2000


Academy Editors

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First Business Meeting
7 April 2000

Number present: 15

1. Meeting called to order at 8:40 a.m. by president, Dr. Mostafa Hemmati. Minutes of previous meeting approved.

2. Local Arrangements Committee Chair: David Saugey, Committee Chairman, recognized the assistance of Dr. Logan, principal of the Mathematics and Science School, and described the activities scheduled during the meeting. At that time, 115 persons were registered and 69 presentations were scheduled. Motion to accept this report was made by Johnson, seconded and passed by the membership.

3. Secretary's Report: Mike Soulsby distributed minutes from the Executive Committee meeting of September 11, 1999. Members were alerted to change his e-mail address. He inquired whether anyone was aware of the existence of Academy Proceedings for years between 1947 and 1965. These are being requested by Tom Weeks at Marshall University, Huntington, WV. Since no one knew of their presence, he will pursue their retrieval through interlibrary loan within Arkansas. A motion to accept his report was made by David Saugey, seconded, and passed.

4. Treasurer's Report: Joyce Hardin discussed her report, which is attached to these minutes. She explained the delay in institutional billing, and some possible concerns over interest in Certificates of Deposit. She also expressed concern over the slow decline in both Academy membership and subscriptions to the Journal. Motion to accept her report was made by Henry Robison, seconded, and passed.

Respectfully Submitted,

Dr. Joyce M. Hardin, AAS Treasurer

Financial Statement, Arkansas Academy of Science

INCOME:

1. ANNUAL MEETING 1998 1999
   -0- $4,135.30

2. ENDOWMENT
   AAS Endowment Unrestricted
   $4,135.30 $3,695.03

3. ENDOWMENT DONATIONS
   a. AAS Unrestricted $125.00
   b. Dwight Moore $25.00
   $150.00 $150.00

TOTAL

$25,166.28 $26,168.49
### Secretary's Report

#### 4. INTEREST (Endowment)  
- $665.97

#### 5. INDIVIDUAL MEMBERSHIPS  
a. Associate  
  - $135.00  
b. Regular  
  - $2,505.00  
c. Sustaining  
  - $245.00  
d. Sponsoring  
  - $45.00  
e. Life  
  - $450.00  
f. Other  
  - $3,480.00  

**Total Income:** $4,525.00  
**Total Expenditures:** $3,480.00  
**Net Income:** $1,045.00

#### 6. INSTITUTIONAL MEMBERSHIPS  
- $1,700.00  
- $1,000.00

#### 7. MISCELLANEOUS  
- $159.00

#### 8. JOURNAL  
**Miscellaneous Sales:**  
- $3,675.43  
**Page Charges:**  
- $6,360.00  
**Subscriptions:**  
- $700.00  
**Total:** $10,735.43

**TOTAL INCOME:** $19,053.30  
**TOTAL EXPENSES:** $23,329.43  
**Net Income:** $4,276.10

### Financial Statement, Arkansas Academy of Science

**EXPENSES:**

#### 1. ANNUAL MEETING  
- Joyce Hardin - plaques (625)  
  - $166.83  
- Chartwells (643)  
  - $1,020.53  
- ATU Physical Science (644)  
  - $681.05  
- Dr. Dawn Bonnell (646)  
  - $372.65  
- Dr. Charlie Gagen (647)  
  - $279.51  

**Total:** $1,636.64

#### 2. AWARDS  
- C. Ed Rington (629)  
  - $100.00  
- Tut Campbell (630)  
  - $50.00  
- Lex Mitchell (631)  
  - $50.00  
- Josie Pickens (634)  
  - $50.00  
- Elisa Horsch (635)  
  - $100.00  
- Eric Anderson (636)  
  - $50.00  
- Jonathan Whitlock (638)  
  - $75.00  
- Shonda Harris (639)  
  - $75.00  
- Conway Trophy for Arkansas Science Talent Search (641)  
  - $244.00  
- Arkansas Science Fair Association (641)  
  - $450.00  
- Arkansas Junior Academy (642)  
  - $250.00

**Total:** $1,494.09

**Total Expenses:** $2,250.57

#### 3. DUES  
National Association of Academies of Science (649)  
- $62.50

**Total:** $62.50

#### 4. MISCELLANEOUS  
- Ed Griffin Travel to AAS Conference (645)  
  - $228.00  

**Total:** $228.00

#### 5. NEWSLETTER  
- Kwik Print - January 1999 Newsletter (624)  
  - $513.66  
- UALR - Postage Spring 1999 Newsletter (626)  
  - $30.13  

**Total:** $543.79

**TOTAL EXPENSES**  
- $17,623.97  
- $23,848.80

#### 6. OFFICE EXPENSES  
- $229.26

#### 7. JOURNAL  
- Stan Trauth - Editorial Consultation and Travel Volume 52 (623)  
  - $200.00  
- Pinpoint Color Volume 52 (648)  
  - $12,490.59  
- Joy Trauth - Editorial Consultant Volume 53 (650)  
  - $500.00  

**Total:** $13,990.59

#### 8. CORRECTION TO DEPOSIT  
- $20.00

#### 9. TRANSFER  
- To CD (Unrestricted)  
  - $5,000.00  
- To CD - Moore  
  - $25.00  
- To CD - Life  
  - $525.00  

**Total:** $5,550.00

**Total Expenses:** $17,623.97  
**Total Income:** $19,053.30  
**Net Income:** $1,429.33

5. Editor-in-Chief's Report: Stan Trauth discussed his appreciation that David Saugey had accepted the position of managing editor. Stan also indicated that the Journal cost is somewhat higher this year and his intent to purchase software for computer submission of Journal articles in the future.

