Annual Report of the Iowa Academy of Science, 1984-85

James G. MacMillan

University of Northern Iowa

1985

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MACMILLAN: Annual Report of the Iowa Academy of Science, 1984-85


Annual Report of the Iowa Academy of Science, 1984-85

JAMES G. MACMILLAN*
Department of Chemistry, University of Northern Iowa, Cedar Falls, IA 50614

PREFACE

This year, 1985, marks the 110th anniversary of the founding of the Iowa Academy of Science. In 1975, when the Academy celebrated its centennial, a history of the Academy was written. Since that time the Annual Report has served as a running history of the Academy.

This year's report encompasses the year beginning July 1, 1984 to June 30, 1985, and is based on committee reports, Board minutes and the recollections of the author.

THE 97th ANNUAL MEETING

The 97th Annual Meeting of the Iowa Academy of Science was held April 26-27, 1985 on the campus of Central College in Pella, Iowa.

The Local Arrangement Committee, chaired by Harold Kolenbrander, Vice President and Provost, included Ronald Byers, physics, Susan McGuire, biology, and Allen Moen, physics. The committee was especially helpful to the Executive Director and the Director of Meetings and Programs in planning the Annual Meeting. The Annual Meeting Committee included the Section Chairs as well as the Local Arrangements Committee.

Marr D. Simons, Iowa State University
Katherine Spielmann, University of Iowa
Diane C. Robertson, Grinnell College
Steve Heideman, Iowa State University
Edward Shane, Morningside College
Jen Swartz, Grinnell College
Harlo Hadow, Coe College
Mike Murtha, Iowa State University
Dennis O'Brien, Drake University
Clyde Thogmartin, Iowa State University
David Robinson, Drake University
Susan R. McGuire, Central College
Larry D. Sensenig, Morningside College
Robert Wilson, Belmond
Robert P. Lancaster, Cedar Rapids
Rich Huber, Iowa City
James L. Christiansen, Drake University
Geraldene Felton, University of Iowa
Walter Fehr, Iowa State University

The Annual Meeting Committee met on Saturday, September 29, 1984 to discuss the blocking of the meetings, possible General Session speakers and possible symposia. Other details of the meeting were accomplished by the Local Arrangements Committee, the Executive Director and the Director of Meetings and Programs.

The program of invited and contributed papers was planned by the 17 sections of the Academy. This Annual Meeting saw the first programs by the two new sections of the Academy; the Nursing Section and the Biotechnology Section. The Biotechnology Section also planned the symposium "Biotechnology: Technical, Legal, Economic, Social and Ethical Implications."

The Iowa Junior Academy of Science program included the following poster and oral presentations.

Mark E. Anderson - Davenport Central High School
Analyzing Rutherford backscattering (RBS) spectra formed

William C. Carr, Jr., Davenport Central High School
Splash chambers: can they be used to study aerodynamics?

Gretchen Edlund, Davenport Central High School
The digestion of Wrigley's Chewing Gum

Tom Egger, West Middle School, Muscatine
In situ capture of sulfur dioxide by limestone in fluidized bed combustion of coal

Geoffrey S. Francis, Marshalltown Senior High School
The effects of radiation on integrated circuits

Rod Hauser, Marshalltown Senior High School
Field testing germination of prairie grasses in a compacted seed bed

Chong C. Lee, Mason City High School
Quantitative and qualitative aspects of B lymphocyte separation systems

Martha Jo Myers, Davenport Central High School
The effect of increased light exposure on grafted hibiscus plants

Gail Marie Slama, Mar-Mac High School, McGregor
The preliminary studies of the effects of Phorbol Ester and Lipopolysaccharids on IgA production on murine Myeloma cells in vitro

Christine Stoffel, Bettendorf High School
Further investigations into the allelopathic activities of Buckhorn Plantain

The posters and presentations were judged by a committee composed of the vice chairs of the sections and the Student Programs Committee. Two students, Martha Jo Myers, Davenport Central High School and Christine Stoffel, Bettendorf High School were selected to represent Iowa at the 1986 American Junior Academy of Science meeting in Philadelphia in 1986.

The senior Academy program had 5 poster papers and 173 contributed papers in 17 sections. There were three workshops, four symposia and a film festival.

The following program summary illustrates the activities of the Annual Meeting.

Thursday, April 25
2:00 Board of Directors Meeting and Dinner

Friday, April 26
8:00 VIDEO FILM FESTIVAL
8:00 WORKSHOPS

Iowa Physics Project (PRISMS)
Presider: Ken Hartman, Ames Community Schools
Presenters: Roy Unruh, UNI
Tim Cooney, Price Lab School, UNI
Energy Awareness
Presider: Peggy Steffen, Teacher Advisory Board, DPI
Presenter: Doug Larche, Energy Educ.
Consultant, DPI
Human Genetics
Presider: Roger Spratt, Ames Community Schools
Presenter: James Bartley, Univ. of Iowa Hospitals & Clinics

*Executive Director, IAS
ANNUAL REPORT

8:30 IJAS POSTER PAPERS
8:30 IJAS PRESENTATIONS
10:00 POSTER SESSIONS
10:30 GENERAL SESSION I
President Richard S. Wacha, presiding
Welcome: Harold M. Kolenbrander, Provost
Speaker: F. James Rutherford, Chief Education Officer of the American Association for the Advancement of Science, Washington, DC.
"Reform in Science Education: Some Immodest Propositions"
12:00 AWARDS LUNCHEON
President Richard S. Wacha, presiding
This served luncheon will honor groups and individual students who have performed in an exemplary manner in science activities throughout Iowa. Several teachers will be honored as they receive the Iowa Academy's Excellence in Teaching Award.
1:30 ANNUAL BUSINESS MEETING
1:00 VIDEO FILM FESTIVAL
2:00 EXHIBITS
2:00 SECTION MEETINGS
Botany
Chemistry D
Engineering
2:00 CONCURRENT SYMPOSIA
MINES OF SPAIN
THE IOWA SCIENCE FOUNDATION: REVIEW OF FIRST-YEAR PROJECTS
IOWA AND THE NATION'S RESPONSE TO EXCELLENCE IN EDUCATION REPORTS
4:00 POSTER SESSIONS
6:30 PRESIDENT'S BANQUET
8:00 GENERAL SESSION II
President John C. Downey, presiding
Performance by Lee Stetson, Yosemite National Park, California
"Conservation With a Tramp: An Evening With John Muir"
1:00 SYMPOSIUM
BIOTECHNOLOGY: TECHNICAL, LEGAL, ECONOMIC, SOCIAL, AND ETHICAL IMPLICATIONS
1:00 SECTION MEETINGS
Agricultural Sciences
A-
B-
Anthropology
Symposium
Biotechnology
Botany
8:00 VIDEO FILM FESTIVAL
8:00 SECTION MEETINGS
Agricultural Sciences
A-
B-
Attendance summary is shown in Table 1. The 467 total attendance represented a decrease of 115 from the 1984 meeting in Iowa City. Table 2 shows the five year attendance. Although this year's attendance was down considerably from last year, it was more comparable to
Table 1. Registered Attendance, 1985

