

# ARKANSAS ACADEMY OF SCIENCE

Volume XXXIII

1979

## Proceedings

P. Max Johnston  
President

Richard L. Richards  
President-Elect

John T. Gilmour  
Secretary

William L. Evans  
Treasurer

Robert T. Kirkwood  
Historian

## Secretary's Report

### MINUTES OF THE SIXTY-THIRD ANNUAL MEETING—6-7 April 1979

#### FIRST BUSINESS MEETING

Dr. P. M. Johnston, President, opened the meeting. He introduced Dr. Roy Schilling, President of Hendrix College, who welcomed the Academy to his institution.

President Johnston recognized Dr. John Gilmour for the Secretary's report. Gilmour reported that the Proceedings of the sixty-second meeting of the Academy containing minutes of the First and Second Business Meetings were available. He said a motion for approval of the minutes would be made at the Second Business Meeting.

President Johnston then introduced Dr. Charles Leone, Vice-President and Provost of the University of Arkansas, Fayetteville. Leone described a new National Science Foundation Experimental Program to Stimulate Competitive Research. He said a Planning Proposal had been completed which would: a) conduct a survey of scientific potential in Arkansas and evaluate that potential, b) formulate criteria for selecting research areas to be developed, c) stimulate submission of nationally competitive research proposals, and d) prepare an implementation proposal to be funded by NSF for \$3 million over a period of 5 years. He asked the Arkansas Academy of Science to endorse this proposal. Discussion followed. Dr. W. L. Evans then made the following motion.

On behalf of the Executive Committee of the Arkansas Academy of Science, I move that the Academy and its members offer full cooperation and assistance in every way possible for this project.

The motion was seconded and passed.

President Johnston then recognized Dr. William L. Evans for the Treasurer's report. Evans stated that financial statements were available. He then discussed the financial statement shown below.

#### Financial Statement

March 31, 1979

Cash Balance in Checking Account, March 23, 1978	\$1,090.59
Less Outstanding Checks (449, 453)	117.55
Funds in Checking Account, March 23, 1978	\$ 973.04
PSLA (Heritage) Certificate Acct 71-950	1,204.99
PSLA (Heritage) Passbook Acct 7679	2,982.63
Total Funds, March 23, 1978	\$5,160.66

Income (March 24, 1978 through March 31, 1979)

1. Memberships	\$1,926.00
a. Sustaining	\$ 410.00
b. Regular	1,364.00
c. Associate	172.00
2. Institutional Dues	900.00
3. Subscriptions to the PROCEEDINGS	1,096.00
4. Page charges for the PROCEEDINGS	938.88

5. Support, UA Foundation, Fayetteville Mtg.	438.00
6. Junior Academy Funds Returned	65.95
7. Donations for BIODA	16.50
8. UA (WREC) Support for Symposium & Banquet	700.00
9. Interest on Reserve Funds (NR)	243.48
a. Certificate (6.5%)	101.97
b. Passbook (5.25%)	141.51
Total Income	\$6,324.81

Disbursements (March 24, 1978 through March 31, 1979)

