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## **MINUTES OF THE SEVENTY-SEVENTH ANNUAL MEETING OF THE SOUTH DAKOTA ACADEMY OF SCIENCE**

The Seventy-seventh Annual Meeting of the South Dakota Academy of Science was held April 10-11, 1992, at Augustana College in Sioux Falls, South Dakota.

The Executive Council met at 7:30 pm Thursday, April 9, for a final check of plans for the two days to follow.

Papers in the Senior Academy began at 8:20 am, and at 9:15 in the Junior Academy, on Friday, April 10, and continued through the day. Ninety-nine papers were presented in sections of the Senior Academy, counting eleven REU (Research Experience for Undergraduates) papers, and thirty-three papers were presented in the Junior Academy. One hundred thirty-one people registered for the meetings.

The first general session was called to order by Academy President Mark Gabel at 10:30 am Friday. Dr. Lloyd Svendsbye, President of Augustana College, welcomed Academy participants to the campus. President-elect Lynn Hodgson delivered the address "Priming the Pump."

Friday evening, after the Junior Academy Awards session and the Academy Banquet, Dr. William Kellogg gave the lecture "Global Warming: Global Changes" and answered questions concerning human modifications of the biosphere.

On Saturday morning, the top papers from the Junior Academy were presented to the Senior Academy. These papers are included in the Proceedings.

The annual business meeting followed the junior papers. It was reported by the Secretary-Treasurer that currently there are 402 Senior Academy members listed on the roster. Of this number, only 202 have dues paid in either 1991 or 1992. According to the Bylaws (Article XI, Section 3) "Members who shall allow their dues to remain unpaid for two years..., shall have their name stricken from the roll." Concern was expressed about the large number of memberships that would be discontinued. It was resolved and voted by a majority of the members present that the Secretary-Treasurer would contact all members with dues in arrears to invite them to pay only the current

year's dues in order to continue their membership. Further, it was proposed by the Secretary-Treasurer that the wording of Article XI, Section 3 of the By-Laws be changed as follows.

SECTION 3. Members who shall allow their dues to remain unpaid for two consecutive years (*computed at the time of the closing session of the Annual Meeting*), after having been annually notified of their arrearage by the Secretary-Treasurer, shall have their name stricken from the roll. No member who is in arrears shall be entitled to vote.

Wording in italics indicates additions to the By-Laws. This change to the By-Laws was approved by a majority vote of members present.

Reports from the officers and the committees were received and approved. They are printed below.

Items coming out of the Executive Council meetings included:

1. The current editor of the Proceedings, Carroll Hanten, will be resigning after the current year.
2. There seems to be a lack of support among local, i.e. East River, school boards for the Junior Academy.
3. There should be some initiative taken by the Academy to become involved in the NSF-SSI program.
4. There will be a governors' conference and white paper produced relating to fossil vertebrates.
5. The Academy needs to regulate the protocol for local arrangements of the annual meeting by producing and distributing a suggested timetable to local arrangements committees.

Regarding the last of these points, the Executive Council proposed that Article XI, Section 1 of the By-Laws be changed to read:

SECTION 1. The Secretary-Treasurer shall keep a record of all meetings of the Academy and of the Executive Council, and shall prepare these records for publication. The Secretary-Treasurer shall conduct all correspondence relating to the Academy. The Secretary-Treasurer shall have charge of the preparation, printing, and mailing of circulars, blanks, announcements of meetings, and other materials of a similar nature. *At the annual meeting the Secretary-Treasurer shall present to the incoming Local Arrangements Chairperson a document including customary procedures for arranging the upcoming meeting.* After each annual meeting, the Secretary-Treasurer shall send to each incoming member of the Executive Council a copy of the By-Laws.

The sentence in italics is the addition to the section, and nothing else is changed. This proposal was passed by the membership of the Academy.