<table>
<thead>
<tr>
<th>Pre-registered</th>
<th>Others</th>
<th>Walk-in</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Papers</td>
<td>Others</td>
<td>Fri.</td>
</tr>
<tr>
<td>Members:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>81</td>
<td>99</td>
<td>67</td>
</tr>
<tr>
<td>Student</td>
<td>26</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>107</td>
<td>102</td>
<td>68</td>
</tr>
<tr>
<td>Nonmembers:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>26</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Student</td>
<td>51</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>77</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Guests, etc.</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>TOTAL</td>
<td>184*</td>
<td>155</td>
<td>84</td>
</tr>
</tbody>
</table>

*includes symposia papers
Table 2. Five Year Average Attendance

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1981¹</th>
<th>1982²</th>
<th>1983³</th>
<th>1984⁴</th>
<th>1985⁵</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>347 (67.9)*</td>
<td>275 (66.2)</td>
<td>328 (65.1)</td>
<td>361 (62.0)</td>
<td>306 (65.5)</td>
</tr>
<tr>
<td>Non-members</td>
<td>108 (21.1)</td>
<td>90 (21.6)</td>
<td>132 (26.1)</td>
<td>179 (30.7)</td>
<td>116 (24.8)</td>
</tr>
<tr>
<td>Guests</td>
<td>56 (10.9)</td>
<td>50 (12.1)</td>
<td>44 (8.7)</td>
<td>42 (7.2)</td>
<td>45 (9.6)</td>
</tr>
<tr>
<td>Attendance Totals</td>
<td>511 (99.9)</td>
<td>415 (99.9)</td>
<td>504 (99.9)</td>
<td>582 (99.9)</td>
<td>467 (99.9)</td>
</tr>
</tbody>
</table>

*Numbers in brackets are percentages.
¹Coe College
²Iowa Central Community College
³Luther College
⁴University of Iowa
⁵Central College

previous years attendance. The percentages of members, non-members and guests over the five years has not changed appreciably with about 65% of the persons registering as members, 25% as non-members and 10% as guests.

Of the 175 papers presented 58% were by either regular or student members while the remaining 42% were by non-members. Also, 45% of all papers were given by students. Most of the student papers were co-authored by Academy members.

Table 3 shows that 1218 persons attended the 198 contributed papers sessions. The attendance counts were based on the best estimates of the Section Chair. The attendance was fairly even over all sections.

The Awards Luncheon

Awards for Excellence is Science Teaching were presented by Gary Downs, Iowa State University, Director of the Excellence in Science Teaching Program. The following teachers received awards:

Robert Sandquist (Biology), Newton Senior High School, Newton
John Emerson (Chemistry), Ogdens Community High School, Ogdens
William J. Desmarais (Earth Science), George Washington Senior High School, Cedar Rapids
Phyllis Fritchen (Elementary Science), Ottumwa Community Schools, Ottumwa
Lloyd Phillips (Junior High Science), Knoxville Junior High School, Knoxville
Don Schafer (Physics), Bettendorf High School, Bettendorf
Lynn Glass, Iowa State University, introduced the Iowa Junior Academy of Science student research paper presenters and announced the persons who were selected to be the Iowa representative to the American Junior Academy of Science meeting in 1986. The delegates and alternates selected were:

Martha Jo Myers, Davenport Central High School
Christine Stoffel, Bettendorf High School

Alternates:

Mark E. Anderson, Davenport Central High School
Gail Marie Slama, Mar-Mac Senior High School
Joe Moore, Keystone Area Education Agency, the student programs Chair, acknowledged the following programs for secondary students:

Eastern Iowa Science and Engineering Fair
Hawkeye Science Fair
Northeast Iowa Regional Science and Engineering Fair
Quad-Cities Area Science and Engineering Fair
University of Iowa Science, Engineering & Humanities Symposium
UNI Science Symposium
Westinghouse Iowa State Science Talent Search
Governor's National Youth Science Camp
Physics Olympiads

The program directors were commended for their work in providing incentives for science achievement among pre-college students.
Recognition and Awards Committee, who in turn introduced the nominators for the following Iowa Academy of Science Awards:

**Distinguished Fellow Award**
- Arriel R. Hallauer, Iowa State University
- Distinguished Iowa Scientist Award
- Walter E. Wedin, Iowa State University
- Distinguished Service Award
- Harry T. Horner, Iowa State University

Following the awards, President Wacha made his final comments as retiring president and presented John Downey with a gavel. New president John Downey made his presentation before reconvening the meeting in Douwstra Auditorium for General Session II. Both presentations appeared in the September issue of the I.A.S. Bulletin.

**MINUTES OF THE ANNUAL BUSINESS SESSION**
April 26, 1985

The meeting was called to order by President Richard Wacha at 1:30 p.m. in Douwstra Auditorium on the Central College campus in Pella, Iowa. With approximately 60 persons in attendance a quorum was declared.

The first item of business was a report by Duane Anderson, Chair of the Election Committee on the results of the spring election. He reported the following results:
- President-elect: Paul Waite, Des Moines
- Directors: Ruth Swenson, Iowa State University
- Wayne Anderson, University of Northern Iowa

Anderson reported the results of the vote on the Constitution and By-Laws changes. The following changes were adopted:

**Changes to the Constitution**
1. Delete Article IV, Section 4 [Treasurer]
2. Renumber Sections 5 and 6 of Article IV to read 4 and 5 respectively.
3. In Article V, Section 2, Line 3, delete “the Treasurer, plus"

**Changes to the Bylaws**
1. The following Bylaws changes are needed if the Treasurer’s position is eliminated:
   - (1) Article III, Section 3, line 2, delete “Treasurer”
   - (2) Article V, Section 7a, Line 2, delete “the Treasurer and”
   - (3) Article V, Section 76, delete “The Treasurer shall serve as the Chair” and add “The chair shall be designated by the President.”
2. The following addition to the Bylaws under Article V will make the Iowa Science Foundation Temporary Committee into a Standing Committee.
   - (1) New Section. Iowa Science Foundation Committee
      - The Iowa Science Foundation Committee shall consist of six Members or Fellows each serving three year terms, two being appointed each year.
      - The chair shall be designated by the President.
      - Duties. The Iowa Science Foundation Committee shall manage the Iowa Science Foundation on behalf of the Academy for the State of Iowa. The committee shall solicit proposals, subject them to a review process, make awards, monitor grant projects, and provide general oversight for the grants program. The committee shall prepare and update brochures and guidelines pertaining to the program, as appropriate, and shall assist the officers of the Academy, the Governor, and the legislature in the development of the program on an on-going basis.

