

## PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 2002

SARAH H. SWAIN, SECRETARY TAS

*Middle Tennessee State University, Murfreesboro, Tennessee*TENNESSEE ACADEMY OF SCIENCE  
EXECUTIVE COMMITTEE MEETING  
19 April 2002

President Jack Rhoton called the meeting of the Executive Committee of the Tennessee Academy of Science (TAS) to order at 7:10 PM CST, on the campus of Belmont University, Nashville, Tennessee, 19 April 2002. Members present were Karen Kendall-Fite, President-elect; John W. Harris, Treasurer; Sarah H. Swain, Secretary; Martin V. Stewart, Past President; M. Gore Ervin, Managing Editor; Richard J. Raridon, Director of the Collegiate Division; J. Michael Redding, Meeting Coordinator; David Pitts, Member-at-large; Steve Wright, Member-at-large; Stuart Elston, Member-at-large; Linda Jordan, Science Consultant, State Department of Education; David J. Wilson, Industry and Government Committee Chair; Steve Murphree, Nominating Committee member and Belmont University host. Attending as guests and representatives of the Tennessee Science Teachers Association (TSTA) were Ruth Woodall, TSTA President and Barry Farris, TSTA Treasurer.

Minutes of the 8 November 2001 Executive Committee meeting were sent to committee members by Secretary Swain prior to the meeting. A motion to approve the minutes passed. Updated lists of Executive Committee and Standing Committee members were provided by Secretary Swain. President Rhoton introduced newly appointed Member-at-large Dr. Stuart Elston, Professor of Physics, the University of Tennessee at Knoxville. Also introduced by President Rhoton were visitors from TSTA, Ruth Woodall, TSTA President, and Barry Farris, TSTA Treasurer.

## REPORTS FROM OFFICERS AND DIRECTORS

President-elect and Program Chairperson Karen Kendall-Fite discussed plans for the 2002 annual meeting to be held on the campus of East Tennessee State University (ETSU), Johnson City, Tennessee, on November 14-15, 2002. A Local Arrangements Committee has been formed with the help of President Rhoton, and plans for a plenary speaker to discuss recent fossil studies in the eastern region of the state are being investigated. Members of the Local Arrangements Committee at ETSU are Dr. Martin Barrett, Dr. Gary Henson, Dr. Steve Wallace, Dr. Jeff Wardeska, Dr. Lee Pike, Dr. Phillip Scheuerman, Dr. Diane Nelson, Dr. Fred Hossler, Dr. Jeff Knisley, and Dr. Jack Rhoton. The committee met on 24 January 2002 to begin planning for the meeting. Dr. Fred Hossler has agreed to serve as Section Chair, Health and Medical Science, and Dr. Jeff Knisley will serve as Section Chair for Mathematics and Computer Science.

*Meeting Coordinator*—J. Michael Redding presented the following report:

“By all accounts and personal observation, the 2001 Joint Meeting of the Tennessee and Kentucky Academies of Science was a most successful event for both parties. I received numerous positive comments during the meeting, to the credit of Dr. Stewart and his local arrangements committee.

“During the three years I have served as Meeting Coordinator, there has never been a clear assignment of responsibility, other than “to assist” the President and President-elect with the planning and conduct of the annual meeting. At the suggestion of several of the TAS Executive Committee members, I hereby propose to codify the responsibilities of the job. I base my suggestions on the successful model used by the Kentucky Academy of Science. The guiding theme of this proposal is that the Meeting Coordinator should assume responsibility for some of the routine and repetitive aspects of the planning for the annual meeting that have been the responsibilities of the President-elect.

“Specifically, each year in early June, the Meeting Coordinator should provide to the President-elect templates of the Call for Papers and the Title and Abstract Submissions Forms along with a current list of Section Chairs and their contact information. With the approval of the President-elect, the Meeting Coordinator should ensure that these items are mailed to the general membership in July or August. The Meeting Coordinator will mail updated instructions for Section Chairs and copies of the Student Paper and Poster Judging Forms and Criteria to each Section Chair in August. The Meeting Coordinator should receive from the Section Chairs the titles, authors, and affiliations of all submitted presentations and prepare a draft technical program for the President-elect to evaluate and edit as needed in September. After the President-elect finalizes the Program content, including information pertinent to the plenary talk and social functions, the Meeting Coordinator will ensure that room assignment information is appended in consultation with the Chair of the Local Arrangements Committee (LAC), along with campus maps, committee membership, and other information normally included in the Program. In October, the Meeting Coordinator will have the Program printed and delivered to the persons responsible for mailing (perhaps the Meeting Coordinator) and posting on the TAS website.