### REPORT OF THE NOMINATING COMMITTEE

The Nominating Committee, composed of Jim Martin, Larry Tieszen, Lenore Koczon, and Christina Keller, presented a slate of candidates, and elections were held. The officers for 1992-1993 are as follows:

#### Executive Council

- President . . . . . Lynn Hodgson, Northern State
- President Elect . . . . . Nels Granholm, SD State University
- First Vice President . . . . . Keith Perkins, Sioux Falls College
- Second Vice President . . . . . Timothy Sorenson, Augustana
- Secretary-Treasurer . . . . . Frederick J. Peabody, University of SD
- Proceedings Editor . . . . . Carroll Hanten, Pierre
- First Past President . . . . . Mark Gabel, Black Hills State University
- Second Past President . . . . . Samuel Gingerich, Northern State
- Member at large, second year . . . . . Christina Keller, University of SD
- Member at large, second year . . . . . Arvid Boe, SD State University
- Member at large, first year . . . . . Robert Looyenga, SD School of Mines
- Member at large, first year . . . . . David Swanson, University of SD

#### Junior Academy Committee

- Mary Jensen, Rapid City
- Ron Fahy, Rapid City
- Robert Waddell, Belle Fourche
- Douglas Custis, Belle Fourche
- John Landegent, Sioux Falls

#### Membership Committee

- Thomas Durkin, Pierre
- William Roggenthen, SD School of Mines
- Gilbert Blankespoor, Augustana
- Robert Wadell, Belle Fourche
- Robert Tatina, Dakota Wesleyan

It was noted that President Lynn Hodgson would be required to relinquish her office since she would be moving to Hawaii to accept a position in biology curriculum development. According to the By-Laws, Nels Granholm will finish her term as President of the Academy. Keith Perkins would then become the President Elect, and Tim Sorenson would become the First Vice President.

### REPORT OF THE AUDITING COMMITTEE

The Auditing Committee finds that the books and records of the South Dakota Academy of Science for the year 1991 are in good order and that the Academy is in good financial standing.

- William P. Jensen
- Clyde Brashier
- Gilbert Blankespoor

### REPORT OF THE MEMBERSHIP COMMITTEE

The Membership Committee recommends that the Academy accept the following people as members.

#### Regular Members

Sharon Clay, South Dakota State University  
 Kurt Dean, University of South Dakota  
 James J. Doolittle, South Dakota State University  
 Steven Fladhammer, University of South Dakota  
 Brent Graves, University of South Dakota  
 Art Griesser, Black Hills State University  
 Martha J. Lindbeck, Augustana College  
 Jeffery S. Palmer, Dakota State University  
 Cheryl A. Schmidt, University of South Dakota  
 Ali Salehnia, South Dakota State University

#### Associate Members

These are students of colleges and universities in South Dakota. See the membership list for the individual names.

Respectfully submitted,  
 Robert Tatina  
 Cliff Lewis  
 Bill Houk  
 Jim Martin  
 Nels Granholm

### REPORT OF THE AWARDS COMMITTEE

Harlan J. Heitz, science instructor at Ipswich High School, has been selected as the Outstanding Physical Science Teacher for 1992. James Jackson, biology teacher at Roosevelt High School in Sioux Falls, has been selected as the Outstanding Biology Teacher for 1992. On behalf of the entire South Dakota Academy of Science, we congratulate these individuals on their achievement.

Respectfully submitted,  
 Robert Tatina  
 Terry Aslesen  
 Robert Hilton  
 Tim Mullican  
 James Lefferts

### TREASURER'S REPORT

#### Statement of Receipts, Disbursements, and Changes in Cash Balances

Cash Balance, 05 April 1991		
Certificate of Deposit	\$4380.60	
Checking Account	1779.87	
Total Beginning Cash		\$6,160.47
Receipts		
Dues	\$1951.00	
Meeting Registration	654.50	
Banquet	1577.00	
Breakfast	270.00	
Proceedings Sales	126.14	
Page Charges	6542.75	
Junior Academy	940.00	
Reprints	243.15	
Interest on Investments <sup>1</sup>	294.44	
Other Deposits	598.63	
Total Receipts		\$13,197.61
Cash Available for Disbursements		\$19,358.08
Disbursements:		
Proceedings	\$3765.45	
Food Services	1695.69	
Supplies	229.27	
Postage	434.44	
Printing	361.60	
Junior Academy	845.00	
National Dues	44.25	
Reprints	258.15	
Total Disbursements		\$7,683.85
Cash Balance, 06 April 1992		
Certificate of Deposit	\$4380.60	
Checking Account	7343.63	
Total Ending Cash		\$11,724.23

<sup>1</sup> 236 Days at 7.4%; 131 Days at 5.15%

Frederick J. Peabody, Secretary/Treasurer

### REPORT OF THE RESOLUTIONS COMMITTEE

The membership of the South Dakota Academy of Science thanks Dr. Lloyd Svendsbye, President of Augustana College, for making the Augustana facilities available to the Academy and for hosting the 1992 annual meeting of the Academy. In addition, our thanks go to President and Mrs. Svendsbye for hosting the President's reception for Academy members.