James Macmillan, Executive Director, presented the following financial statement as of April 24, 1985:

**Assets**
- Checking: 7,900.55
- Bonds: 6,140.00
- Notes: 4,285.76
- MM Savings: 42,889.72
- Books: 490.00
- State Appro: 21,005.97
- PRISMS: 12,445.00
- Others: 1,778.68
- Total: $96,735.68

**Liabilities and Equities**
- Current Liabilities: 445.48
- IBM Notes: 4,826.70
- PRISMS: 12,245.00
- State Appro: 21,005.97
- Others: 3,134.63
- Total Encumbered Funds: $36,405.60
- Total Liabilities: $41,677.78
- Total Equity: $55,057.90

The total assets of the Academy including grants but excluding office equipment and the Parish Farm, was $96,735.68. With total liabilities of $41,677.78 the total equity is $55,057.90.

As of April 24, 1985 the total income of the Academy was $139,829.68. Although the expenses of the Annual Meeting were not complete, the total expenses were $95,418.32 to give a net income of $44,418.32.

The exceptionally high net income is due to the much larger than expected Parish Farm income this year. We had anticipated an income of $24,000 whereas the actual income was $47,500.

It is expected that the income and expenses for May and June should result in the Academy coming in under budget for the 1984-85 year.

James Macmillan presented the 1985-86 proposed budget as approved by the Board of Directors on April 25, 1985.

**Proposed Budget 1985-86**

<table>
<thead>
<tr>
<th>Income</th>
<th>$8,900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publications</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>3,525</td>
</tr>
<tr>
<td>Meetings</td>
<td>4,475</td>
</tr>
<tr>
<td>Dues</td>
<td>21,800</td>
</tr>
<tr>
<td>Grants</td>
<td>6,000</td>
</tr>
<tr>
<td>State Appro</td>
<td>60,400</td>
</tr>
<tr>
<td>Farm Trans.</td>
<td>30,000</td>
</tr>
<tr>
<td>Misc.</td>
<td>4,500</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td>$139,600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses (In)</th>
<th>$76,250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution/Gifts/Grants</td>
<td></td>
</tr>
<tr>
<td>Office/committee/program</td>
<td>18,800</td>
</tr>
<tr>
<td>Printing</td>
<td>25,150</td>
</tr>
<tr>
<td>Travel</td>
<td>12,800</td>
</tr>
<tr>
<td>Misc</td>
<td>6,600</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>$139,600</td>
</tr>
</tbody>
</table>

This would give a balanced budget for 1985-86.
Bernard White Chair presented the membership committee report. The following member was promoted to Fellow during the past year:

Russell R. Rulon

Transfers to Emeritus were:

Eugene C. Bovee
C. C. Bowen
Earle L. Canfield
Dorothy W. King
Harvey I. Lundy
Sister Lois Wagner

As of April 24, 1985 the IAS membership was:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>869</td>
</tr>
<tr>
<td>Student Members</td>
<td>149</td>
</tr>
<tr>
<td>Distinguished Fellows</td>
<td>18</td>
</tr>
<tr>
<td>Emeritus</td>
<td>93</td>
</tr>
<tr>
<td>Fellows</td>
<td>310</td>
</tr>
<tr>
<td>Life Members</td>
<td>41</td>
</tr>
<tr>
<td>Corporate</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Membership</strong></td>
<td><strong>1483</strong></td>
</tr>
</tbody>
</table>

The names of the following members who had died in 1983-84 were read, and the audience observed a moment of silence in respect to their memory:

Robert L. Burton
Margery Simpson Hufferd
E. E. Jacob
George W. Martin
Ralph O. Marts
Robert C. Miller
Frank H. Spedding

Wayne Anderson, Chair of the Conservation and Preserves committee, read the following resolutions for a vote by the members:

RESOLUTIONS

I. THE "SOD-BUSTER" BILL

The Iowa Academy of Science recognizes the "sod-buster" bills (i.e. HF 3457 & SF 663) that have been proposed to reduce agricultural use of fragile, erosive lands. The Academy supports carefully-worded legislation of this type that would protect and conserve Iowa's vanishing prairies, wetlands, and forested areas, while protecting Iowa's valuable soils and watersheds.

II. THE IOWA WEED LAW

The Iowa Academy of Science once again strongly encourages the State Legislature to rewrite the Iowa Weed Law; Chapter 317, Code of Iowa. Modification of this law is essential because it no longer regulates weed control in a cost-beneficial manner. Furthermore, the law has evolved into a loose collection of regulations which no longer represent the needs for which it was originally intended. Revision should include a provision to redefine the term "weed" in order to avoid cosmetic spraying and mowing at taxpayers' expense. Additional provisions should include a mechanism for the protection of rare plant and animal species and the prevention of indiscriminate and unwarranted destruction of roadside wildlife habitat, while being consistent with the health and safety aspects of roadside use.

III. PRESERVATION OF PRAIRIE RAILROAD RIGHT-OF-WAYS

The Iowa Academy of Science hereby endorses the immediate implementation of a systematic floristic inventory of all remaining railroads which are either scheduled for abandonment or have already been abandoned. This inventory is essential for developing priorities for the preservation of Iowa's remaining prairies and the endangered plant and animal species which inhabit them. This action is necessary because agricultural and urban land use has led to the destruction of over 99% of the native prairie lands of Iowa; and because railroad right-of-ways represent a major portion of the remaining prairies, and because the rate of abandonment has accelerated over the past several years leading to additional loss of prairie habitat.

IV. 3RD ANNUAL PRAIRIE HERITAGE WEEK

The Iowa Academy of Science hereby encourages the State of Iowa to proclaim the first full week of September, 1985, as the 3rd Annual Prairie Heritage Week, thereby promoting statewide appreciation and preservation of Iowa's prairie heritage. It urges all schools, colleges, universities, and state and country agencies to take an active lead in developing and implementing programs which encourage public awareness of Iowa's prairie history.

