, its creation was through the Academy's sponsorship of the effort, and can be considered a milestone in the Iowa Academy's history.

The Iowa Academy's continued representation at meetings of the **Association of Academies of Science (AAS)** has provided mutually helpful liaison between other academies and our own. *Frank Starr* of Waterloo Community Schools continued as chairman of the Junior Academy Committee of AAS in 1976-77 and arranged the program of papers for the American Junior Academy of Science. *Robert W. Hanson* of the University of Northern Iowa was elected secretary-

treasurer of the AAS in 1976. The program of the AAS in 1977 included a series of papers concerning problems of state and local academies of science. These will be published in the *Directory and Proceedings of the Association of Academies of Science* and made available to various academy officers to assist with financial problems, member recruitment, publications problems, junior academy financing, and many others.

When the executive committee of the AAS met at AAAS headquarters on May 20, 1977 in Washington, D.C., the main topic under consideration was the concern for youth activities in science nationwide. The AAAS Office of Science Education the day before had hosted a conference of AAS officers, representatives of Science Service, the National Science Teachers Association, and others, to assess the current status of youth activities in science, in view of a proposal under consideration by the AAAS Board of Directors that a "junior AAAS" be inaugurated. The AAS executive committee followed up on this discussion with action to set up an *ad hoc* Committee for Youth Activities Development to explore the overall needs of secondary students in science and to develop a comprehensive proposal that embodies new approaches, as opposed to a revival of, say, the NSF Visiting Scientists Program of the 1960's. The AAAS Office of Science Education plans to issue a newsletter occasionally dealing with the activities of the various member academies and junior academies.

The **Social Implications Committee** was relatively inactive during 1976-77. The chairman was a member of the *ad hoc* Committee on the Governor's Science Advisory Council but Academy-sponsored activities in the area of public education in science did not materialize during the year.

The **Parish Farm Committee** was chaired on a *pro tem* basis in 1976-77 by *Paul Christiansen*, a director of the Academy. The question of maintaining or improving the farm house as a rental property came to the Board's attention again and a decision was made to put no more money into the house except for repairs that were required on short notice to maintain the habitability of the house. The all-purpose classroom (a mobile modular building) remained unused throughout the year and no facilities such as parking space and toilet were installed in the area.

The farm continues to be a good example of sound soil conservation practice in Grundy County, and under Hertz Farm Management it continues to yield an important percentage of the Academy's operating income.

The **Iowa Science Teachers Section (ISTS)** has sponsored a fall meeting since the Iowa State Education Association stopped having an annual convention in the fall. Undaunted by the withdrawal of ISEA support for the ISTS fall section meeting, this Academy section held its fall conference in Marshalltown in November, under the capable direction of *James Hungerford*, life member of the Academy and recipient of the Academy's Excellence in Teaching Award. More than 300 teachers gathered for an ambitious program covering all grade levels and science subjects. Many Academy members who are not high school teachers attended and participated in the program.

The **Chemical Education Section** is the only other section that holds a fall meeting. In September the section met at Marshalltown Community College to discuss "Problems Students Have With the Mathematics in General Chemistry," following the usual informal mode that has characterized this section since its beginning in 1972.

Table VI shows the distribution of Academy operating funds and their sources for the fiscal year. The total of \$45,943.00 included \$8,750.00 that didn't appear in the Academy's books (the state appropriation to assist with printing the *Proceedings* and the UNI subsidy of the *Journal*). In addition to the difference (\$37,193.00) there was \$5,926.24 of farm income placed in the reserve for the coming year which doesn't appear in the table.

The assignment of various dues amounts to the four disposition

Table VI. Sources and Disposition of Academy Funds
July 1, 1976 - June 30, 1977

Operating Funds		Disposition			
Source	Amount	Publications	Programs; Projects	Meetings, Etc.	Administration*
Dues	\$14,623.50	\$ 6,770.68	\$2,193.52	\$ 3,699.75	\$1,959.55
Contributions	613.00	—	613.00	—	—
Sales	4,791.84	4,791.84	—	—	—
Interest	1,375.31	—	—	—	1,375.31
Reg. Fees	3,441.50	—	630.00	2,811.50	—
Misc.	274.09	—	—	—	274.09
AAAS Grant	500.00	—	500.00	—	—
UNI Subsidy	750.00	750.00	—	—	—
From reserves**	11,573.76	956.82	2,963.16	5,115.38	842.08
State approp.	8,000.00	8,000.00	—	—	—
TOTAL	\$45,943.00	\$21,269.34	\$6,899.68	\$11,626.63	\$6,147.35
Per Cent	100%	46.3%	15.0%	25.3%	13.4%
*Administrative expense allocated and included:		\$ 6,147.35	\$3,688.42	\$ 8,606.31	\$6,147.35
Per Cent		25.0%	15.0%	35.0%	25.0%