The Academy extends its thanks to the local planning committee, and in particular to chairman Tim Sorenson, for making excellent arrangements for the meeting.

Thanks to Lynn Hodgson for the presidential address "Priming the Pump," which enlightened us about trends in student interest and enrollment in science and mathematics. She encouraged us to renew our dedication to educating our young people in the sciences and to increase our efforts toward attracting them to careers in science.

The Academy is pleased with and encouraged by the contributions of EROS scientists to the 1992 meeting of the Academy.

Thanks to Dr. William Kellog for his lecture, "Global Warming, Global Changes." His discussion of this current issue was both thought-provocative and informative.

President Mark Gabel is to be commended for the direction and leadership he has provided the Academy this past year.

The leadership provided by the Junior Academy Committee and participating high school science teachers for the members of the Junior Academy is greatly appreciated by the Senior Academy membership.

The Academy expresses its appreciation to Carroll Hanten, Proceedings Editor, for her continued dedication in producing a quality Academy Proceedings.

We continue to benefit from Emil Knapp's expertise and guidance in the publication of the Proceedings.

The Academy extends its congratulations to Harlan J. Heitz of Ipswich High School as Outstanding Physical Science Teacher of the year and to James Jackson of Sioux Falls Roosevelt High School as Outstanding Biology Teacher of the year.

Finally, the Academy congratulates Junior Academy award winners Carey Albers of Rapid City Stevens, and her teacher Roberta Gaines, and Cari Skogberg of Belle Fourche, and her teacher Doug Custis.

Respectfully submitted,  
Mike Foss, Chairman  
Clyde Brashier  
Roy Kintner

### JUNIOR ACADEMY COMMITTEE REPORT

The annual meeting of the the South Dakota Junior Academy of Science was held at Augustana College in Sioux Falls on Friday, April 10, 1992. Thirty-three students from eight schools joined the Academy and presented papers.

Student leadership for the year was provided by President Heather Hoye, Rapid City St. Martin's; Vice President Becky Farland, Belle Fourche; and Secretary-Treasurer Kerry Wendt, Belle Fourche.

Cari Skogberg, Belle Fourche, and Carey Albers, Rapid City Stevens, were selected by the judges to present their papers to the Senior Academy of Science. Their abstracts will be printed in the Proceedings. Black Hills State University, Dakota State University, South Dakota State University, and Augustana College generously provided scholarships to Beth Goodwin and Cari Skogberg, Belle Fourche. Alternates are Heather Johnson, Bristol, and Chad Hoffer, Edmunds Central. Carey Albers and Chad Schwieter, Rapid City Stevens, and Melanie Stevens, Belle Fourche were selected to present their papers to the Tri-State Symposium in St. Paul, Minnesota, in November of 1992. Alternates are Travis Konda, Sisseton, and Kerry Wendt, Belle Fourche. Each of the presenters was awarded a \$100 research grant for next year's research. Each alternate also received a \$50 grant from the Academy's AAAS Merit Grant of \$900.

The cooperation and generous support of vendors and supporters enabled the committee to award each presenter with at least one prize. Students and teachers appreciate this contribution to the program.

An area of concern is the decrease in research grant funding. The AAAS Merit Program operates upon interest from trust funds, which has been low for the last two years. At the same time the cost of supplies has increased, and another increase is anticipated for the June 1992 proposal. Thus, other funding sources must be obtained. Possibilities include the SD NSF SSI program and organizations.