V. DISTRICT DRAINAGE LAW

The Iowa Academy of Science hereby encourages the State Legislature to maintain its present regulation of drainage districts. Currently, such control is exercised under the authority of the Water, Air, and Waste Management Department which must approve stream and wetland dredging and channelization projects. Without such regulation, we fear that wetland wildlife habitat will decline at an alarming rate. It should be recognized that 98% of the wetlands that existed in pre-settlement time have been destroyed. Therefore, the wise stewardship of Iowa's remaining wetlands is paramount. Laws governing drainage should reflect an ecological philosophy of wise stewardship and an understanding of the ecological consequences of indiscriminate and unwarranted drainage.

VI. PERMITS FOR SCIENTIFIC COLLECTING

In regard to the heightened awareness of the need to protect Iowa's declining flora and fauna, and as a result of Iowa's new scientific collecting permitting system, be it resolved that: The plant and animal scientists of Iowa volunteer their knowledge of population density and distribution to the permitting authorities, facilitating the issuance of permits that contribute the maximum scientific and educational benefit.

Wayne Anderson moved that the resolutions be endorsed, Gene Geollner seconded the motion. The motion passed unanimously.

President Wacha asked if there was any further business. Hearing none the meeting was adjourned.

REVIEW OF ACADEMY ACTIVITIES IN 1984-85

Committee Activities

During 1984-85, the affairs of the Academy were handled by the Board of Directors, twelve standing committees, three ad hoc committees, three editors and three directors of special programs. In all over 100 persons are involved in the Academy's administration. The membership on the Board of Directors, committees and special program directors is listed at the end of this report.

Each committee was asked at the beginning of the year to outline their goals and objectives for the year. They submitted their year end report in May. A summary of their reports appeared in the fall 1985 issue of the I.A.S. BULLETIN.

Annual Meeting Committee

The Annual Meeting Committee met on September 29, 1984 on the Central College campus to begin planning for the 97th Annual Meeting. The committee membership included the Executive Director as Chair, the Section Chairpersons and representatives of Central College who would act as the local arrangements committee. The committee agreed on blocking the meeting with two general sessions on Friday and one on Saturday. Section programs would be on either day at the discretion of the Section Chair. Names of possible General Session speakers were discussed and a list was prepared for the Chair to contact. Symposium topics were suggested with names of appropriate contact persons responsible for organization. The idea of a Film Festival was suggested. The local arrangements people suggested notifying members about points of interest around Pella.

A program summary appears earlier in this report.

Future meeting dates that have been established are:
1986 - Wartburg College, Waverly, April 25-26
1987 - Grinnell College, Grinnell, April 24-25
1988 - Iowa State University, Ames, April 22-23

Published by UNI ScholarWorks, 1985
Committee on Committees

The Committee on Committees, chaired by President-elect John Downey, met once in November to discuss possible persons to fill the committee vacancies. These persons were contacted by mail and although the acceptance percentage was high, some positions needed to be filled through a second mailing. Persons on each committee were contacted by mail and asked to serve as Chairs.

Conservation and Preserves

The Conservation and Preserves Committee, chaired by Wayne Anderson, met three times during the year while conducting most of their business by mail. This year the Board of Directors approved the appointment of the Chair of the Iowa Natural History Association as an ex-officio member of the committee as recommended by last year’s committee.

The committee prepared for the Board of Directors six resolutions which were approved both by the Board and the membership at the Annual Meeting. (These are listed under the minutes of the Annual Business Session.)

The committee, in cooperation with the Iowa Natural History Association, organized and conducted a symposium on the Mines of Spain Area for the Annual Meeting.

The committee in cooperation with the Iowa Natural History Association, The Geological Society of Iowa and the Association of Iowa Archaeologists held a field trip to reclamation sites and fossil localities in the Pella-Oskaloosa area as part of the Annual Meeting. Fifty persons participated in the field trip which made stops at the Iowa Coal Project Demonstration Mine, the Hall Reclamation Site and the Pella Site on the property of Jake Rus. A field trip guidebook was published as Field Trip Guidebook Three of the Iowa Natural History Association.

Ad Hoc Committee on Controversial Issues

The committee, chaired by Peter De Jong formed a panel on the “Unified Field Theory” to act as persons willing to make personal statements as to the pseudoscientific nature of this theory. These persons could not speak for the Academy but the Academy would supply their names to groups or persons wishing their advice.

The committee began consideration on a statement concerning pseudosciences for submission to the Board of Directors.

The committee took steps toward informing the Academy membership about what is happening nationally concerning creationism.

Education Committee

Midway through the year Carolyn Brockway was appointed committee chair to replace Jack Gerlovich in order to comply with the IAS By-Laws which did not allow a Board member to serve as Chair of a committee. The committee met four times during the year.

The committee acted as the selection committee for the Iowa nominees for the Presidential Award for Excellence in Science Teaching. For this selection the committee was augmented with Roy Unruh (A.A.P.T.), Ken Hartman (A.C.S. and former Presidential Award winner), Roger Spratt (I.S.T.S. and N.A.B.T.), Richard Huber (I.S.T.S.) and Karen Murphy (former Presidential Award winner). The 1985 nominees were:

Kennon W. Schaefer, Mason City High School
Peggy Steffen, Ottumwa High School
Donald Schaefer, Bettendorf High School

The committee acted as the selection committee for the Search for Excellence in Science Education program sponsored by the National Science Teachers Association. Persons from the committee made on site visits to several schools and after evaluation selected Stuart-Menlo High School of Stuart, Iowa as this year’s recipient.

The committee reviewed the D.P.I.’s proposed change in teacher certification standards and drafted a letter to the D.P.I. concerning changes they thought should be incorporated in the final D.P.I. report. Some of the committee members also met with the Director of the Teacher Certification Department at the D.P.I.

The committee acted as the selection committee for the National Youth Science Camp delegates. This year’s delegates are:

Susan Kay Quitt, Cascade High School
Sara Kathleen Schnettler, Maquoketa Valley High School

Alternates:

Marc A. Schneider, Lost Nation Community School
Bambi Dawn Jackson, Morning Sun High School

The committee reviewed the Iowa High School Industrial Arts Curriculum Project for its science content. It also review the Iowa 4-9 Science Project as a model for small schools.

Election Committee

The Election Committee, chaired by Past President Duane Anderson, solicited names for the offices of President-elect and Board of Directors. The committee selected a slate of candidates, collected biographical information on each candidate and verified the counting of ballots. The slate presented was as follows:

President-elect: Bruce Friedrich

Directors: Wayne I. Anderson
Donald N. DuVick
Bruce W. Menzel
Ruth B. Swenson

The committee drafted the By-Laws changes for consideration by the Board of Directors. The committee Chair reported the results of the election at the Annual Meeting.