1. Meeting Expenses	\$1,004.39
a. UA, Printing (461)	38.15
b. UA, Banquet Chg. (464)	966.24
2. Operating Expenses	131.61
a. Assoc. Acad. Sci., Duna (457)	23.70
b. Carson, Typing (458)	2.50
c. Boyette Typing (462)	6.25
d. Postmaster, Summer Box Rent (463)	4.00
e. UA, Printing (465)	2.85
f. Postmaster, Fall Box Rent (469)	7.00
g. Postmaster, Postage (475)	18.00
h. McRoy & McHair, Stationery (480)	44.01
i. UA, Printing (481)	1.80
j. Postmaster, Spring Box Rent (482)	7.00
k. Postmaster, Postage (489)	7.50
l. Bank Service Charges	7.00
3. Awards	664.75
a. Shaddox, Sci. Talent (454)	20.00
b. Rogers, Sci. Talent (455)	15.00
c. Canterna, Collegiate Acad. (456)	100.00
d. Ark. Sci. Fair Assn. Support (459)	100.00
e. Ark. Jr. Acad. Support (468)	100.00
f. Price, UCA Conf. (478)	75.00
g. Ark. Collegiate Acad. Travel (484)	50.00
h. Day Timers, Certif. (487)	50.00
i. SW Prtg, Sci. Talent Certif. (490)	53.81
j. Best Sports, Inc., Plaques (491)	100.94
4. Publication of the PROCEEDINGS	4,812.76
a. Phillips Litho, Printing (460)	4,256.95
b. Gilmour, Postage (466)	18.12
c. Editorial Asst. Salary (470)	126.70
d. Gilmour, Postage (471)	8.96
e. Editorial Asst. Salary (472)	79.20
f. ALS Travel Agency, Editor (473)	57.00
g. Gilmour, Postage (478)	3.60
h. Dept. Fin. & Admin. Tax (483)	4.90
i. Editorial Asst. Salary (485)	190.00
j. Heidt, Postage (486)	4.49
k. Heidt, Travel (488)	62.84
5. Publication of the NEWSLETTER	94.45
a. Fay, Bus Station, Ship. (474)	4.65
b. Robinson, Postage (477)	26.80
c. UA, Printing (479)	63.00
Total Disbursements	\$6,707.96

#### Summary

Beginning Balance, Checking and Reserve	95,160.66
Total Income	+6,324.81
Total Expenditures	-6,707.96
Funds on Hand, March 31, 1979	\$4,777.51
Outstanding Bills, March 31, 1979	3,202.25
Unobligated Funds	\$1,575.26

Distribution of Funds on Hand

Balance, Checking Account, Melroy Bank 3/31/79	\$1,447.35
Less Outstanding Check (A91) 3/28/79	100.94
Checkbook Balance	\$1,346.41
Heritage SL Certificate Acct 71-95000	1,306.96
Heritage Passbook Acct 7679	2,124.14
Total Funds March 31, 1979	\$4,777.51

Respectfully Submitted,

William L. Evans  
Treasurer

Evans said a motion for approval would be made at the Second Business Meeting. He then reported that the Research Fund currently contains \$844.

President Johnston recognized Dr. Clarence Sinclair, Chairman of the Nominating Committee who gave the following report.

The members of the Nominating Committee, as appointed by you, were Dr. Earl Hannebrink and Dr. David Becker with myself as chairman. We compiled a potential list of candidates, then asked each candidate if he/she would serve if elected, then narrowed the field to two for each position. The names submitted to the Academy for the two positions are as listed below.

I. For President-Elect  
H. Robison - UASM  
E. Bacon - UAM

II. For Secretary  
D. Chittenden - ASU  
D. L. Zachry - UAF

President Johnston asked for nominations from the floor. There were none. He then moved that the slate be accepted. The motion was seconded and passed.

President Johnston then recognized Dr. Gary Heidt, Editor, who gave the following report.

I would again like to thank the Associate Editors for their help in handling the Section Programs for this meeting and seeing that the submitted manuscripts from last year were reviewed by competent scientists in the appropriate areas of expertise. These tasks have greatly reduced the work load of the Editor and are greatly appreciated.

A total of 39 manuscripts was submitted for publication in Volume 32 of the Proceedings of the Arkansas Academy of Science. Of these, 3 were deemed unsuitable for publication and 5 others were withdrawn, either editorially or by the authors for various reasons. Of the remaining 31 manuscripts, 22 appear as Feature Articles and 9 as General Notes.

Because this issue of the Proceedings is smaller, both in pages [94 as opposed to 123 in 1977] and printed copies [450 as opposed to 500], the total cost of producing this year's issue was \$3202 plus editorial expenses. This amounts to \$7.00/book rather than last year's \$8.25. In addition, Phillips Litho of Springdale only increased their prices 5%; thus, we have received a temporary reprieve in the battle of cost control.

I am looking forward to receiving a group of quality manuscripts from this meeting and producing a Proceedings of which the scientific community of Arkansas can remain proud.

Heidt then made the following motion.

I would like to move that the Academy allocate \$400 for editorial assistance in preparing Volume 33 [1979] of the Proceedings of the Arkansas Academy of Science during the next Academy fiscal year.