The committee is grateful for the cooperation and support of Augustana College for the 1992 meeting. The efforts of Tim Sorenson were especially helpful. The positive atmosphere provided by the judges -- Amy Anderton and Kris Thoreson, Sioux Falls Lincoln; Craig Caselli and Doug Reinken, Sioux Falls Whittier; Deb Schultz, Sioux Falls Edison; Ruel Eneboe, Canton; and Ross Blank-Libra, Augustana -- contributed significantly to an excellent session.

Suggestions for the improvement of committee operations are solicited and appreciated.

Respectfully submitted,  
Ron Fahy, RC Stevens; Delbert Goodwin, BF Roosevelt;  
John Landegent, SF Lincoln; Kris Thoreson, SF Lincoln;  
Marvin Selnes, SF Science Supervisor, Chair

### SOUTH DAKOTA ACADEMY OF SCIENCE MEMBERSHIP

Letters after names indicate field of science: A, mathematics; B, physics; C, chemistry; E, geology; G, biological sciences; J, psychology; K, economics; M, engineering; O, agriculture; T, computer science; W, atmospheric science; Y, general science.

#### Life Members

Marjorie Beaty (A)  
Henry V. Cobb (J)  
Mark W. Delzell (G)  
Louis Jack Dorland (G)  
William Ekeman (A)  
S. Gordon Froiland (G)  
Harold Foss (G)  
Harold B. Goodell (G)  
Morton Green (E)  
Edna Grieb (A)  
John Paul Gries (E)  
Al L. Halstead (C)  
Marion Hilpert (G)  
William F. Houk (G)  
Ernest J. Hughins (G)  
Elmer R. Johnson (C)  
Harlan L. Klug (G)  
William Kohlmeyer (O)  
Richard John Landborg (C)  
Willard John Martin (C)  
Ralph H. McGregor (A)  
John C. Mickelson (E)  
Gottfried I. Moller (B)  
Walter Morgan (G)  
Oscar E. Olson (C)  
Fay L. Partlo (B)  
Robert M. Pengra (G)  
Roy W. Rissky (C)  
George Semeniuk (G)  
Charles A. Taylor (G)  
Theodore Van Bruggen (G)  
Charles M. Vaughn (G)  
Victor S. Webster (C)  
John W. Willard (E)

#### Augustana College

Maureen Diggins (G)  
Arie Gaalswyk (A)  
Milton P. Hanson (C)  
Leland G. Johnson (G)  
Robert Roy Kintner (C)  
Emil F. Knapp (A)  
Martha J. Lindbeck (C)  
Verlyn Lindell (A)  
V. Ronald Nelson (B)  
Lansing M. Prescott (G)  
Timothy Sorenson (A)

J. D. Thompson (B)  
Larry L. Tieszen (G)  
Karel Vander Lugt (B)  
Arlen Viste (C)  
Duane E. Weisshaar (C)  
Chet Whitney (B)

#### Black Hills State University

Doug Backlund (G)  
Thomas P. Cox (J)  
Max Durgin (A)  
Audrey Gabel (G)  
Mark Gabel (G)  
Art Griesser (G)  
D. W. Hildebrand (G)  
Jacob Haffner (G)  
Jack B. Lozier (G)  
Dewey A. ShROUT (G)  
Gerald Shryock (C)

#### Dakota State University

Clyde K. Brashier (G)  
Robert Buckman (G)  
Lee Carlson (A)  
David E. Cook (C)  
Michael D. Foss (B)  
Michael F. Hanna (A)  
James A. Janke (C)  
Jeffery S. Palmer (A)  
Paul W. Rasmussen (C)  
Rick Simmons (A)  
Jerald A. Tunheim (B)

#### Dakota Wesleyan University

Carroll Loran Hills (C)  
James L. Lefferts (C)  
Tim R. Mullican (G)  
Robert Tatina (G)

#### Mount Marty College

Shahrokh Ghaffari (C)  
Shirley Jennewein (G)  
Sr. Laeticia Kilzer (C)  
James Rasmussen (G)

#### National College

Dennis G. Aldinger (E)  
Leonard Huneke (A)