“The Meeting Coordinator will develop a list of tasks normally associated with the conduct of the meeting and provide this list to the Chair of the LAC as soon as she/he is designated by the President-elect. Thereafter, the Meeting Coordinator will communicate regularly with the LAC Chair on matters pertaining to the annual meeting to ensure that the tasks are being accomplished in a timely manner. Throughout the process, the Meeting Coordinator should be the central point of contact for the LAC,

Section Chairs, and individual presenters who might have problems or questions about any detail of the Program (schedules, audiovisual needs, etc.).

"During and after the meeting, the Meeting Coordinator will collect from each Section Chair the results of the student paper and poster competitions and the results of the Section elections. Names and affiliations of the students will be forwarded to the appropriate person for printing of certificates and to the Treasurer for the purpose of notifying students of their honorary TAS membership for the year. Results of Section Elections will be recorded and an updated list will be sent to the new President and Secretary.

"The Meeting Coordinator, with the assistance of the Treasurer, will keep records regarding attendance and participation at the annual meetings, this information being of some use for planning future meetings."

Following discussion, the Executive Committee voted to approve the duty changes recommended by Meeting Coordinator Redding. Executive Committee members were asked to review duties listed in the TAS Operations Manual for overlap and needed changes, and to report these to Meeting Coordinator Redding.

*American Association for the Advancement of Science (AAAS) Section Y*—Representative J. Michael Redding reported on the 2002 AAAS/NAAS meeting:

"Representing the TAS, I attended the annual meeting of the AAAS in Boston on February 15–17, 2002. The following comments summarize my activities and information deemed pertinent to TAS.

"The AAAS Affiliates Meeting was held on February 15. AAAS President Peter Raven presided and made a few general remarks about the health of the AAAS. He also explained the AAAS resolution against "reproductive cloning" while still approving its use for "therapeutic cloning" (as with stem cell methodologies). Alan Leshner, the new Chief Executive Officer of AAAS pledged to make service to the affiliated members his highest priority. He also indicated a strong interest in promoting "grass roots" development of science education programs. Al Teich and Kei Koizumi discussed details of the federal budget relative to research and development. Their analyses are available for members on the AAAS website.

"The Section on General Interest in Science and Engineering (Section Y) held its annual business meeting on February 15. Chairperson Julie Miller (Science News) presided. Assad Panah was elected as the new Chair-elect to follow Elizabeth Hafen, Massachusetts, who assumed the Chair's position on February 21, 2001. Deborah Stine (The National Academies of Science) was announced as the newest Member-at-large. Three new AAAS Fellows were elected from the Section, including Felice Frankel, Barbara Gastel, and Thomas Moss.

"John Safko has developed a Section website which should be accessible through the AAAS site but apparently the linkage is not obvious. He suggests using <http://science.aaas.org/~general/>. Links to Section sponsored symposia will be listed on the site along with general information.

"I attended the annual meeting of the National Association of Academies of Science (NAAS) delegates on February 16. President Howard Pitkow (Pennsylvania) presided. Steve Case (Mississippi) was recognized as the incoming President. Dr. Case emphasized the importance of the NAAS as a sponsor of the American Junior Academy of Science and, in particular, the success of the NAAS sponsored "Breakfast with Scientists" event.

"The NAAS Delegates Workshop was held on February 16

prior to the Business meeting. Representatives of Ingenta, an electronic publishing company in Cambridge, Massachusetts, provided an overview of their company's services and trends in the growing business of publishing science content in various electronic formats. Comprehensive and integrated searching and linked referencing capabilities are major advantages of their products. There was much animated discussion about the possibility of packaging and marketing the collective content of many or all of the state academies journals. NAAS President-elect Case agreed to investigate further the possibilities for such a venture. My personal opinion is that it would be a major boon to the visibility of our journal and, moreover, would potentially increase the revenue generated from library subscriptions to a comprehensive (all journals bundled together) product."

Discussion followed and President Rhoton thanked Representative Redding for attending on behalf of TAS.