The motion was seconded and passed.

President Johnston then called upon Mr. Tom Palko who gave the following report on the Junior Sciences and Humanities Symposium.

Delegates representing 80 schools (statewide) attended the 13th annual Arkansas JSHS on March 22-24, 1979, at Arkansas Tech University in Russellville, Arkansas. Seventeen papers chosen from 73 submitted were read. The program was well received by the delegates. It consisted of, in addition to the student paper presentors, tours, speakers, and entertainment events.

President Johnston recognized Dr. Carl Rutledge, President of the Arkansas Science Fair Association, for the report shown below.

The Arkansas State Science Fair was held Friday and Saturday, March 30 and 31, at Ouachita Baptist University in Arkadelphia. The number of projects exhibited increased to 95 this year because of the new regional science fair held at the University of Arkansas in Monticello, bringing the total number of regional fairs in the state to five. Because of increased science fair activity in the Little Rock area, there is a possibility that another regional fair will be added at the University of Arkansas at Little Rock next year.

The two grand prize winners this year were Eddie Calhoun, Springdale, taught by W. A. Merrifield, and Brenda Kirksey, Green County Tech High School, Paragould, whose teacher is Sandra Tedder. Calhoun's project was an engineering study of "Design and Stresses in a Truss", while Ms. Kirksey determined the "Effects of Caffeine on Nonmammals." They will represent the state of Arkansas at the 30th International Science and Engineering Fair in San Antonio, Texas, May 7-11.

The financial status of the Science Fair is good, with over \$1650 already received this year, but about \$350 more will be needed to pay all the expenses. The \$300 affiliation fee has already been paid, and \$600 checks presented to the teachers of the winners. Travel will be less this year, but hotel bills will be over \$50/day/room.

Rutledge then made the following motion.

The Arkansas Science Fair Association thanks the Arkansas Academy of Science for its support in the past, and hereby requests the usual annual contribution of \$100 for the year 1979. I move that this request be granted.

The motion was seconded and passed.

President Johnston then called upon Mrs. Marie Arthur, State Director of the Junior Academy of Science who gave the following report.

The Junior Academy has functioned well this year. The State meeting was held at Ouachita Baptist University on March 30, with forty-one research papers presented representing the four regional divisions. The papers were judged in the categories: Math and Computers, Earth and Space Science, Physics and Engineering, Chemistry, Behavioral and Social Science, Microbiology, Medicine and Health, Zoology, Botany, with judges being assigned by Ouachita Baptist University.

David Wickliff of Fayetteville was chosen to represent Arkansas at the National Junior Academy in San Francisco and to present his paper, "An Effect of Ultra Violet Light on Oxygen Consumption of *Vigna sinensis* Leaf Tissue." Steve Taylor of Siloam Springs was chosen as alternate. It is possible that one or two other students may also attend the National at their own expense.

At the business meeting, a revised constitution was adopted to be presented to the Arkansas Academy of Science for consideration on April 6. If approved by both the Academy and the Arkansas Activities Association, all local chapters will be

rechartered and a new and complete roster of chapters and members will be compiled and maintained.

An attempt was made this year to disseminate information concerning the Academy to science teachers in the state by personal contact and by television. The results have been encouraging, with a number of teachers seeking information and new schools participating.

Mrs. Arthur then made the following motion.

I move that revisions in the Constitution of the Junior Academy of Science approved by the Executive Committee of the Senior Academy be accepted and that the Academy provide \$200 support to the Junior Academy for the coming year.

The motion was seconded and passed.

President Johnston announced the appointment of the Auditing (Clark McCarty, Neal Buffalo), Resolutions (John Sealander, Jewel Moore) and Meeting Place (Glen Good, Ed Bacon) Committees. He noted that Arkansas State University had already extended an invitation for 1980 Annual meeting. Thus, the Meeting Place Committee would be considering locations for the 1981 Annual Meeting.

President Johnston then made some general announcements and adjourned the First Business Meeting.