#### Northern State University

Duane A. Dolesji (B)  
A. S. Elkhader (A)  
Samuel B. Gingerich (C)  
Lynn M. Hodgson (G)  
Lenore M. Koczon (C)  
Susan Landon-Arnold (G)  
Raj K. Markanda (A)  
John C. Naughten (G)  
Dwayne W. Rehfeld (C)  
Dan Tallman (G)  
Erika Tallman (G)  
Lu Zhang (A)

#### Sioux Falls College

W. F. Klawiter, Jr. (B)  
L. Cliff Lewis (C)  
Keith Perkins III (G)

#### South Dakota School of Mines and Technology

Lynn Alex (E)  
Mike Boucher (T)  
Mark D. Fahrenbach (E)  
Arthur T. DeGaetano (W)  
Don C. Hopkins (B)  
J. Haworth Jonte (C)  
Robert Looyenga (C)  
James E. Martin (E)  
James Reid MacDonald (E)  
James R. Miller, Jr. (W)  
Perry H. Rahn (E)  
Robert D. Redin (B)  
William M. Roggenthen (E)  
John Foster Sawyer (E)  
Joel R. Sowell (E)  
Jack Weyland (B)  
Janet Whitmore (E)  
John S. Zogorski (M)

#### South Dakota State University

Sherwood O. Berg (G)  
Arvid Boe (G)  
Christopher W. Brey (G)  
Chen H. Chen (G)  
Sharon Clay (G)  
Nancy Cook (G)  
James J. Doolittle (G)  
George H. Duffey (B)  
Seyed M. J. Feghahati (G)  
Jeffrey L. Gellner (G)  
Harry A. Geise (O)

William R. Gibbons (G)  
Nels H. Granholm (G)  
Louise Guild (G)  
Lois Haertel (G)  
Harry G. Hecht (C)  
Warren Hein (B)  
Michael Hildreth (G)  
Kevin Hop (G)  
David J. Hurley (G)  
H. L. Hutcheson (G)  
William P. Jensen (C)  
Michael D. Johnson (G)  
Omar Kafawin (G)  
Leslie Kamstra (G)  
Kevin J. King (G)  
Alireza E. Koosej (G)  
Charles McMullen (G)  
Gerald A. Myers (G)  
Gary B. Peterson (G)  
Jennifer E. Peterson (G)  
Nathan Pulscher (G)  
Oren Quist (B)  
Joel Rauber (B)  
R. N. Reese (G)  
Diane Rickerl (G)  
Yu Rong (G)  
Ali Salehnia (T)  
Charles Scalet (G)  
Stephen J. Schiller (B)  
Hong-Kyun Shin (G)  
James D. Smolik (G)  
Leo Spinar (C)  
Edward Twidwell (G)  
Everett M. White (G)  
David W. Willis (G)  
Charlene Wolf (G)  
Ken Yocom (A)

#### University of South Dakota

Donald R. Abraham (B)  
Mary Abraham (C)  
Ron L. Baistone-Cunningham (C)  
James Batt (G)  
Frank O. Brady (C)  
Jack Butler (G)  
John W. Carlson (A)  
Cyndi Chen (A)  
Howard Coker (C)  
Cleland Cook (A)  
Kurt Dean (G)  
Raymond D. Dillon (G)  
George Duchossois (A)  
Frank A. Einhellig (G)

Royce C. Engstrom (C)  
 Charles R. Estee (C)  
 Steven Fladhammer (A)  
 Jose D. Flores (A)  
 Brent Graves (G)  
 James F. Heisinger (G)  
 Dona Henderson (A)  
 Jeffrey L. Henriksen (G)  
 Thomas Holme (C)  
 K. Wayne James (B)  
 Allen D. Johnson (G)  
 Gary D. Johnson (E)  
 Andrew E. Karantinos (A)  
 Christina Keller (B)  
 Miles Koppang (C)  
 Yuhlong Lio (A)  
 Alexander Mehaffey, Jr. (A)  
 Norman Miller (C)  
 M. A. Mortazavi (A)  
 Daniel Arthur Neufeld (G)  
 Otto W. Neuhaus (C)  
 Karen Olmstead (G)  
 Paul B. Otto (Y)  
 Frederick J. Peabody (G)  
 Robert J. Peanasky (C)  
 Christine Pharr (C)  
 Cheryl A. Schmidt (G)  
 James C. Schmulbach (G)  
 Gary D. Small (C)  
 Harold L. Smith (G)  
 M. Robert Stoner (C)  
 David L. Swanson (G)  
 John Thomas (C)  
 Don Ticknor (T)  
 Merlin J. Tipton (E)  
 Kari Webb (C)