6. Managing Editor's Report: David Saugey described his first year as a learning experience and expressed eagerness to serve in this capacity. A motion to accept Stan and David's report made by Joyce Hardin was seconded by Mark Draganjack, and passed.

7. Newsletter Editor's Report: Jeff Robison expressed appreciation for the existence of membership membership labels. He displayed a color printed copy of the Newsletter, and indicated that the student award winners and their award categories will be included in the next newsletter. A motion to approve the report was made by Stan Trauth, seconded, and passed by the membership.

8. Historian's Report: Henry Robison indicated that this is the 84th meeting of the Academy, and that it is the first meeting to be held in Hot Springs. Motion to accept the report made by John Rickett, seconded, and passed.

9. 2000 Meeting: Dr. Hemmati announced that this meeting will be held at UCA, and its host will be Dr. Toll, Dean of the Math and Science School.

10. 2001 Meeting: John Rickett announced that UALR will host the 2001 meeting, and that he will acquire a formal invitation to the campus from the new Dean upon his
arrived at that campus.

10. AAAS Report: Ed Griffin could not be present, but he provided a copy of his report from the AAAS meeting held in Washington, DC. A copy of his report is attached.

11. Arkansas Science Teachers’ Association (ASTA) Representative: Dr. Hemmati indicated that he had attended the ASTA meeting this year and, as a result, he had invited Jim Edson to appear before the Executive Committee. Jim proposed that ASTA and AAS hold joint meetings in the future. Members could then make joint presentations. Dr. Hemmati will copy Jim’s letter and provide copies to members of the Council. Most Council members seemed in favor of trial joint meetings in the future.

12. BIOTA Committee: No report was presented.

13. Nominations Committee Report: Dr. Daly proposed nominations for vice president: Dr. Walter F. Godwin, Department Chemistry, UAM, and Dr. Clifton Orr, Department Biology, UAPB

Motion to accept the nominations was made by John Rickett and seconded by Mike Soulsby. Motion passed. Dr. Robert Watson will be Dr. Daly’s replacement on the nominations committee, for it is Dr. Daly’s last year in this position. Dr. Watson will be followed as chairman by Dr. Scott Kirkconnell. A new member of the nominating committee will need to be elected at the Fall meeting.

14. Junior Academy of Science and Arkansas Science Fair Association reports: Dr. Hardin reported for Dr. Skinner, who is attending the Junior Academy of Science meetings, and Dr. Rapp. A written report has been submitted by Drs. Skinner and Rapp, and is attached to these minutes. Among items in that report are:

(a) a report of Science Fairs and Junior Academy of Science Meetings held in Arkansas during 2000,

(b) a statement that over 250 students are expected to register for the State Science fair and about 70 for the State Junior Academy of Science meeting in Conway, and

(c) the annual request for $450.00 by the Science Fair Association to cover expenses ($50 for each of the nine fairs) and for $250 to help send students to the American Junior Academy of Science meeting. A motion to approve this amount ($700) was made by Mark Draganjac and seconded by John Rickett. Motion passed unanimously.

15. Alltel Talent Search: Dr. Hardin reported for Dr. Runge. She stated that the Talent Search committee is requesting a total sum of $281.49 to cover the cost of plaques. A motion to approve this amount was made by Mike Soulsby and seconded by John Rickett. The motion passed.

16. Bids for the 2003 meeting: Suggestions were made that this meeting could be held at either Hendrix College in Conway, Jonesboro, or possibly Fayetteville. It was proposed that we need to generate more interest in the Academy on the Fayetteville Campus, and that a meeting there might help accomplish this goal. Dr. Rickett suggested that we contact department chairpersons and ask them to stimulate interest among their faculty. Jeff Robertson offered to compose a letter to chairpersons, and Mark Draganjac said that he would discuss this concern with Collis Geren at an upcoming ERSCOR meeting. Dr. Hemmati indicated that he has an e-mail mailing list of Deans, and that this list could be used to also contact Deans.

17. Old Business: Pictures of the Executive Committee taken during the September 11 meeting at UALR were distributed.

18. Concern that Sigma Xi contributions are dwindling was discussed. A motion to continue requesting funds from Sigma Xi for environmental science students was made by Henry Robison and seconded by Joyce Hardin. This motion passed.

19. John Rickett began a consideration of the George Harp Memorial Fund, when Dr. and Mrs. Harp arrived at the meeting. It was determined that funds from this memorial could be used to reward the outstanding graduate student presentation in Dr. Harp’s expertise at the annual meeting.