#### SECOND BUSINESS MEETING

President Johnston called the Second Business Meeting to order. Election of officers was conducted by ballot. Henry Robison was elected to the office of President-Elect and David Chittenden was elected to the office of Secretary.

President Johnston then recognized Dr. John Gilmour who made the following motion.

I move that the minutes of the 62nd Annual Meeting published in the 32nd Proceedings of the Arkansas Academy of Science be approved as written.

The motion was seconded and passed. The Secretary notes that the Sponsor of the Collegiate Academy is Dr. Glen Good, not Dr. Glen Wood as written in the minutes.

President Johnston recognized Dr. William Evans who made the following motion.

I move the acceptance and approval of the Treasurer's financial statement and report for the period March 24, 1978, through March 31, 1979, as submitted to the Membership at the first Business Meeting and circulated.

President Johnston pointed out a replacement Auditing Committee of Leon Richards and James Nichols had been named after the First Business Meeting. Leon Richards made the following report.

James Nichols and myself audited the books. We found the financial records correct, and Dr. Bill Evans should be commended for this work.

The motion was seconded and passed.

President Johnston called on the Historian, Professor Robert Kirkwood, who reported that the cost of a banquet at the first meeting of the Academy at Hendrix was one dollar.

President Johnston then recognized Dr. Glen Good for the Collegiate Academy Report shown below.

The Arkansas Collegiate Academy of Science has been emphasizing increased membership during 1978-1979. One of the major problems plaguing the Collegiate Academy during

the past two years has been lack of interest and discontinuity. President Rich Brown of Ouachita Baptist University, and President-Elect Frank Brown of Harding College, along with Sandra Thompson, Secretary and David Dube, Treasurer (both of Ouachita) have worked in their own schools to promote interest, and have sent out information regarding the Collegiate Academy's annual meeting at Hendrix College.

The problems of discontinuity, low membership, and low interest are by no means solved. The officers of the Collegiate Academy feel that help from faculty members of the Senior Academy in promoting interest in their own schools will be the key to promoting membership. Then student research can be promoted more effectively. Again, faculty-student interaction is the key to a strong Academy of Science, both for the college student and the faculty member.

The Collegiate Academy congratulates those students presenting research at the 1979 meeting of the Arkansas Academy of Science.

The Collegiate Academy conducted its annual business meeting Friday April 6, 1979, and elected the following officers: Jane Spandley from Hendrix as President-elect; Pam Ellington of Harding as Treasurer. Arthur Johnson was selected as co-sponsor for the Collegiate Academy.

Rich Brown, outgoing President, gave a talk entitled "Recombinant DNA".

The new President, Frank Brown of Harding, assumed his duties, and the sponsor will be Ed Wilson.

Of the \$175 granted by the Senior Academy, \$50 was requested for travel and replenishing the supply of stationery and envelopes. This leaves a balance of \$45 in the treasury for the new president.

Good then made the following motion.

I move that the Senior Academy approve up to \$175 to cover expenses and operations of the Collegiate Academy for the coming year.

The motion was seconded and passed.

President Johnston then called on Dr. Leo Paulissen for a report on the Arkansas Science Talent Search. The report is shown below:

For the first time in twenty-eight years of participation, there are three honorees from Arkansas in the Westinghouse Science Talent Search. And, for the second time, one of these is a "winner" and was awarded an all-expense trip to Washington, D.C. These three people are the state winners this year and are being awarded cash prizes and certificates.

#### First Place:

Elizabeth Anne Thiele  
School: Southside High School, Ft. Smith  
Teacher: Larry E. Withers  
Project: The purification and characterization of bovine placental lactogen.

#### Second Place:

Keley Irwin Nix  
School: Arkansas Senior High School, Texarkana  
Teacher: W. A. Dempsey  
Project: The thermal separating effect of a forced vortex as exhibited by the vortex tube.

#### Third Place:

Wesley Frederic Trott  
School: Hot Springs High School, Hot Springs  
Teacher: Richmond G. Edwards  
Project: A study of the effects of radiation and temperature surrounding the Hot Springs in Hot Springs National Park, Arkansas.