### High Schools and Middle Schools

Paula R. Andenas (C)  
 Edgemont  
 Mike Barondeau (C)  
 Roscoe  
 Bruce Bessert (C)  
 Rapid City  
 Ron Fahy (G)  
 Belle Fourche  
 Mark Farrand (Y)  
 Rapid City  
 Roberta Gaines (C)  
 Rapid City  
 Delbert Goodwin (Y)  
 Belle Fourche

Marvin Hanson (B)  
 Wolsey  
 Clinton Kiewell (Y)  
 Buffalo  
 John Landegent (G)  
 Sioux Falls  
 Jerry Loomer (B)  
 Rapid City  
 Frances Olson (Y)  
 Newell  
 Jan Palmer (Y)  
 Warner  
 Sherri Price (Y)  
 Belle Fourche  
 Vijaya Ramakrishnan (C)  
 Rapid City  
 Jane Roseland (C)  
 Rapid City  
 Marvin D. Selnes (C)  
 Sioux Falls  
 Richard J. Thomas (Y)  
 Aberdeen  
 Robert Waddell (C)  
 Belle Fourche  
 Alan B. Ward (Y)  
 Viborg  
 Mary Warren (Y)  
 Belle Fourche

### Out-of-State Schools

Dennis T. Disrud (G)  
 Minot State University, North Dakota  
 Lowell M. Duffey (G)  
 Jacksonville State University, Florida  
 Robert D. Hempel (G)  
 Western Iowa Tech  
 Joseph A. Kawatski (G)  
 Viterbo College, Wisconsin  
 Glenn E. Kietzmann, Jr. (G)  
 Wayne State University, Nebraska  
 Allen J. Kihm (E)  
 Minot State University, North Dakota  
 Robert A. Kreber (G)  
 University of Wisconsin  
 Peter Maldonado (C)  
 Findlay College, Ohio  
 Daryl Mergen (B)  
 Fort Hays State University, Kansas  
 James D. Patterson (B)  
 Florida Institute of Technology  
 Theodore W. Schultz (K)  
 University of Chicago

Arthur W. Struempler (C)  
 Chadron State College, Nebraska  
 Wade Winters (G)  
 Urbandale High School, Iowa  
 Ronald Zawislak (E)  
 Middle Tennessee State University

### Non-Academic

Kevin J. Buhl (G)  
 U. S. Fish and Wildlife, Yankton  
 Charles C. Coffman (G)  
 W. V. Dept. of Agriculture  
 James A. Donohue (E)  
 S. D. Arch. Research Center, Rapid City  
 Paul Fugazzotto (C)  
 Urinary Research Center, Rapid City  
 Louis Hamilton (E)  
 U. S. Geological Survey, Huron  
 Steven J. Hamilton (G)  
 U. S. Fish and Wildlife, Yankton  
 Carroll J. Hanten (G)  
 S. D. Dept. of Agriculture, Pierre  
 Robert L. Hanten (G)  
 S. D. Game, Fish, Parks, Pierre  
 Joe Ideker (G)  
 McDonnell Nat. Hist. Center, Tex.  
 Martin J. Jarrett (E)  
 S. D. Geological Survey, Vermillion  
 Jeffrey D. Jung (C)  
 T & R Service, Colman  
 Eugene L. Miller (G)  
 Natl Grain Insect Res Lab, Brookings  
 James J. Norton (E)  
 U. S. Geological Survey, Rapid City  
 David J. Ode (G)  
 S. D. Natural Heritage Program, Pierre  
 Eileen H. Peifer (G)  
 Discovery Center, Pierre  
 Walter E. Riedell (G)  
 Natl Grain Insect Res Lab, Brookings  
 John Foster Sawyer (E)  
 S. D. Geological Survey, Rapid City  
 Merlin J. Tipton (E)  
 S. D. Geological Survey, Vermillion