20. AAS web page is being produced, with a list of the membership. Dr. Robertson is pursuing its development.

21. New Business: Dr. Daly discussed the need to increase the Academy’s membership. This could be accomplished by targeting Community College faculty and faculty at newly created Junior Colleges. Dr. Daly volunteered to speak on the Academy’s behalf at the Fall meeting of the Community Colleges. Dr. Hemmati accepted this offer of a presentation, and it was decided that a booth might also be beneficial at the Fall meeting. A motion to have a booth was made by Dr. Soulsby and
seconded by Dr. Hardin. Motion was approved.

APPENDIX A

STATE SCIENCE FAIR ASSOCIATION

Thank you for the support the Academy has provided for the past seventeen years, both in terms of members of the AAS serving as judges and in terms of financial support. This memo serves as a report of the Science Fairs and Junior Academy of Science Meetings held in Arkansas during 2000.

Central (held at UAMS, Mar. 17-18): Gary Earleywine, fair director, and Marian Douglas, Jr. Acad. director.


North West (Univ. of Ark., Fayetteville, Mar. 17): Lynne Hehr, director of fair and Junior Academy.

South Central (Ouachita Baptist Univ., Arkadelphia, Mar. 3): Jim Taylor, fair director, and David Brooks, Jr. Acad. director.

South East (Univ. of Ark-Monticello, Mar. 5): Billy Britt, fair director.

South West (Camden, Mar. 3): Joe Giddens, director of fair and Junior Academy.


Over 250 students are expected to register for the state science fair, and about 70 students for the state Junior Academy of Science meeting, to be held April 7-8 in Conway, on the campus of the Univ. of Central Arkansas. Mike Rapp is the director of the state science fair. Bob & Raynell Skinner are co-directors of the Junior Academy of Science.

With this memo, we are requesting that the Academy continue its support of this year’s state science fair activities and Junior Academy of Science meeting. Specifically, $450 is requested by the Arkansas Science Fair Association to help cover expenses ($50 for each of the nine affiliated fairs in Arkansas) for students being sent to the Intel International Science & Engineering Fair (ISEF), and $250 is requested by the Arkansas Junior Academy to help send students to the American Junior Acad. of Science meeting.

Please offer a resolution of thanks for the work of the individuals indicated above, which could be included in the minutes published in the Proceedings, and please bring the request for funding to the members. Resolutions to that effect are given below.

Request for Funding for 2000 Arkansas Science Fair Association and Junior Academy of Science:

“The Arkansas Science Fair Association (ASFA) requests the Arkansas Academy of Science to continue its support for the past seventeen years of $50 to each of the science fairs in Arkansas that will send students and teachers to the International Science and Engineering Fair, to be held in May, 2000, in Detroit. The total contribution being requested by the ASFA is $450. The Arkansas Junior Academy of Science requests the Arkansas Academy of Science to provide $250 for 2000, to help cover the expenses of sending student winners to the American Academy of Science meeting.”

Should the membership approve this request, please have the first check made payable “Arkansas Science Fair Association” and mail it to Dr. Michael W. Rapp, College of Natural Sciences & Math, Univ. of Central Arkansas, Conway, AR 72035. The Arkansas Science Fair Association will use this support to help pay expenses for the students attending the International Science & Engineering Fair (ISEF). Each affiliated fair will be credited with $50 for its share of the ISEF expenses.

Please have the second check made payable to “Arkansas Junior Academy of Science” and mail it to Dr. Bob Skinner, Dept. of Anatomy, UAMS Slot 510, 4301 W. Markham, Little Rock, AR 72205. The Junior Academy of Science will use the support to help pay expenses for students and teachers to attend next year’s meeting of the American Junior Academy of Science.

Resolution of Appreciation to 2000 Science Fair & Junior Academy Directors:

“The membership expresses its appreciation for the work that the following individuals have done in their roles as directors of science fairs and Junior Academy of Science meetings in 2000:

Central (Little Rock) - Gary Earleywine (Fair) and Marian Douglas (Junior Academy)
North Central (Batesville) - Beverly Meinzer (Fair) and Kathy Campbell (Junior Academy)
North East (Jonesboro) - Larry Mink (Fair) and Ron Johnson (Junior Academy)
North West (Fayetteville) - Lynne Hehr (Fair and Junior Academy)
South Central (Arkadelphia) - Jim Taylor (Fair) and David Brooks (Junior Academy)
South East (Monticello) - Billy Britt (Fair)
South West (Camden) - Joe Giddens (Fair and Junior Academy)
West Central (Hot Springs) - Shane Willbanks (Fair and Junior Academy)
State Fair/Junior Academy - Michael Rapp (Fair) and Bob & Raynell Skinner (Junior Academy)”
APPENDIX B

RESOLUTIONS

BE IT RESOLVED that we, the membership of the Arkansas Academy of Science, offer our sincere thanks to Arkansas School for Mathematics and Sciences at Hot Springs for hosting the 2000 meeting of the Arkansas Academy of Science. In particular, we thank the Local Arrangement Committee for an outstanding job of organizing the meeting: Dave Saugey and Betty Crump (Co-Chair and Local Arrangements Committee), David Saugey and Betty Crump (Abstracts, Scheduling), Ron Periho, Lori Short, and Debbie Rigsby (Registration), David Saugey (Local Treasurer), Betty Crump (Audiovisual), Betty Crump, Debbie Rigsby, Dianne Saugy, and David Saugey (Social Arrangements). Appreciation is expressed to the Downtowner Hotel for use of their facilities and the hospitality shown us by all Personnel. The social was excellent.