*Treasurer*—John W. Harris presented the following report and budget proposal:

CASH BALANCE—July 1, 2002 43,991.72

#### RECEIPTS

Membership Fees	7,175.00
Institutional Dues	4,500.00
Library Subscriptions	2,690.00
Interest Earned, FirstStar Bank	112.88
Dividends Earned, PaineWebber	750.96
Contributions	115.00
Annual Meeting Registration, Meals	4,808.00
Page Charges	3,510.00
<i>Journal</i>	50.00
TJAS Trust Fund	2,677.31
TOTAL RECEIPTS	26,389.15

TOTAL CASH AVAILABLE 70,380.87

#### DISBURSEMENTS

<i>Journal</i>	12,593.40
Tennessee Junior Academy of Science	9,803.86
Treasurer's Expenses	1,636.06
Secretary's Expenses	649.87
Travel	555.06
Dues/Fees	142.50
Science Fairs	3,323.00
Annual Meeting Expenses	9,875.45
Security Deposit	100.00
Plaques and Awards	124.00
Auditor's Fee	985.00
AAAS Meeting	1,325.72
TOTAL DISBURSEMENTS	41,113.92

CASH BALANCE—April 15, 2002 29,266.95

Receipts	26,389.15
Disbursements	41,114.92
Cash Decrease	-14,725.77

#### BREAKDOWN OF HOLDINGS

US Postal Service, Lawrence, KS	1,055.38
TTU Account	190.71
Checking Account, FirstStar Bank	2,964.12
Savings Account, FirstStar Bank	9,974.88
Money Market Fund, PaineWebber	15,080.96

TAS HOLDINGS—April 15, 2002 29,266.05

TJAS TRUST FUND (Vanguard Star Fund)	
(9240.619 shares owned as of 03/31/02)	
Account Value as of 09/30/01	144,020.88
Disbursements (Dividend Dist.) 12/21/01	2,677.31
Account Value as of 12/31/01	151,915.79
Account Value as of 03/31/02	153,579.09
LIFE MEMBERS TRUST FUND (PaineWebber)	
Value of Account as of 03/31/02	15,000.00
TOTAL VALUE OF HOLDINGS	
as of April 15, 2002	188,286.93

The Executive Committee passed a motion to accept the Treasurer's Report. Treasurer Harris presented the budget proposal as follows:

#### RECOMMENDED BUDGET FOR 2002–2003

	Projected Income (2002–2003)
Membership Dues	9,000.00
Institutional Members	5,000.00
Annual Meeting Fees	4,000.00
Journal Page Charges	3,000.00
Library Subscriptions	2,500.00
Interest/Dividends Earned	2,000.00
Contributions	150.00
TJAS Trust Fund	4,000.00
Life Members Trust Fund	0.00
TOTAL	29,650.00
	Account Recommend (2002–2003)
Secretary	650.00
Treasurer	1,300.00
Junior Academy	12,000.00
Journal	10,000.00
Annual Meeting	4,000.00
Collegiate Division	600.00
Travel	500.00
AAAS Meeting	1,500.00
Audit Fee	1,000.00
Annual Dues/Fees	150.00
Insurance/Security	100.00
Plaques/Awards	200.00
President	50.00
Website Maintenance	50.00
Publicity	200.00
Science Fairs (VSP)	3,325.00
TOTAL	35,625.00

Treasurer Harris reported that the Rhodes College Institutional Membership has not been paid this year. Records of annual meeting attendance showed attendance was down at the last two meetings. Executive Committee members remarked that reduced attendance has characterized many recent national, regional, and state professional meetings. Treasurer Harris attributed much of the approximately \$40,000 net loss in holdings to "catch-up" publications of the *Journal of the Tennessee Academy of Science*, and to the recent stagnant national economy. If the present economic trend continues, TAS may need to consider new sources of revenue. Treasurer Harris reported that TAS dues had not been increased in ten years. A motion to approve the budget passed.

*Managing Editor*—M. Gore Ervin discussed the following report:

"There were six manuscripts submitted in 2001: five have been published/in press and one was rejected. A total of four manuscripts have been submitted this year (2002). One is in press, two have been returned to the authors for revision, and one is under review.

"The eleven manuscripts currently included in the *Journal* database are distributed as follows: Accepted/in press (4), in review (1), returned for revision (6).

"The manuscripts accepted/in press, represent submissions from: 1995 (1), 1996 (1), 2001 (1), and 2002 (1). The manuscripts returned for author revision represent one manuscript from 1996, one from 1999, two from 2000, and two from 2002.

"The fall (October) 2001 issue contains four papers and will be distributed to the Academy by mid-May, 2002. The Winter 2002 (77:1) *Journal* issue is in press, and contains the 2002 President's profile, minutes of the 2001 Executive Committee meetings (spring and fall), abstracts from the fall 2001 meeting, award winners, and new members for 2001. The spring 2002 (77:2) issue contains four manuscripts.