**From savings and farm income

columns is based on the percentage of the total represented by each column; e.g., 46.3% of the total goes for publications, so 46.3% of the dues collected is assigned to the publications column. The total of all administrative expense was \$24,589.43 for the year; 75% of this is assigned as shown in the table to the first three columns somewhat arbitrarily, with the other 25% for general administration. The rest of the column totals consist of recorded disbursements in each disposition area (Publications, Meetings, etc.).

Significant gains were apparent for the Academy in 1976-77. The

Proceedings is on schedule and improving in quality; an index for the *Proceedings* is underway; more attention is going toward the encouragement of research and scholarship as a result of increased funding of research grants, the new incremental grants for high school students, and the changes in the Constitution. Perhaps the most important achievement in the year was the establishment of the Governor's Science Advisory Council. The summer of 1977 finds the Academy alive and growing.

AUDITORS' REPORT AND FINANCIAL STATEMENT

Iowa Academy of Science, Inc.
Cedar Falls, Iowa

Summary of Cash Transactions
For the Year Ending December 31, 1976

	Checking Account (1st Nat'l Bank)	Savings Accounts (Cedar Falls Savings & Loan)	Total
CASH BALANCE			
January 1, 1976	\$ 4,606.44	\$19,500.00	\$24,106.44
Add: Receipts	44,927.17	(14,000.00)	
Less: Disbursements	36,997.84	(7,500.00)	
TRANSFERS			
From Checking to Savings	(14,000.00)		
From Savings to Checking	(7,500.00)		
CASH BALANCE			
December 31, 1976	6,035.77	26,000.00	32,035.77

We have examined the books of the Academy kept by Executive Director Hanson on March 19, 1977, for the calendar year 1976, and found the checking and savings accounts records to be in order and properly kept. The balances shown are correct for the period ending

December 31, 1976. This audit did not include accounts maintained by Hertz Farm Management.

Signed: *Donald H. Pilgrim*, Treasurer
Fred W. Lott, Member of Finance Committee

**MINUTES OF THE ANNUAL
BUSINESS MEETING APRIL 22, 1977**

President Poppy called the business meeting to order at 11:15 a.m. in Parents Hall North, Olmstead Center at Drake University with about 60 in attendance.

Dr. Robert Hanson reported on the activities of the Board of Directors during the past year.

Dr. Paul Meglitsch, chairman of the Election Committee, reported on the annual election results. The following were elected: Dr. Karl Goellner of Coe College as President-elect, Dr. Stanley Grant, State Geologist, as a Director, and Dr. Leland Wilson of the University of Northern Iowa as the other new Director. Other candidates were Sylvan Runkel for president-elect; Kenneth Cook and William Deskin for director.

Poppy then thanked Meglitsch for serving as President-elect, President, Past President and many years as editor of the *Proceedings*. He also thanked Chalmer Roy and Martin Ulmer for serving three years on the Board of Directors.

Dr. Donald Pilgrim, Treasurer, then gave the Auditor's Report and the report of the Finance Committee.

Then Dr. George Knaphus, chairman of the Membership Committee, read the names of those members who died during the year or who had not been reported previously. They were: Harry H. Knight, H. J. Gilke, William O'Neill (1974), George Martin, George Snedecor (1975). Then he asked the audience to stand for one minute of silence in honor of these deceased members.

Poppy then reviewed the changes in the Academy's Constitution concerning membership and explained the new categories of membership. He mentioned that the membership vote was 504 for the change and 35 against. It was emphasized that the Fellow category now has a little more prestige associated with it and that both Fellows and Members are now eligible to hold offices and vote.

The Business meeting then turned to the proposed changes in the Bylaws. The president asked the group if they wished to take them up one at a time or if they were satisfied to pass on all the changes proposed for the Bylaws, with the exception of the Parish Farm Committee. It was moved that the Farm Committee be a regular standing committee with three new members appointed each year. The motion was seconded and passed.

Then a motion was made to accept all of the remaining proposed Bylaws changes. The motion was seconded and passed. The revised articles and sections of the Constitution and Bylaws read as follows:

CONSTITUTION

ARTICLE III — MEMBERSHIP

Substitute the following for Section 1, Sections 1b., 1c., and 1f., and Section 2:

Section 1. **Categories of membership.** The membership shall consist of Emeritus Fellows, Fellows, Members, Associates, Student Associates, Corporate Associates, and Institutional Associates. No candidate for membership shall be excluded on the basis of sex, religion, race, color, or national origin.