The Academy recognizes the important role played by various Section chairpersons and expresses sincere appreciation to: Dr. Walter Godwin, Dr. Michael Panigot, Dr. Frank Setliff, Dr. Edmond Wilson, Jr. (Chemistry), Dr. Gerald Walsh and Dr. Marsh (Botany and Environmental Science), Dr. David Jamieson, Dr. Allen Carter, Dr. Henry Robison, and Dr. Phoebe Harp (Vertebrate Zoology), Dr. John Harris, Dr. George Hap (Invertebrate Zoology), Dr. Mostafa Hemmati, Dr. Will Braithwaite (Physics), Dr. Anne Grippo, Dr. David Gilmore (Biomedical).

A special thanks is owed to the individuals who devoted considerable time and energy to judging student papers: Dr. Edmond Wilson, Jr., Dr. Michael J. Panigot, and Dr. Robert Maruca (Chemistry), Dr. Dan Marsh, Mr. Gerald Walsh, and Mrs Susan Hooks (Botany and Environmental Science), Mr. David Jamieson, Dr. Ed Pert, and Dr. Renn Tumlinson (Vertebrate Zoology), Dr. John Harris, Dr. Henry Robison, and Dr George Hap (Invertebrate Zoology), Dr. Will J. Braithwaite, Dr. Mostafa Hemmati, and Dr. Jeff Robertson (Physics), Dr. Anne Grippo, Dr. Steven Runge, Dr. James Daly, Dr. David Gilmore (Biomedical).

We express gratitude to the various directors of the science and youth activities that are supported by the Academy: Ms. Sherry Lane (President, Arkansas Science Teachers Association), Dr. Michael Rapp (President, Arkansas State Science Fair Association), Dr. Steve Runge and Dr. Dan Magoulick (Co-Directors, Intel Talent Search) and Drs. Robert and Raynall Skinner (Co-Directors, Arkansas Junior Academy of Science), Dr. Doug James (Chair, BIOTA Committee), Dr. James Daly (Chair, Nominating Committee), Dr. Ed Griffin (AAS Representative to the American Association for the Advancement of Science).

We wish to thank all those who served as directors at science fairs and Junior Academy meetings: Mr. Gary Earleywine (Central Region), Dr. Beverly Meinzer (North Central Region), Dr. Larry Mink (North East Region), Dr. Lynne H. Hehr (North West Region), Dr. Jim Taylor (South Central Region), Dr. Billy Britt (South East Region), Dr. Joe Giddens (South West Region), Mr. Shane Willbanks (West Central), Dr. Michael Rapp (State Meeting, UCA, Conway).

The continued success of the Academy is due to its strong leadership. We offer sincere thanks to our officers for another excellent year: Dr. Mostafa Hemmati (President), Dr. Mark Draganjac (President-Elect), Dr. John Rickett (Vice-President), Dr. Michael Soulsby (Secretary), Dr. Joyce Hardin (Treasurer), Dr. Rose McConnell (Past President), Dr. Stanley Trauth (Journal Editor-in-Chief), Mr. David Saugey (Journal Managing Editor), Dr. Jeff Robertson (Newsletter Editor), and Dr. Henry Robison (Historian). In addition, the Academy expresses appreciation to all those individuals who have contributed their time and effort on various committees of the Academy.

Finally, we congratulate all those who presented papers at this meeting. Student participants are especially recognized, since their continued efforts will be directly responsible for the future success of the Academy, and the continuation of science education and research in Arkansas.

Resolutions Committee
Dr. Robert C. Sadoski, Chair
Dr. John Graham
Dr. Frank Hardcastle

APPENDIX C

REPORT
ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (AAAS)
WASHINGTON, DC, FEBRUARY 17-20, 2000
ED GRIFFIN, REPRESENTATIVE OF THE ARKANSAS ACADEMY OF SCIENCE (AAS)

To assure the greatest diversity of input to the National AAAS there are 24 special interest sections that work within and report to the parent association. Each state Academy of Science is asked to send a representative to the annual meeting of AAAS to serve as a voting member of a section. Historically the representative from the Arkansas Academy has served on one or two additional sections, like Biological Sciences, Chemistry, etc., but that is often not possible because they schedule their meetings at the same time. Because the interests of the Arkansas Academy are varied in nature, the General Interest section seems appropriate for our primary representation.
One function each section serves is to (competitively) propose symposia for the next Annual Meeting (2001 in San Francisco). One proposal the section submitted for next year was “the benefits of improving the environment on improving public health”. The representative from the Ohio Academy and I proposed that we conduct a workshop where invited members of the press perform hands-on discovery exercises generally about “energy use and the environment”. If we are fortunate and our proposal gets approved, I will ask you for your favorite “quick-hitter” discovery exercises.