## Secretary's Report

President Johnston recognized Dr. Henry Robison, Editor of the Newsletter, who made the following motion.

I move that \$100 be set aside for the Newsletter next year.

The motion was seconded and passed.

President Johnston then recognized Dr. Ed Bacon of the Meeting Place Committee who made the following recommendation and motion.

The Meeting Place Committee recommends that the invitation of Arkansas State University for the 1980 meeting to be held on 4-5 April 1980, be accepted and that the University of Arkansas at Little Rock be considered for the 1981 meeting. I move that the invitation of Arkansas State University be accepted.

The motion was seconded and passed.

President Johnston then asked that the Academy give special thanks to Dr. Art Johnson for his efforts in arranging this year's meeting.

President Johnston recognized Dr. John Sealander, Resolutions Committee, who read the following.

Be it resolved:

By the members of the Academy in session on April 7 at Hendrix College in Conway that the Academy wishes to express its sincere thanks and appreciation to Dr. Roy B. Shilling, President of Hendrix College, and to the faculty and staff of Hendrix College for the use of their facilities and their warm hospitality.

Furthermore, the Academy extends its congratulations to the local Arrangements Committee, Dr. Arthur Johnson, chairman, and to the chairpersons of the Academy sections: Alex Nisbet, Robert Eslinger, Dale V. Ferguson, John K. Beadles, Neal Buffalo, Robert Kirkwood, John Rickett, Walter L. Manger and Charles Niquette.

The Academy also wishes to express its thanks to P. M. Johnston, President of the Academy, John Gilmour, Secretary, William L. Evans, Treasurer, Gary Heidt, Editor, Robert Kirkwood, Historian, and Henry Robison, Editor of the Newsletter, for the excellent manner in which they have discharged their duties during the past year.

The Academy also expresses its congratulations to the outstanding work of the organizations sponsored by the Academy and its appreciation to the sponsors and directors of these groups: Marie Arthur, Director of the Junior Academy of Science; Tom Palko, Director, Junior Science and Humanities Symposium; Glen Good, Sponsor, Collegiate Academy of Science; Carl Rutledge, Director, State Science Fair; Leo Paulissen, Science Talent Search and to Wayne Everett, Coordinator and Liason Officer for all sponsored activities.

The Academy also expresses its thanks to the following exhibitors: Science Instructional Supplies, Inc.; Micro-Tech Instruments, Inc.; Info Lab; Preiser Scientific Co. and Actinorex.

Sealander moved the resolution be adopted. The motion was seconded and passed.

President Johnston recognized Dr. Jewel Moore who made the following motion.

I move that a committee be appointed to consider the certification requirements for the teaching of sciences in the high schools of the state.

The motion was seconded and passed.

President Johnston appointed Denver Prince, E. E. Hudson and Jewel Moore to serve on the committee described in the motion above.

President Johnston noted that memorial contributions in memory of Ruth Armstrong could be made to the Fort Smith Audubon Society or the University of Arkansas Foundation for the Class of 1926.

President Johnston asked for new business.

Dr. Gary Heidt then made the following motion.

I move that the Arkansas Academy of Science, through the Executive Committee, do something appropriate in the memory of Dr. James A. Scholtz, who had served the past several years as the Anthropology Associate Editor for the Proceedings of the Arkansas Academy of Science.

The motion was seconded and passed.

President Johnston then recognized Dr. Leo Paulissen who noted that the third installment of the Biota Survey is available from him. Paulissen encouraged members to send updated and new lists.

President Johnston called on Dr. Glen Good who noted that no collegiate awards were given this year because of scheduling difficulties.

President Johnston then made his farewell address in which he stated that the year had been a learning experience for him. President Johnston passed the gavel to Dr. Leon Richards, President-Elect, who presented Dr. Johnston a certificate of appreciation for his year as President.

President Richards then appointed a Nominating committee of Jewel Moore (Chairman), Dan England and Jim Wickliff and a Constitutional Revision Committee composed of Art Johnson (Chairman), Ed Dale and Dave Chittenden.

President Richards adjourned the Second Business Meeting.

Respectfully submitted,

John T. Gilmour  
Secretary