Section 1b. **Fellows.** Fellows may be elected by the Board of Directors on recommendation of the Membership Committee from those who meet the requirements for Member status and who have also shown evidence of scholarship as indicated by publications of papers in the *Proceedings* or presentation of papers at the Annual Meeting. Publication of other scholarly work, evidence of outstanding service in teaching, or service in promoting the objectives of the Iowa Academy of Science, may also be submitted as evidence for promotion to Fellow status. Any Member may apply for Fellow status or may be nominated for Fellow status by a Member or Fellow of the Academy in good standing. A Fellow may become a Life Fellow by payment of the dues prescribed in the Bylaws.

Section 1c. **Members.** Persons actively engaged in research in science, or teaching science, or administration in science, may become Members of the Academy. Such Members may ask the Membership Committee to consider their requests for promotion to Fellow status or the Membership Committee may initiate the action necessary for promotion. A Member may become a Life Member by payment of the dues prescribed in the Bylaws.

Section 1f. **Corporate and Institutional Associates.** Corporations or institutions interested in supporting the Academy may become Corporate or Institutional Associates.

Section 2. **Privileges.** Only Members and Fellows shall be eligible to hold office in the Academy and have full voting privileges.

ARTICLE IV — OFFICERS

In the last sentence of Sections 1,2,3,4,5, substitute "Member or Fellow" for the word "Fellow." Then renumber Sections 3,4, and 5 to Sections 4,5, and 6, and insert new Section 3, as follows:

Section 3. **Immediate Past-President.** The immediate past-president shall continue as an officer of the Academy for one year beyond his term of office as president and shall perform such duties

as required by the Bylaws or by the Board of Directors. In the event of his resignation, absence, disability or death, his duties shall be assumed for the remainder of the unexpired term by a Member or Fellow, properly qualified, appointed by the Board of Directors.

ARTICLE V — BOARD OF DIRECTORS

Substitute the following for Section 2:

Section 2. **Membership.** The Board of Directors shall consist of twelve members, including the President, President-elect, the immediate Past-President, the Treasurer, the Editor of the *Proceedings*, the Executive Director ex-officio nonvoting, plus six additional Fellows to serve three year terms, two to be elected annually. None of the six elected Directors shall be a chairperson of a Standing Committee.

In Section 3, change "Fellow" to "Member or Fellow."

ARTICLE VII — AMENDMENTS

Substitute the following for the entire article:

This Constitution may be amended at any time by assent of two-thirds of the votes cast by mail ballot, provided that notice of the proposed amendment, approved by a majority of the Board of Directors, has been sent to all voting members at least 45 days prior to the deadline for receipt of ballots.

BYLAWS

ARTICLE II — QUORUM

Substitute the following for the entire Article:

A quorum of the business session of the Annual Meeting shall consist of twenty-five voting members.

ARTICLE III — BOARD OF DIRECTORS

Section 3. The President, President-elect, immediate Past-President, Treasurer and Executive Director shall constitute an Executive Committee which shall be empowered to act for the Board on an interim basis when action is necessary between the meetings of the Board. Such actions shall be reported to the Board at its next meeting for its approval.

ARTICLE IV — EXECUTIVE DIRECTOR

Section 1d) to maintain an accurate and up-to-date list of the membership of the Academy and their dues records, with dates of their election to the different classes of membership, their sectional affiliations, and the date of their separation from the Academy.

Section 1j) to assist the Finance Committee in the interaction between the Academy and any corporations or institutions desirous of encouraging scientific endeavors in Iowa.

ARTICLE VI — COMMITTEES

In Sections 2a,3a,4a,5a,6a,7a,8a,9a. Change "Fellows" to "Members or Fellows."

In Section 4c. Change the word "Memberships" to lower case "memberships."

Substitute the following for the entire Section 5c:

Section 5c) The Membership Committee will annually conduct a membership drive to increase membership in all categories except Corporate and Institutional Associate. It shall make nominations of new Fellows to the Board, consider applications for promotion from Member to Fellow, and make appropriate recommendations to the Board.

The Committee shall assist the Executive Director with maintaining accurate membership lists. It shall be responsible for appropriate memorial tributes upon the death of members.

Change Section 10 to Section 11 and insert new Section 10, as follows:

Section 10. **Parish Farm Committee.**

Section 10a) The Parish Farm Committee shall consist of six Fellows each serving three year terms, two being appointed each year.