Most national scientific societies are increasingly including sessions in their meetings about ways to improve teaching and most of these are emphasizing hands-on, activity based, facilitated discovery learning, instead of extensive lectures and recipe based labs. To emphasize this point, NSF brought approximately 1000 Washington, DC elementary students for a half day of discovering learning activities in huge hotel ballrooms at the meeting.

From the opening remarks until I had to leave the meeting, as usual, was exceptional. There were arrays of concurrent sessions, ranging from cutting edge research papers, to sessions on influencing public policy, and planning for the future. I’ll mention only a few especially interesting sessions where I both learned and represented Arkansas. I attended a poster session where Junior Academy and Science winners presented their work. You can be assured I personally congratulated and bragged on each of the four presenters from Arkansas:

Sima Shah, Immunology, Mills High School,
Little Rock
Cate Fox-Lent, Heat Movement, Central High School,
Little Rock
William Gulbreath, Computer Operating Systems,
Greenwood High School, Greenwood
Claire Nelson, Plastic Film, (now) Hendrix College,
Conway

Immediately after that poster session, we attended the conference keynote address by none other than professor evolution himself, outgoing AAAS President, Stephen J. Gould. As usual, he was exceedingly entertaining and informative. He commented that evidence indicates that we can stop worrying about the influence of creationists, because “we’ve already won”, and their sporadic outbursts mostly bring embarrassment to themselves. In a following social event, he chatted enthusiastically with me about the Arkansas court case in which he served as an expert on evolution. I also visited with (our own) Dr. Mary Good, UCA Alumna, the incoming president of AAAS, and a new Dean at UALR. Dr. Good indicated she would participate in the Arkansas Academy. I also heard a lecture by the U.S. Surgeon General, Dr. David Satcher about health and health care in the 21st century. And in an early morning lecture I heard (professor “ant” himself), Dr. E. O. Wilson, speak about “the relation between biology and the humanities”.

Through out the meeting, events were too numerous to mention, but another one I was personally interested in was a session organized by NFS to organize and mobilize retired scientists and engineers to volunteer to help enrich science classes in local schools. I hope the Arkansas Academy might participate in this kind of project. As usual the exhibits were slanted greatly toward materials for science education activities (K-college). These exhibits were easily the greatest concentration of such materials I’ve ever seen. Besides that they gave us free snacks during each afternoon break.

I sensed throughout the meeting an increasing concern about improving/modernizing science (and math) education, especially at the college level. Among the most distinguished organizations promoting and supporting improved science and math teaching in college are the: National Academy of Sciences; AAAS, NSF, and NIH. We are sure to hear more about these challenges in the near future. In fact, I just received an example of the kinds of things being presented to us by some “experts” - http://horizon.unc.edu. And I heard an ominous sounding paper at AAAS entitled, “Can Universities Change Quickly Enough for the Innovation Economy?”

I bet we can/do. Thanks for letting me represent the Arkansas Academy of Science.

CONSTITUTION

ARKANSAS ACADEMY OF SCIENCE

(Revised at the April 1999 Annual Meeting)

ARTICLE I. NAME

The name of this organization shall be “The Arkansas Academy of Science.”

ARTICLE II. OBJECTIVES

The objectives of this organization shall be the promotion and diffusion of knowledge of the fields of Science and unification of these interests in the State.

ARTICLE III. MEMBERSHIP

Section 1. Persons and organizations interested in the objectives of this Academy may join by the payment of dues.

Section 2. There shall be two general classes of membership in the Academy: Members (consisting of Regular, Sustaining, Sponsoring, Life, and Undergraduate Student) and Institutional Members.
ARTICLE IV. OFFICERS

The officers of the Academy shall be a President, a President-elect, a Vice President, a Secretary, a Treasurer, a Historian, a Journal Editor-in-Chief, a Journal Managing Editor, and a Newsletter Editor who shall perform the duties usually pertaining to their respective offices. All officers of the Academy except the President, President-elect and Managing Editor of the Journal shall be chosen by ballot by the membership-at-large in the annual meeting. The President, President-elect and Vice President shall hold office for one year. The Secretary, Treasurer, Historian, Journal Editor-in-Chief, Journal Managing Editor, and Newsletter Editor shall hold office for five years. The office of President shall be filled by the preceding year’s President-elect. The office of President-elect shall be filled by the preceding year’s Vice President. The Managing Editor shall be appointed by the Executive Committee. These officers and the immediate past President shall constitute the Executive Committee of the organization.

ARTICLE V. MEETINGS

The annual meeting of the Academy shall be held at such times and places as will be designated by the Executive Committee.

ARTICLE VI. PUBLICATIONS

The publications of the Academy shall include the Journal of the Academy and such papers as are deemed suitable by the Executive Committee.

ARTICLE VII. AMENDMENTS

This constitution may be altered or amended at any annual meeting by a three-fourths majority of the attending members of at least one year’s standing. Final action on any alteration or amendment shall be taken at a session subsequent to the one at which it is presented.