Finance Committee

The Finance Committee, chaired by Frank Starr, met once during the year to discuss ways of soliciting funds to support the Annual Meeting, how to build an endowment fund and to arrange for an audit of the Academy books. Through the Academy office $1,000 was received from the Rolscreen Foundation to support the Annual Meeting. Upon investigation by Starr it was found that an audit would cost $2,000 by an outside agency. No outside audit was initiated.

The committee considered ways of establishing a long term endowment but no specific plan was developed.

Heritage Project Steering Committee

As this project is essentially complete, no meetings were held this year. “Iowa’s Natural Heritage” is in the second printing with the first printing sold out. The costs for the project were extended onto the second printing and thus no large profits have been seen by the Academy.

The inventory of books owned by the Academy has been depleted and at this time the Academy must purchase books at cost from the Iowa Natural Heritage Foundation. When the cost of the project has been met the Academy will be able to purchase books at a much reduced rate which will allow the Academy to show a greater profit.

Iowa Science Foundation Committee

The Iowa Science Foundation Committee, chaired by Duane Anderson, completed its first year of operation by soliciting and funding eleven demonstration grants in nine areas: physical sciences, biological sciences, social sciences, science teaching, agricultural
sciences, emeritus scholar, public understanding of science, curation, and preserves. The foundation was funded by a $50,000 state appropriation.

The committee developed, through consultation with other states, guidelines for administering and funding for the Foundation on an ongoing basis.

The 1985-86 program was announced and 33 proposals were accepted, evaluated, and, when funds were approved for the 1985-86 fiscal year, 12 grants were approved.

The committee organized a symposium for the Annual Meeting on the projects funded during the first year of the Foundation.

The committee made initial contacts with corporations and foundations for funds to support the Foundation on a continuing basis. One thousand dollars was donated by the Life Investors Insurance Foundation.

The demonstration grants for 1984-85 were:

- Moror Mill Foray
- Clayton County Conservation Board. Don R. Menken, Director
- The Effects of Cold on the Intestinal Flora of a Laboratory Model of Farm Ruminants
- G. Edgar Folk, Jr., University of Iowa
- Ice Age Environments of Iowa
- R. Sanders Rhodes II, University of Iowa
- Shape Analysis of Stylistic Variation in Projectile Points
- Stephen C. Lensink, University of Iowa
- Biotechnology for Identification of Genes and Gana Products of Chicken Major Histocompatibility Complex
- A. W. Nordskog, Iowa State University
- Plant — Parasitic Nematodes in Non-cultivated Areas of Iowa
- Don C. Norton, Iowa State University
- Amplificaton, Integration and Curation of Fungus Herbarium
- Richard W. Pohl, Iowa State University
- Solving Suburban Wildlife Problems
- Indian Creek Nature Center. Rich Patterson, Director
- A Study of the Use of Technology as a focus for Science Teaching in Middle/Junior High Schools
- Lynn W. Glass, Iowa State University
- Science Reasoning Ability in Children
- Dale R. Phillips, Grant Wood AEA
- Iowa Science Reasoning Project (Grades 4-9)
- Dean Hartman, Grant Wood AEA
- Outdoor Physics Playground
- David C. Elliott, Des Moines Science Center

Long Range Planning Committee

The Long Range Planning Committee, chaired by Harry Horner, met once in 1984-85 to review the recommendations previously made on the administrative structure of the Academy and compensation to its administrative officers; i.e., Directors, Editors and Office Manager.

The committee reviewed the position of Treasurer and made the recommendation that the position be terminated as a result of the accounting duties being transferred to the Academy office.

The committee recommended that the position of Director of Meetings and Programs be established and staffed for a three year trial period.

The committee recommended that the Director of Meetings and Programs, the Editor of The Iowa Science Teachers Journal and the Director of the Iowa Junior Academy of Science receive a $500 honorarium in recognition of their service to the Academy.

The committee recommended that the Parish Farm Committee be commended for its past and present efforts to maintain and enhance the model farm concept while providing substantial income for the Academy.

The committee recommended that, as feasible, a portion of the farm income be diverted to investments of an endowment fund instead of being used for Academy operating expenses.

Membership Committee

The Membership Committee, chaired by Berna, White, met twice during the year and conducted other business by mail or telephone. The committee reviewed and reaffirmed the Fellow requirement previously recommended to the Board of Directors. The committee still favored the 5 year membership requirement for Fellow status, however, continued with the 3 year requirement for the present.

The committee reviewed Fellow nominations and recommended to the Board of Directors that Russell R. Rulon be promoted to Fellow.

The committee reviewed the present membership brochure and made recommendations on how it could be revised. It was suggested that pocket posters be distributed again in the Fall of 1985.

The committee recommended that 25 and 50 year members be recognized for their many years of support of the Academy. The 25 year members should be recognized in the I.A.S. Bulletin and 50 year members should receive a certificate in addition to being recognized in the I.A.S. Bulletin.

The committee discussed the feasibility of establishing a special elementary school membership category. The committee supported the concept of the Academy of encouraging elementary teachers to participate in the Academy but they did not recommend a special membership category.

Parish Farm Committee

The Parish Farm Committee, chaired by Karl Goellner, met once at the Parish Farm and conducted other business by telephone or mail.

The committee reviewed the progress of the transfer to custom farm operation and found that the change-over was proving profitable. The income from the 1986 crop was in excess of $50,000. The committee recommended that a minimum of $15,000 be set aside for next year's expenses so that it would not be necessary to obtain an operating loan for the 1986 crop.

The committee viewed the terraces and conservation plantings and found them to be in excellent condition. They recommended that a ditch on the east side of the property be cleaned and rebuilt. This was done in the spring.

The committee planned and held a 25th Anniversary Field Day at the Parish Farm on 15 June. Approximately 150 Academy members and Grundy County farmers attended. Agriculture Secretary Robert Lounsberry and Senator Alvin Miller also attended. Tours of the farm were conducted. A short program featured President John Downey describing the Academy's programs, Harry Horner describing the Parish Farm history, Jim Frevert explaining the farm management, Janet Schildroth describing the field improvements and Sam Gooden the conservation practices on the farm. The day provided some visibility and explanation of what the Academy is doing with the Parish Farm.

Agriculture Secretary Lounsberry made a short address.

Ad Hoc Public Information Committee

The Public Information Committee, chaired by Connie Mutel, met three times during the year to discuss ways to improve the visibility of science and scientists in the state through newspapers, radio and television. The committee sent out a request to all Academy
members for ideas about science stories they though would be of interest to the public. Over 45 responses were received. The committee reviewed the ideas and began investigating means of getting these news stories into the hands of newspapers and television reporters.