"Dr. Robert Riser from the Department of Computer and Information Science, East Tennessee State University, has resigned as Editor of the Ethics in Science and Technology Section. On behalf of the *Journal* and the Academy, I would like to express my gratitude and appreciation for Dr. Riser's long and faithful service. To replace Dr. Riser, I nominate Dr. Norman Tolk, Department of Physics and Astronomy, Vanderbilt University as the new Editor of the Ethics in Science and Technology Section. If approved, Dr. Tolk has agreed to a three-year term beginning May 2002."

A motion to accept the report and to approve Dr. Norman Tolk as Editor of the TAS Ethics in Science and Technology Section passed. Managing Editor Ervin discussed plans to improve the presentation of the *Journal* on the TAS web site. He asked committee members to continue to encourage manuscript submissions.

*Collegiate Division*—Director Richard J. Raridon discussed the following report:

"The Western Regional Meeting was held at LeMoyné-Owen College 23 March 2002. Students from eight different schools presented thirty-six papers. They are posted under the Collegiate Division on the TAS web site.

"The Middle Regional Meeting was held at Austin Peay State University in Clarksville 20 April 2002. Fifteen papers were presented by students from three schools. They are posted at [www.apsu.edu/matthewsftas/tas2002.htm](http://www.apsu.edu/matthewsftas/tas2002.htm).

"The Eastern Regional Meeting was held at Pellissippi State Technical Community College in Knoxville on 19 April 2002. Ten papers were presented by students from five schools.

"The regional sponsors are Dr. Fred Matthews, Austin Peay State University, Dr. Gary Litchford, The University of Tennessee, Chattanooga, and Dr. Charles Biggers, The University of Memphis."

Director Raridon reported that Dr. Litchford plans to resign soon as Eastern Division sponsor. TAS Publicity Committee Chairperson Teresa Fulcher coordinated the meeting at Pellissippi State Technical Community College and will seek a sponsor from among those participating in the meeting.

Director Raridon recommended Dr. Charles Biggers, sponsor for the Western Region, for the TAS Distinguished Service Award. A motion to approve the recommendation passed.

*Tennessee Junior Academy of Science*—Director Jack Rhorton discussed the following report:

"The 2002 spring meeting of the Tennessee Junior Academy of Science (TJAS) met on Friday 19 April 2002 at Pearl Cohn High School in Nashville, Tennessee. A total of twenty-six students were invited to present their research papers. This year seventy-three students were involved in TJAS research from throughout the state. The top TJAS research papers will be published in the upcoming issue of the *Handbook and Proceedings of the Tennessee Junior Academy of Science*.

"During the April meeting a framed certificate and a small honorarium (\$100) was presented to an outstanding science teacher from each region of the three divisions of the state. The recipients of this year's awards are: Barbara Wiseman, Advanced Placement Biology and General Biology, Dobyns-Bennett High School, Kingsport; Constance Brown, Chemistry and Physics, McEwen High School, McEwen; Victoria Johnson, Honors Biology and Chemistry, Germantown High School, Germantown. These TAS outstanding secondary teacher awards recognize teachers for their outstanding interest in science.

"Two student winners from the 2001 competition recently (February 13–17, 2002) presented their research at the American Junior Academy of Science (AJAS) in Boston, Massachusetts. The AJAS showcases the work of promising future scientists who represent their state Junior Academies from across the nation. Ankita Baxi and Resham Patel represented Tennessee and the TAS and shared their winning work in oral presentations and poster sessions during the AJAS meeting. Ankita Baxi will be competing in the 2002 International Science Fair in Louisville, Kentucky."

Director Rhoton recommended that a two-day TJAS meeting be considered for the future. This year marks the 60th year for TJAS. It is the oldest secondary science competition in the state. Managing Editor Ervin would like to have a feature article commemorating the 60 years for the *Journal*. Steve Murphree proposed a state legislature proclamation to recognize the 60-year history of TJAS.

*Electronic Communications*—Director David Kesler did not submit a report. Director Kesler had expressed his desire to pass the duties to someone with extensive computer expertise and experience. Dr. James Howard, Professor of Chemistry, Middle Tennessee State University, has agreed to take over the responsibilities as Director of Electronic Communications beginning summer 2002.

*Visiting Scientist Program*—Director Michael Daley submitted the following report:

"For those who are new to the Executive Committee, the proposed plan for the Visiting Scientist Program was as follows. Regional coordinators are to be responsible for a given geographic area. In addition to the regional science fair awards, each coordinator is to be responsible for actively getting TAS members to visit schools. I propose that the Visiting Scientist Program be formally restructured. Instead of a single director for the state, there will be regional directors for the program.