### Associate Members

Seetha Ananth, SDSU  
 Dennis Blundt, SDSU  
 Joe Collette, USD  
 Michael Coddington, Augustana  
 Sheldon Cooper, USD  
 Jeffrey French, SDSM&T  
 Sandy Goldammer, USD

Andrew Grayot, Augustana  
 Derek Groft, USD  
 Kathleen Hallman, USD  
 Angela Hejl, USD  
 Robert Henning, Augustana  
 Teresa Hickens, Mount Marty  
 Sanjay Joshi, SDSU  
 Henry Kayongo-Male, SDSU  
 Steve Konda, USD  
 Gene Kopetsky, Northern State  
 Stan Lubinga, USD  
 Fatima Minyard, SDSU  
 Kara Paintner, USD  
 Peter Prescott, Augustana  
 Hongwei Qu, USD  
 James Sands, Augustana  
 Sanjay Sharma, SDSU  
 Saileela Sriram, SDSU  
 Patricia Tille, Sioux Falls College  
 Daniel Van Peurse, USD  
 Richard Weaver, Augustana

### Junior Academy

Carey Albers, Rapid City Stevens  
 Keri Beals, Belle Fourche Roosevelt  
 Jeremy Berdan, Belle Fourche Roosevelt  
 Josie Brandenburger, Sisseton  
 Jody Burch, Belle Fourche Roosevelt  
 Chandy Davis, Belle Fourche  
 Alisha Erk, Belle Fourche Roosevelt  
 Tausha Erk, Belle Fourche Roosevelt  
 Sonny Foster, Belle Fourche Roosevelt  
 Becka Goodwin, Belle Fourche Roosevelt  
 Beth Goodwin, Belle Fourche  
 Erika Grimmelmann, B. Fourche Roosevelt  
 Joanie Hindman, Belle Fourche Roosevelt  
 Chad Hoffer, Edmunds Central  
 Heather Johnson, Bristol  
 Daren Konda, Sisseton  
 Travis Konda, Sisseton  
 Pat LaClaire, Sisseton  
 Chad Lamb, Belle Fourche  
 Olivia Norlin, Belle Fourche Roosevelt  
 Kevin O'Dea, Belle Fourche Roosevelt  
 Joe Robertson, Yankton  
 Chad Schwieter, Rapid City Stevens  
 Cari Skogberg, Belle Fourche  
 John Staub, Sisseton  
 Melanie Stevens, Belle Fourche  
 Wendy Stevens, Belle Fourche  
 Tania Tolsma, Yankton  
 Kerry Wendt, Belle Fourche  
 Joel Westra, Sioux Valley

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**RESOLUTIONS CONCERNING VERTEBRATE PALEONTOLOGY**

Passed by the South Dakota Academy of Science  
at the 1991 Annual Meeting

**RESOLUTION 1:**

Whereas, fossil vertebrate specimens are a part of South Dakota's cultural heritage,

Whereas, fossil vertebrate specimens are essentially a non-renewable resource, and

Whereas, fossil vertebrate specimens and their geographic, stratigraphic, and taphonomic occurrences are unique and of scientific value,

Be it resolved that every effort be undertaken to retain fossil vertebrate specimens and their accompanying collection data in the public trust.

Be it further resolved that proper collection data and proper extraction techniques be employed to preserve South Dakota's fossil specimens, and

Be it further resolved that every effort be undertaken to retain South Dakota's fossil heritage in South Dakota, and for those specimens which leave state boundaries, appropriate documentation be required of their collection data and permanent deposition in public institutions.

**RESOLUTION 2:**

Whereas, fossil vertebrate specimens are essentially a non-renewable resource, are scientifically important, and are a part of South Dakota's cultural heritage,

Be it resolved that collection on public lands be done only through permit and that all collection data and disposition of specimens be documented and available to researchers and the public, and

Furthermore, for other specimens collected on private lands that all collection data and disposition of specimens be made available to researchers and the public.

**CORRECTION FOR VOL. 70**

In the article, "Normal and Lognormal Distributions as Models for Annual Precipitation in South Dakota," by Finney and DeBoer, page 173, the first term in the polynomial  $P(x)$  is given as 3.986520422947211  $x$ . It should instead be 0.3986520422947211  $x$ .