The committee investigated the possibility of co-sponsoring science programming on IPBN. Although it appeared to be expensive, the committee requested that $2,000 be included in the 1985-86 IAS budget for Public Information projects.

The committee also encouraged Iowa scientists to register with the national science rosters so that they may be contacted on topics of national interest.

**Ad Hoc Publications Committee**

This ad hoc committee, chaired by Don Norton, was formed by President Wacha to investigate new directions for the Proceedings and to assist the Editors in accomplishing goals they could see for the Proceedings. The committee met twice during the year.

The committee discussed the possibility of feature articles being published in each issue of the Proceedings or on an irregular basis. They also considered ways that financial support could be generated for the publication of the special articles.

The committee discussed ways of improving the image of the Proceedings while keeping within the goals of the Academy. One suggestion would be to change the name from Proceedings of the Iowa Academy of Science to Journal of the Iowa Academy of Science.

**Recognition and Awards Committee**

The Recognition and Awards Committee, chaired by Charles Wunder, met three times during the year to select nominees for the Governor's Science Awards and for the selection of the IAS awards. The committee firmly established the nomination forms and the material needed for both the Governor's Awards and the Academy's Awards. With the help of the Iowa Office of Planning and Programming, the committee solicited nominations for the Governor's Science Awards. The following persons were selected by the Governor from the names recommended by the committee:

- **John V. Atanasoff**, Science Application
- **Wayne H. Scholtes**, Iowa State University - Science Teaching
- **Donald S. Robertson**, Iowa State University - Science Achievement

The committee extensively revised the IAS Award nomination forms before calling for nominations. The committee reviewed the nominations and recommended to the Board the following persons for awards:

- **Arnold R. Hallauer**, Iowa State University - Distinguished Fellow
- **Walter F. Wedin**, Iowa State University - Distinguished Iowa Scientist
- **Harry T. Horner**, Iowa State University - Distinguished Service

**Student Programs Committee**

The Student Programs Committee, chaired by Joe Moore, met once this year to discuss the Iowa Junior Academy of Science program, Outstanding Science Student Award program and the Physics of Amusement Parks day.

The IJAS grants evaluation was done by the committee with 11 grants given totaling $1,187.11. The following secondary school grants were made:

- **Investigations of natural substances as anti-cancer agents** - Barb Caruthers, Marshalltown High School
- **The effects of very hard X-ray radiation and microwaves on high-temperature integrated microcircuits** - Geoffrey Francis, Marshalltown Senior High School
- **Seedcorn in a microwave for different amounts of time, to examine different stages of growth** - Pam Grim, Miller Junior High School, Marshalltown
- **Field testing compaction of prairie grass for better germination** - Rod Hauser, Marshalltown Senior High School
- **Effects of pesticides on protozoa** - Brett Iverson, Miller Junior High School, Marshalltown

The effect of stimuli on the reproduction and algal growth in the hydra.

Dawn Kaufman, Center Point Consolidated School

Detection of gaseous pollutants given off by portable kerosene heaters.

Jonathan C. Keck, Mount Pleasant Community High School

Interferon's effect on plant cancer.

Jane E. Kothenbeutel, Marshalltown High School

The effect of heavy metals on algal growth and metabolism.

Amy Naughton, Marshalltown Senior High School

The effects of different colors of light on Andis Carolinesis: the American chameleon.

Scott Olswold, Mason City High School

Computerize a Parabolic mirror to locate and aim solar rays into a solar collector for maximum heat collection on a twenty-four hour basis.

Dean Peterson, Grand Community School, Boxholm

The following students were selected as National Youth Science Camp delegates and alternates by the committee:

- **Susan Kay Quint**, Cascade High School
- **Sara Kathleen Schnittjer**, Maquoketa Valley High School
- **Alternates**: Marc A. Schneider, Lost Nation Community School
- Bambi Dawn Jackson, Morning Sun High School

The Student Programs Committee evaluated the applications for the Outstanding Science Student Award medals. The committee approved 214 medals in 214 schools. The names of the recipients appeared in the June issue of the IAS Bulletin.

The Iowa Junior Academy of Science sponsored the Iowa Physics Olympiad and several other student activities.

Support for the student programs came from a contribution for $5,000 from the Pioneer Hi-Bred International, Inc. and $1,000 from the A.A.A.S. for the student research grants.

**Excellence in Science Teaching Award**

The Excellence in Science Teaching program was directed by Gary Downs of Iowa State University. Six subcommittees reviewed approximately 65 nominations to select the following persons to receive Excellence in Science Teaching Awards at the Annual Meeting:

- **Robert Sandquist** (Biological), Newton Senior High School, Newton
- **John Emerson** (Chemistry), Ogden Community High School, Ogden
- **William J. Desmarais** (Earth Science), George Washington Senior High School, Cedar Rapids
- **Phyllis Fritchen** (Elementary Science), Ottumwa Community Schools, Ottumwa
- **Lloyd Phillips** (Junior High Science), Knoxville Junior High School, Knoxville
- **Don Schaefer** (Physics), Bettendorf High School, Bettendorf
SECTION ACTIVITIES

In addition to the programs organized by the section for the Annual Meeting, two sections held other meetings during the year.

Chemical Education

The Chemical Education Section held a fall afternoon and evening meeting in Ames, Iowa. The program centered around microcomputer interfacing to experiments. Speakers were Don Murphy of Hoover High School, Des Moines, Jeff Balvanz of Iowa State University Computer Center, Glen Newburger of Iowa State University Chemistry Department, and James Macmillan of University of Northern Iowa Chemistry Department. Approximately 50 person attended and were allowed hands-on experience with some of the interfacing experiments and software.

Iowa Science Teachers Section Fall Conference

The Iowa Science Teachers Section held their Annual Fall Conference at the Starlite Village in Ames, Iowa. The program of four concurrent sessions and workshops was highlighted by a presentation by Harry K. Wong, teacher/consultant of the TKI curriculum project, Los Lomitas School District, Sunnyvale, California. Over 300 teachers attended the one day event.

A workshop for elementary science teachers spanned the conference, starting on the day before and continuing to the day after. The workshop was a joint effort of Iowa State University, University of Iowa, University of Northern Iowa and Drake University. Instructors were Gary Downs, ISU; James Shymansky, U of I, Carl Bollwinkel, UNI, and Paul Joslin, Drake University. 24 teachers participated in the workshop.