Section 10b) The chairman shall be designated by the President.

Section 10c) **Duties.** The Parish Farm Committee shall recommend policies for the management of the Parish Farm and implement those approved by the Board of Directors, including plans for capital improvements, soil conservation measures, crop plans, and any non-farming uses of the farm property.

Insert new ARTICLE VII, as follows:

ARTICLE VII — ELECTION AND VOTING

Section 1. The election of officers and directors shall be by mail ballot under the supervision of the Elections Committee. The results of the balloting shall be reported to the Board of Directors prior to the Annual Meeting and to the members present at the business session of the Annual Meeting. A simple majority of votes cast shall be necessary for election.

Section 2. Voting on Constitutional amendments shall be by mail ballot under the supervision of the Board of Directors or their designate(s), and the results shall be announced by the President to the members present at the business session of the Annual Meeting.

Section 3. Motions of any kind to be presented at the Annual Business Meeting must first be approved by a majority of the Board of Directors or be announced in the *I.A.S. Bulletin* prior to the business meeting.

ARTICLE VII — SECTIONS

In Section 2a, change "Fellows" to "Members or Fellows" and renumber it as ARTICLE VIII.

In ARTICLE X — AAAS AFFILIATION and ARTICLE XI, Section 2: change "Fellow" to "Member or Fellow," and renumber as ARTICLE XI and ARTICLE XII, respectively.

ARTICLE XII — FINANCE

Renumber as ARTICLE XIII and substitute the following for Sections 3b, 3c, 3d, and 3e:

Section 3b) The Board of Directors shall be empowered to recommend annual dues. The establishment of such dues as are recommended by the Board of Directors shall be by majority vote of the voting members at an annual business session of the Academy.

Section 3c) The dues shall be twelve dollars per year for Members, Fellows, and Associates and four dollars per year for Student Associates.

Section 3d) Any Member or Fellow in good standing may become a Life Member or Life Fellow by making a dues payment of \$240 under terms set by the Board of Directors.

Section 3e) Dues for Corporate and Institutional Associates shall be a minimum of \$100 annually.

In Section 5, change "Life Fellowship payments" to "life member payments."

Renumber Article XIII — Amendments as ARTICLE XIV and substitute the following for the article:

These Bylaws may be amended at any Annual Meeting of the Academy by the recommendation of the Board of Directors and the affirmative vote of a majority of the voting members present.

Dr. Daryl Smith moved that the Academy reactivate or reorganize a Conservation Committee. It was suggested that this ought to be

included in the Social Implications Committee, but those committee members thought that Social Implications was to educate the public on science matters rather than conservation. The group agreed that conservation ought to be a separate committee. President-elect Tiffany explained that the President could appoint members to a temporary committee, but at this point a new standing committee could not be formed. Dr. Daryl Smith then moved that the Academy set up a temporary Conservation Committee with its members and the chair appointed by the President. The motion was seconded and passed with one dissenting vote. Then Dr. Daryl Smith moved that the Academy Board study the Bylaws as to a change forming a Conservation Committee as one of the standing committees. The motion was seconded and passed.

It was then brought to the attention of the President that if new Article VII Section 3 remains as stated, a motion from the floor to adjourn is unconstitutional. At 12:15 the President adjourned the meeting without a motion from the floor.

*Respectfully submitted,
Willard Poppy
President*

ACADEMY LEADERSHIP 1976-77

Officers

President — Willard Poppy, University of Northern Iowa
President-Elect — Lois H. Tiffany, Iowa State University
Past-President — Paul Meglitsch, Drake University
Treasurer — Donald Pilgrim, Luther College
Editor — Thomas E. Rogers, Cornell College
Executive Director — Robert W. Hanson, University of Northern Iowa

Directors

Chalmer J. Roy, Iowa State University
Martin J. Ulmer, Iowa State University
Paul Christiansen, Cornell College
Donald Huffman, Central College
David Fagle, Marshalltown Community Schools
Margaret Watson, Simpson College