BY-LAWS

(Revised at the April 1999 Annual Meeting)

1. These by-laws may be altered or amended in the same manner as the constitution.
2. The following standing committees shall be established: Auditing, Awards, Biota, Constitution, Development, Local Arrangements, Nominations, Publications, Publicity, Resolutions, and Science Education. Ad hoc committees may be appointed by the President. The make-up, duties and duration of service for members of each standing committee shall be determined by the Executive Committee with members for vacanies to be appointed by the President.
3. Whenever the number of papers to be presented in any field becomes sufficiently large, an additional section may be created at the discretion of the Local Arrangements Committee.
4. Persons presenting papers with the intent of having them published in the Journal shall present an original and two copies of the paper to the Chairman of the appropriate section or either of the Journal Editors at the annual meeting. The Editors shall be under no obligation to consider papers submitted after this date.
5. Members who shall allow their dues to remain unpaid for two years, having been annually notified of their arrearage by the Secretary, shall lose their status of membership.
6. Expenditures in excess of $200 which have not been specifically authorized by the Academy at a prior annual business meeting require written approval by the President before payment can be made.
7. The fiscal year and the membership year shall begin January 1 and end December 31. A person joining the Academy during the year is entitled to membership privileges for the remainder of that fiscal year.
8. All officers elected at the annual meeting assume their duties at the end of the last business session of that meeting.
9. In the event an officer, except President, Past President, President-elect, and Vice President, is unable to complete a term, the Executive Committee shall appoint a successor to complete that term, or open a new five-year term with an election at the next general meeting.
10. Dues for all categories of members shall be set by the Executive Committee of the Academy and submitted to the membership for approval. Approval by the membership shall be by majority vote of those present. Any change of dues approved by the membership shall be effective January 1 of the year following that in which the change was approved.
11. The price of the Journal in sales to non-members of the Academy shall be determined by the Executive Committee.
12. The Academy shall sponsor such activities as it deems necessary to further its objectives. All activities sponsored by the Academy shall be reviewed annually by the Executive Committee.
13. The Academy shall set aside $1,000 or more as a reserve fund which may be withdrawn and used upon expressed consent of the Executive Committee.
14. Notwithstanding any provision of the Constitution or
By-laws which might be susceptible to a contrary construction,
(a) the Academy shall be organized and operated exclusively for scientific and educational purposes;
(b) with the exception of established awards, no part of the net earnings of the Academy shall or may under any circumstances inure to the benefit of any private individual;
(c) no substantial part of the activities of the Academy shall consist of carrying on propaganda, or otherwise attempting to influence legislation;
(d) the Academy shall not participate in, or intervene in (including the publishing or distributing of statements) any political campaign on behalf of any candidate for public office;
(e) the Academy shall not be organized or operated for profit;
(f) the Academy shall not:
   (1) lend any part of its income or corpus, without the receipt of adequate security and a reasonable rate of interest, to;
   (2) pay any compensation in excess of a reasonable allowance for salaries or other compensation for personal services actually rendered to;
   (3) make any part of its services available on a preferential basis to;
   (4) make any purchase of securities or any other property for more than adequate consideration in money or money’s worth from;
   (5) sell any securities or other property for less than adequate consideration in money’s worth to;
   (6) engage in any other transactions which result in substantial diversion of its income or corpus to any officer of the Executive Committee or substantial contributor to the Academy.

The prohibitions contained in this subsection (f) do not mean to imply that the Academy may make such loans, payments, sales or purchases to anyone else, unless such authority be given or implied by other provisions of the Constitution or By-laws.

Upon dissolution of the Academy, the Executive Committee shall distribute the assets and accrued income to one or more organizations as determined by the Executive Committee, but which organizations shall meet the limitations prescribed in subsections (a) through (f), inclusive, immediately preceding.

14. The Arkansas Academy of Science is the parent organization of the Arkansas Junior Academy of Science. The appointment of the Director of the

Arkansas Junior Academy of Science is made by the President of the Arkansas Academy of Science for a period of three years. The Director will operate with the advice of a Board of Regional Directors appointed by the President of the Arkansas Academy of Science. The Regional Directors will serve at the pleasure of the President.

APPENDIX A

AAS CONSTITUTIONAL COMMITTEES

EXECUTIVE COMMITTEE: The Executive Committee shall consist of the President, Past President, President-elect, Vice President, Secretary, Treasurer, Historian, Journal Editor-in-Chief, Journal Managing Editor, and Newsletter Editor. The Executive Committee shall make recommendations concerning the policies and activities of the Academy in accordance with the Constitution and By-laws of the Academy. The Committee shall meet prior to the first annual business meeting to discuss any motions to be presented at the annual business meeting or any other matters that pertain to the Academy. Other Executive Committee meetings may be held, with the general consensus of its members, depending on the need to discuss Academy issues and interests.