Administration

On December 31, 1984 Robert Hanson completed his appointment as Managing Editor of Publications and those duties were assumed by James Macmillan. This action completed the transfer of responsibilities from Hanson to Macmillan started in 1982.

The Board of Directors accepted the recommendation of the Long Range Planning Committee to create the position of Director of Meetings and Programs. The position was advertised, candidates were interviewed and Gary Downs of Iowa State University was given a three year appointment. Down's responsibility would predominately be chair the Annual Meeting Committee and coordinate the Annual Meeting program. He became involved in the 1985 meeting in preparation for the 1986 meeting.

As a result of the new responsibilities, Gary Downs asked to be relieved of his duties regarding the Excellence in Science Teaching Award. A new director was sought by Roy Unruh of the University of Northern Iowa taking the position.

This year a major change in the Bylaws resulted in the elimination of the Treasurer's position. This change was felt to be appropriate due to the accounting system being handled by the Academy office.

Grants

The first year of the U.S. Department of Education grant, PRISMS, was completed on December 31, 1984. An extension of one year for $95,000 was applied for. The grant was approved for $70,129 with the provision that the remaining $24,871 might become available later.

The NSF grant applied for in 1984 by Jack Gerlovich and James Macmillan was not approved.

To help support the General Session speakers at the Annual Meeting $1,000 was received from Rollescreen Foundation.

Publications

The PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCE, edited by Roger and Marilyn Bachmann, is published on a calendar year basis. In 1984, Volume 91, four issues were published with 26 articles, 164 pages and 52 authors of which 44 were members and 8 were non-members.

Part of Volume 92, a special issue in January, 1985, was devoted to a biography of Louis Pammel written by Marjorie Pohl. This special issue was supported by funds from the Robert W. Hanson Special Publications Fund, the first work to be supported by this fund.

The Academy has agreed to manage the editing of the manuscript "Mushrooms ns Fungi of the Midwesten States" written by Lois Tiffany and George Knaphus of Iowa State University and Don Huffman of Central College. The manuscript is in the review stage at this time.

The IOWA SCIENCE TEACHERS JOURNAL, edited by Carl Bollwinkel, is published three times each year. In 1984, Volume 21 had 84 pages, 14 articles by 15 authors of which six were members and nine were nonmembers.

Both publications appear to be functioning smoothly under the direction of the editors.

The Academy has two newsletters, the I.A.S. BULLETIN, edited by James Macmillan and the Iowa Junior Academy of Science Newsletter edited by Joe Moore. Each of the newsletters had two issues during last year.

National Involvement

This year the President-elect (1984-85) John Downey and James Macmillan served as the two delegates to the AAAS meeting held in Los Angeles as part of the AAAS meeting. Due to travel difficulties only John Downey attended the meeting.

Membership

Table 4 shows the membership trends over the past five years. In 1985 the Associate Member category was combined with regular membership. The membership stood at 1491 as of June 30, 1985. This is exactly the same as last year. There were some changes in the distribution between categories. There was an increase in the number of regular Members (+32), a decrease in the number of Student Members (-9) and Fellows (-24). The number of Life Members stayed the same while both the Emeritus (+2) and Distinguished Fellows (+2) increased.

<table>
<thead>
<tr>
<th>Table 4. Membership 1981-1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Associate</td>
</tr>
<tr>
<td>Member</td>
</tr>
<tr>
<td>Student</td>
</tr>
<tr>
<td>Fellow</td>
</tr>
<tr>
<td>Life Member</td>
</tr>
<tr>
<td>Emeritus</td>
</tr>
<tr>
<td>Distinguished Fellow</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
Table 5 shows the number of persons showing interest in the sections. Since a person can indicate more than one section interest the numbers are not additive.

Table 5. Membership by Sections, June 30, 1985

<table>
<thead>
<tr>
<th>Section</th>
<th>1985</th>
<th>Relative Section Interest* %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sciences</td>
<td>(U)</td>
<td>125</td>
</tr>
<tr>
<td>Anthropology</td>
<td>(H)</td>
<td>42</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>(K)</td>
<td>2</td>
</tr>
<tr>
<td>Botany</td>
<td>(G)</td>
<td>290</td>
</tr>
<tr>
<td>Chemical Education</td>
<td>(S)</td>
<td>104</td>
</tr>
<tr>
<td>Conservation</td>
<td>(J)</td>
<td>248</td>
</tr>
<tr>
<td>Engineering</td>
<td>(M)</td>
<td>76</td>
</tr>
<tr>
<td>Geology</td>
<td>(E)</td>
<td>170</td>
</tr>
<tr>
<td>Inorg., Anal, &amp;</td>
<td>(C)</td>
<td>191</td>
</tr>
<tr>
<td>Physical Chemistry</td>
<td>(R)</td>
<td>49</td>
</tr>
<tr>
<td>Linguistics</td>
<td>(N)</td>
<td>15</td>
</tr>
<tr>
<td>Org. &amp; Biol. Chemistry</td>
<td>(D)</td>
<td>134</td>
</tr>
<tr>
<td>Physics</td>
<td>(B)</td>
<td>142</td>
</tr>
<tr>
<td>Physiology</td>
<td>(O)</td>
<td>124</td>
</tr>
<tr>
<td>Psychology</td>
<td>(I)</td>
<td>39</td>
</tr>
<tr>
<td>Science Tech. or Sci. Ed.</td>
<td>(Q)</td>
<td>460</td>
</tr>
<tr>
<td>Zoology</td>
<td>(F)</td>
<td>245</td>
</tr>
</tbody>
</table>

*Relative Section Interest is the percent of all IAS members indicating a particular section interest. The percents are not additive because of multiple section interest.

FINANCIAL REPORT

An operating budget of $139,600 was adopted at the April 25 Board meeting. This budget includes $50,000 of Iowa Science Foundation grant and the $10,400 state appropriation. Both of these were reduced by 1.0% in the final appropriations bill. The budget did not include the University of Northern Iowa subsidy. The adopted budget also did not include the remaining part of the U.S. Department of Education grant for $70,129. The total combined budget will be $209,729.

The estimated income for 1985-86 is $139,600. In addition to the normal income from dues, interest on investments and publications the Academy receives a grant from AAAS for student research grants and from Pioneer Hi-Bred International for student programs. The Rolscreen Foundation supports the Outstanding Science Student Award program by supplying the medals. These grants increase the income of the Academy significantly; however, there are off-setting expenses for which these grants are committed.