Section Chairpersons 1976-77

Anthropology/Archaeology — Larry J. Zimmerman, University of South Dakota
Botany — Dorothy Baringer, Drake University
Cell Biology — Ramesh C. Bhalla, The University of Iowa
Chemical Education — Donald N. Langr, Iowa Central Community College, and Robert E. Buckles, The University of Iowa
Chemistry, Inorg. — Sister Mary L. Caffery, Clarke College
Chemistry, Org. and Biol. — James G. Macmillan, University of Northern Iowa
Conservation — Bruce W. Menzel, Iowa State University
Economics — Peter G. Goulet, University of Northern Iowa
Engineering — S. Keith Adams, Iowa State University, and Dennis L. Brickler, The University of Iowa
Geology — George Hallberg, Iowa Geological Survey
Mathematics — Ellen Oliver, Westmar College
Physics — Robert W. Green, Morningside College
Physiology — Hrvoje Lorkovic, The University of Iowa
Psychology — Stephen Epley, Wartburg College
Science Teaching — Elwood Garlock, Cedar Rapids
Zoology — Charles J. Ellis, Iowa State University

Editorial Review Board

T. E. Rogers, Editor and Chairman, Cornell College
Nels R. Lersten, Iowa State University
James Mayhew, State Conservation Commission, Chariton
William D. Klipec, Drake University
Bruce Friedrich, The University of Iowa
Lyle V. A. Sendlein, Iowa State University
Nixon Wilson, University of Northern Iowa

Standing Committees 1976-77

Annual Meeting Committee

James Christiansen, Drake University
Verner Jensen, University of Northern Iowa
Sister Marguerite Neumann, Clarke College
Richard S. Wacha (chairman), Drake University
H. T. Horner, Jr., Iowa State University
Cecil F. Dam, Cornell College
Board Liaison: Executive Director (R. W. Hanson)

Election Committee

George Knudson, Luther College
John Chellevoid, Wartburg College
Robert Drexler, Coe College
Paul Meglitsch (chairman), Drake University
Herbert E. Hendriks, Cornell College
Roger J. Hanson, University of Northern Iowa
Board Liaison: Paul Meglitsch

Finance Committee

Donald Pilgrim (chairman), Luther College
Fred W. Lott, University of Northern Iowa
George W. Peglar, Iowa State University
Harold Swanson, Drake University
David Hampton, Wartburg College
John McCurdy, Marshalltown Community College
Edwin Vaughan, Palmer Junior College
Board Liaison: Donald Pilgrim (Treasurer)

Membership Committee

George Knaphus (chairman), Iowa State University
Gordon W. Searle, The University of Iowa
Dorothy Taylor, University of Dubuque
William L. Brown, Pioneer HiBred International
Leland Wilson, University of Northern Iowa
Leland Johnson, Drake University
Board Liaison: Martin J. Ulmer

Publications Committee

Margaret Watson, Simpson College
Richard S. Wacha, Drake University
David Pippert, Upper Iowa College
Nels Lersten (chairman), Iowa State University

Donald Roiseland, Wartburg College
Kenneth De Nault, University of Northern Iowa
Thomas E. Rogers (ex-officio), Cornell College
Board Liaison: Margaret Watson

Recognition and Awards Committee

Donald Huffman, Central College
Elwood Garlock, Cedar Rapids Community Schools
Kenneth Carlander, Iowa State University
Lena Keithahn, Mason City Community Schools
Robert Goss (chairman), University of Northern Iowa
Joe D. Woods, Drake University
David V. McCalley (ex-officio), University of Northern Iowa
Board Liaison: Donald Huffman

Social Implications Committee

Paul Joslin (chairman), Drake University
Stanley R. Watkins, Coe College
Cameron Christensen, Iowa Central Community College (Webster City)
Edward T. Cawley, Loras College
Duane Toomsen, Department of Public Instruction
Clifford McCollum, University of Northern Iowa
Board Liaison: David Fagle

Student Programs Committee

Frank Starr (chairman), Waterloo Community Schools
Gary E. Downs, Iowa State University
Daniel Sheldon, University of Iowa
Don Murphy, Des Moines Community Schools
Gordon Thies (replaced by Robert Lancaster mid-year)
Robert T. Ward, University of Northern Iowa
Edward L. Pizzini (ex-officio), University of Iowa
Board Liaison: Chalmer Roy

Special Committees 1976-77

Academy (Parish) Farm Committee

Roger Landers, Iowa State University
H. T. Horner, Jr., Iowa State University
Paul Christiansen (chairman pro tem), Cornell College
Walter E. DeKock, University of Northern Iowa
Elmer Hertel, Wartburg College
George Davis, Reinbeck Community Schools
Robert H. Hibbs, Marshalltown
Board Liaison: Paul Christiansen

Research Grants Committee

James Christiansen (chairman), Drake University
Frank Starr, Waterloo Community Schools
William Deskin, Cornell College
Verner Jensen, University of Northern Iowa
Board Liaison: Robert W. Hanson