AAS STANDING COMMITTEES ESTABLISHED BY THE BY-LAWS

1. AUDITING COMMITTEE: The Auditing Committee shall consist of a Chair and three additional members. The President shall appoint the Committee prior to or at the first annual business meeting, and it shall function only for that annual meeting. The Committee shall examine the financial records of the Academy, provided by the Treasurer, and report its findings to the Academy at the second business meeting.

2. AWARDS COMMITTEE: The Awards Committee shall be named by the Local Arrangements Committee for the upcoming annual meeting. The Committee shall consist of a Chair and as many additional members as the Chair and/or Local Arrangements Committee deem necessary. The Awards Committee shall evaluate undergraduate and graduate paper presentations during the annual meeting and make recommendations for the various awards established by the Executive Committee.

3. BIOTA COMMITTEE: The Biota Committee shall consist of a Chair and five additional members, and shall be appointed by the President for undefined terms of service. A term of service may be terminated by the
President, the committee Chair, or the member. The Biota Committee shall collect, organize, and disseminate taxonomic information on the flora and fauna of Arkansas. Reports shall be made available to the members of the Academy and any other interested party when sufficient information exists.

4. CONSTITUTION COMMITTEE: The Constitution Committee shall be appointed by the President whenever a need for constitutional examination exists and consist of the President-elect, Vice President, and one other member. The President-elect shall serve as the Chair. The Committee shall make recommendations on changes in the Constitution and By-laws whenever such changes are deemed necessary.

5. DEVELOPMENT COMMITTEE: The Development Committee shall consist of a Chair and two additional members and be appointed by the President to undefined terms. The President, the committee Chair, or the member may terminate the appointment. The Development Committee shall promote the growth and development of the Academy by contacting private industries to secure endowment funding to support activities of the Academy.

6. LOCAL ARRANGEMENTS COMMITTEE: The Local Arrangements Committee shall consist of a Chair, appointed by the President, and a minimum of two additional members, selected by the Chair. The Local Arrangements Committee shall make the arrangements necessary to host the annual meeting in accordance with the established guidelines for hosting a meeting adopted by the Executive Committee.

7. NOMINATIONS COMMITTEE: The Nominations Committee shall consist of a Chair and two additional members. Each member shall serve a three-year term with staggered expiration dates. The member serving his/her third year shall be the Chair, and the President shall appoint one new member each year prior to the annual meeting. The Nominations Committee shall recommend candidates to the members of the Academy for election. A minimum of two candidates shall be proposed for Vice President, and a minimum of one candidate shall be proposed for each of the other offices (Secretary, Treasurer, Historian, and Editors) as their terms expire.

8. PUBLICATIONS COMMITTEE: The Publications Committee shall consist of the Editor-in-Chief and Managing Editor of the Journal and two additional members. The Editor-in-Chief shall be elected by the membership of the Academy to a five-year term and serve as the Chair. The Managing Editor shall be appointed by the Executive Committee and serve a five-year term. The two additional members shall be appointed by the President for undefined terms. The Committee Chair, President, or the member may terminate a member’s appointment. The Chair may select as many Associate Editors as deemed necessary to accomplish the task of manuscript review. The Editor-in-Chief, Managing Editor and Associate Editors shall review manuscripts submitted for publication in the Journal and any other publications deemed desirable by the Executive Committee. Manuscripts may also be submitted to selected specialists for review. The Editors, jointly or singly, shall have the primary jurisdiction, but the Committee may be consulted, for decisions regarding acceptance, rejection or revision of all manuscripts.

9. PUBLICITY COMMITTEE: The Publicity Committee shall consist of a Chair and two additional members. The Committee shall be appointed by the President for undefined terms, and the President, committee Chair or the member may terminate the member’s appointment. The Publicity Committee shall promote the public image of the Academy with news releases on activities and accomplishments of the Academy. All news releases shall be reviewed and approved by the Executive Committee prior to release to the news media.

10. RESOLUTIONS COMMITTEE: The Resolutions Committee shall consist of a Chair and two additional members. The Committee shall be appointed by the President prior to or at the first annual business meeting and serve only for that annual meeting. The Resolutions Committee shall present appropriate resolutions expressing the appreciation of the Academy to all individuals and organizations involved in activities sponsored by the Academy during the year.

11. SCIENCE EDUCATION COMMITTEE: The Science Education Committee shall consist of a Chair and additional members as deemed necessary by the Chair of the committee. The President shall appoint the Chair and, in consultation with the Chair, additional members for undefined terms. The President, the committee Chair or the member may terminate the member’s appointment. The Science Education Committee shall provide information to the Academy on current programs and activities in science education in the state, promote programs, including the Junior Academy, Science/Engineering Fairs, and Science Talent Search(es) and cooperate with state agencies and other educational organizations in the study and development of innovative ideas or activities to improve science education at all levels in the state.
APPENDIX B

DUTIES OF ELECTED OFFICERS

A. President -
1. Calls to order and presides over all Executive and General Business meetings
2. Handles official Academy correspondence as pertains to the office of President, and/or delegates correspondence pertaining to other offices to those officers as appropriate
3. Asks any other officers and directors of subunits, as appropriate, for advice and assistance

B. President-elect -
1. Serves in the capacity of President should the President be unable to perform his/her duties
2. Assists and advises the President when called on to do so