Table 6 is the Balance Sheet for the fiscal year ending June 30, 1985. The total Assets of the Academy stands at $94,737.08 which includes the PRISMS grant but does not include the value of the Parish Farm or the office equipment. Due to the larger than expected farm income this year, the long term note on the IBM Displaywriter was retired. This will result in a significant savings in interest over the next three years. The Academy does not have any long term liabilities. The total liabilities for the Academy are $8,330.42. This results in a net income for 1984-85 of $57,062.52 of which $27,394.20 is committed to the PRISMS project. The total equity of the Academy is $86,406.66 less the funds committed to PRISMS. This is a significant increase in total equity over last year.

It has also been possible to put the Parish Farm operation on a cash basis. In the past, it has been necessary to take out a short term operating loan for planting, fertilizers, chemicals and field work. This year it was possible to pay cash for all of the above services. With the present interest rates this will be a significant savings.

Table 7 and 8 accurately reflect the funds which passed through the Academy’s books in 1984-85. The total income was $323,597.81. In Table 7 column one is the actual income of the Academy by category. Columns two through six show how the income has been allocated. The allocation of dues income was used to offset the expenses for the publications and meetings while the allocation of farm income was used to offset the administrative expenses. Excess farm income was allocated to reserves.

Table 8 shows the actual expenses for 1984-85 by category. Again, the first column shows the actual expenditures while columns two through five show how these expenditures were allocated.

At the bottom of Table 8 is shown that the income for the Academy as $57,062.52. This was due to the excellent farm income and the fact that we underestimated our expenses in last year’s budget. Part of this income will be put into reserves for farm operations and into long term Academy investments.
Table 7. Income Allocation, 1984-85

<table>
<thead>
<tr>
<th>INCOME</th>
<th>Amount</th>
<th>Publications</th>
<th>Programs</th>
<th>Meetings</th>
<th>Administration</th>
<th>Reserves</th>
<th>PRISMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pub. Sales</td>
<td>9,115.19</td>
<td>9,115.19</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Reprint Sales</td>
<td>482.00</td>
<td>482.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Reimbursements</td>
<td>4,227.09</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>291.09</td>
<td>0.00</td>
<td>3,936.00</td>
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<tr>
<td>Interest/Div.</td>
<td>3,469.52</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3,294.99</td>
<td>174.53</td>
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<tr>
<td>Registration Fee</td>
<td>3,521.21</td>
<td>0.00</td>
<td>460.61</td>
<td>3,060.60</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Dues</td>
<td>23,036.50</td>
<td>9,462.54</td>
<td>0.00</td>
<td>6,560.74</td>
<td>7,013.22</td>
<td>0.00</td>
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<tr>
<td>Other Fees</td>
<td>2,970.00</td>
<td>1,535.00</td>
<td>0.00</td>
<td>1,435.00</td>
<td>0.00</td>
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<tr>
<td>Workshops</td>
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<td>512.25</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
<td>Individual Cont.</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>570.00</td>
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<tr>
<td>Corporate Gifts</td>
<td>7,000.00</td>
<td>0.00</td>
<td>6,000.00</td>
<td>1,000.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Non-Federal Grant</td>
<td>1,000.00</td>
<td>0.00</td>
<td>1,000.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>PRISMS Grant</td>
<td>153,447.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>153,447.00</td>
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<tr>
<td>State Aid</td>
<td>60,400.00</td>
<td>4,400.00</td>
<td>53,390.40</td>
<td>0.00</td>
<td>2,609.60</td>
<td>0.00</td>
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<tr>
<td>Misc.</td>
<td>6,347.05</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>6,347.05</td>
<td>0.00</td>
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<tr>
<td>Farm Transfer</td>
<td>47,500.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>20,470.96</td>
<td>27,029.04</td>
<td>0.00</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>323,597.81</td>
<td>24,994.73</td>
<td>61,363.26</td>
<td>12,056.34</td>
<td>40,026.91</td>
<td>27,773.57</td>
<td>157,383.00</td>
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<tr>
<td>UNI Subsidy</td>
<td>10,628.37</td>
<td>1,620.00</td>
<td>0.00</td>
<td>0.00</td>
<td>9,008.37</td>
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<td>0.00</td>
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<tr>
<td><strong>TOTAL INCOME</strong></td>
<td>334,226.18</td>
<td>26,614.73</td>
<td>61,363.26</td>
<td>12,056.34</td>
<td>49,035.28</td>
<td>27,773.57</td>
<td>157,383.00</td>
</tr>
</tbody>
</table>

Table 8. Expense Allocation, 1984-85

<table>
<thead>
<tr>
<th>EXPENSE</th>
<th>Amount</th>
<th>Publications</th>
<th>Programs</th>
<th>Meetings</th>
<th>Administration</th>
<th>PRISMS</th>
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</thead>
<tbody>
<tr>
<td>Grants</td>
<td>48,009.66</td>
<td>0.00</td>
<td>48,009.66</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
<td>Honoraria</td>
<td>91,837.49</td>
<td>4,734.00</td>
<td>3,350.96</td>
<td>2,500.00</td>
<td>10,052.88</td>
<td>71,199.65</td>
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<td><strong>TOTAL INCOME</strong></td>
<td>334,226.18</td>
<td>(From Table 7)</td>
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**NET INCOME** 57,062.52
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PAPER PRESENTATIONS, ANNUAL MEETING 1985

Invited Junior Academy Papers
Mark E. Anderson, Davenport Central High School — Analyzing Rutherford Backscattering (RBS) Spectra Formed with Lithium Ions
William C. Carr, Jr., Davenport Central High School — Splash Chambers: Can They be Used to Study Aerodynamics?
Gretchen Edlund, Davenport Central High School — The Digestion of Wrigley's Chewing Gum
Tom Egger, West Middle School, Muscatine — In situ Capture of Sulfur Dioxide by Limestone in Fluidized Bed Combustion of Coal
Geoffrey S. Francis, Marshalltown Senior High School — The Effects of Radiation on Integrated Circuits
Rod Hauser, Marshalltown Senior High School — Field Testing Germination of Prairie Grasses in a Compacte$ Seed Bed
Chong C. Lee, Mason City High School — Quantitative and Qualitative Aspects of B Lymphocyte Separation Systems
Martha Jo Myers, Davenport Central High School — The Effect of Increased Light Exposure on Grafted Hibiscus Plants
Gail Marie Slama, Mar-Mac High School — The Preliminary Studies of the Effects of Phorbol Ester and Lipopolysaccharid on IgA Production on Murine Myeloma Cells in vivo
Christine Stoffel, Bettendorf High School — Further Investigations into the Allelopathic Activities of Buckhorn Plantain

Contributed Papers

(All abstracts of contributed papers received on time appeared in the March 1985 PROCEEDINGS as an insert).