C. Vice President -
Assists and advises the President and/or President-elect when called on to do so

D. Past President -
By virtue of his/her service and experience, the Past President assists and advises the President when called on to do so

E. Treasurer -
1. Keeps all financial records of the Academy
2. Receives payments of dues, Journal subscriptions, and all other sources of income
3. Manages investments of the Academy with the approval of the Executive Committee
4. Disburses funds for payment of Academy operating expenses and gifts awarded

F. Secretary -
1. Keeps all clerical records of the Academy: memberships by approved categories, Journal subscriptions, exchange and abstracting service lists, and other records as deemed necessary and appropriate by the Executive Committee
2. Sends out copies of the Journal to members (as needed) and as requested by subscription, exchange, and abstracting service lists
3. Corresponds with members and libraries as appropriate regarding payment of dues and payment of invoices for the Journal
4. Furnishes mailing labels to other Executive Committee members and Local Arrangements Committee Chair as appropriate
5. Furnishes membership information, as appropriate, to anyone requesting

6. Corresponds with AAAS (American Association for the Advancement of Science) to receive or provide information as needed and appropriate

G. Journal Editors -
1. Receive manuscripts submitted for publication and cooperate with Associate Editors in the review, revision and acceptance process
2. The Managing Editor coordinates the manuscript review process with the Associate Editors and selected reviewers
3. Both Editors prepare the next issue of the Journal by assembling the final copies of manuscripts accepted for publication
4. The Editor-in-Chief primarily works with the printer in the technical preparation of the Journal
5. Arrange for the distribution of copies of the Journal at the next annual meeting

H. Newsletter Editor -
1. Receives and compiles news items regarding Academy operations, Executive Committee decisions, and general Academy activities and involvement
2. Prepares two (or as many or few as the Executive Committee deems appropriate) issues of the Newsletter per year, the contents of which are subject to approval and revision by the Executive Committee
   a. The "Fall" issue shall contain general news about the Academy activities and general information about the next annual meeting
   b. The "Spring" issue shall contain more specific information about the next annual meeting, an abstract form, meeting reservation/registration form(s), and specific news about achievements of Academy members
3. Distributes copies to all Academy members and prospective members, as directed by the Executive Committee

I. Historian -
1. Keeps historical records of Academy meetings and other activities
2. Reports on past activities at the annual meeting, as the presiding officer directs, and as the Executive Committee requests
MEMBERS 2000

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FIRST MI LAST NAME INSTITUTION
Russell B. McAllister Arkansas Dept. Pollution Control & Ecology
V. Rick McDaniel Arkansas State University
Richard Meyer University of Arkansas at Fayetteville
Muhammad A. Mish University of Arkansas at Pine Bluff
Cristin Milam Arkansas State University
Lawrence A. Mink Arkansas State University
Paul Mixon Arkansas State University
Warren Montague U.S. Forest Service
Cindy Moore Westark Community College
Manuel Morin Hendrix College
Leland F. Morgans University of Arkansas at Little Rock
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Roland E. Nelson Arkansas Tech University
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Thomas Nopp Arkansas Tech University
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Don R Owens University of Arkansas at Little Rock
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Mark A. Pauluisen McNeese State University
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Edmond W. Wilson, Jr. Harding University
David Wood University of Arkansas at Little Rock
Heather L. Woolverton University of Central Arkansas
Andrew Wright University of Arkansas at Little Rock
Tami Bassi Arkansas Tech University
J. Lyndal York University of Arkansas for Medical Sciences

SUSTAINING MEMBERS
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Edward E. Dale, Jr. University of Arkansas at Fayetteville
David L. Davies University of Arkansas for Medical Sciences
Edmond E. Griffin University of Central Arkansas
Paul M. Nave Arkansas State University
Alex R. Nubet Ouachita Baptist University

Journal of the Arkansas Academy of Science, Vol. 54, 2000

Published by Arkansas Academy of Science, 2000
### LIFE MEMBERS

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<td>Speairs</td>
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<tr>
<td>Robert W.</td>
<td>Wiley</td>
<td>University of Arkansas at Monticello</td>
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### STUDENT MEMBERS

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<thead>
<tr>
<th>FIRST NAME</th>
<th>LAST NAME</th>
<th>INSTITUTION</th>
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</thead>
<tbody>
<tr>
<td>Jennifer</td>
<td>Abbott</td>
<td>Henderson State University</td>
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<tr>
<td>James R.</td>
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<tr>
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<td>Baker</td>
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<td>Jeremy W.</td>
<td>Bowers</td>
<td>Arkansas State University</td>
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<tr>
<td>Mohanjeet Singh</td>
<td>Brar</td>
<td>University of Arkansas at Fayetteville</td>
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<tr>
<td>Jeff</td>
<td>Briggler</td>
<td>University of Arkansas at Fayetteville</td>
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<tr>
<td>Daniel</td>
<td>Bollock</td>
<td>Arkansas Tech University</td>
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<tr>
<td>Melissa</td>
<td>Camp</td>
<td>Henderson State University</td>
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