"As a follow-up to the TAS Executive Committee meeting in November 2001, I attended the TSTA executive board meeting with Jack Rhoton. We discussed the issue of a joint annual meeting with TSTA. In late December I discussed the possibilities of the joint meeting with Michael Osborne of TSTA. Further discussion concerning the joint meeting will occur at this executive meeting.

"Regarding the joint meeting, I suggest that each section (Zoology, Physics, etc) make a Visiting Scientist Program poster. The poster could have an outline of our state. Photos of TAS

members willing to participate in the program and their subject with a brief description could be pinned on the map. Over the three or four day TSTA meeting teachers will have the opportunity to review the posters and obtain more specific information about the program. As another suggestion, I think it would be of value for us to publish some of the TSTA papers in the Academy's journal.

"The Shelby/Memphis City Science Fair was held the week of March 18th. Judging was done on March 19th. I have the certificates and the checks, and will deliver them to each student at her/his school.

"Finally, the director of this fair for the past several years has been Brother Ryan, a TAS member. I think his work in this area may merit a special recognition award."

Discussion related to the report included the preference by President Rhoton to postpone the appointment of state division coordinators until an attempt has been made to reach teachers through TSTA.

*State Department of Education*—Science Consultant and TAS Executive Committee member Linda Jordan discussed K–12 science textbook content accuracy verification. The State Textbook Commission has used committees of classroom teachers to examine K–12 textbooks for adherence to state and national standards for curriculum, pedagogy, and content organization. The Commission is requesting the assistance of TAS members to examine student texts and annotated teacher editions and to document errors found. Books would be sent directly to members willing to participate during summer 2002. Instructions for receiving books and submitting reports can be obtained through the Tennessee Department of Education, Office of Textbook Services, Larry S. Gregory, Director.

## REPORTS FROM COMMITTEES

*Education Committee*—Chairperson Cindi Smith-Walters submitted the following report:

"Initiatives since last meeting of this committee:

Provided information on the TAS Networks program to Linda Jordan to distribute at the November 2001 TSTA meeting in Memphis.

Met with Linda Jordan and Ruth Woodall (TSTA President) to increase communication between the State Dept. of Education (DOE) and TSTA and consider joint efforts between the two organizations.

Article submitted for publication to Becky Ashe, editor for TSTA newsletter. Copies sent to TAS Education Committee, TAS Secretary, and TAS President.

Communicated with Becky Ashe to offer TAS services in developing and writing a regular column for their newsletter.

Worked with Linda Jordan and David Wilson to provide a list of possible science fair judges to Tennessee DOE. (Thanks, Dave, for this fine work!). I understand this list was mailed to schools across the state through the DOE.

"News and General Information:

The Tennessee DOE is putting together a 'sampler' of activities, limited content information, and cross-references to the K–8 State Science Framework. This document is currently being developed and will soon be available via disk and on the web.

The Tennessee DOE is seeking interested TAS members to review textbooks (particularly at the middle grades level) in the sciences and mathematics. Too often the State Textbook Evaluation Committee is overwhelmed with texts and does not have

the time (and sometimes the expertise) to adequately review all textbooks being considered for adoption. Even at the high school level, very often only those texts used in advanced placement courses are reviewed for accuracy. Linda Jordan and Ruth Woodall can give you more information on this.

“Things to consider and talk about:

Adding a question concerning interest in serving as a science fair judge to the membership form.

Bob Marlow suggested creating a link from the TAS website to state (or regional) universities (for example: University of Tennessee, Chattanooga Society of Physics Students, Vanderbilt, Georgia Tech, Georgia State, etc.) to possibly generate interest in joint field trips, etc. This might also be helpful for labs or industries interested in hosting field trips.

Textbook reviewers—We need someone to head up this effort and work with either Linda Jordan or Larry Gregory of the Tennessee DOE.

What about the regular column for TSTA? If it is something we would like to do, what kind of article(s) should we do? Who would be willing to head that up?

Do we want to ‘hire’ someone to take over the TAS website and update it as necessary? If so, I believe a domain registration would be around \$35 a year and I know of someone who would be willing to ‘over-see’ it for about \$15 for every hour of work they put in.”

Following discussion by the Executive Committee, a motion to authorize the purchase of a domain name for the TAS website was approved.

*Industry and Government Committee*—Chairperson David Wilson discussed the following report:

“The Industry and Government Committee has been blessed with the advice, counsel, and help of Ted Lundy, past committee chairman. He is arranging with Sue Richardson (at Tennessee Technological University) to continue to help for this year, particularly in getting out the mailing to solicit nominations. We will need to make arrangements for her compensation for time and materials (paper, envelopes, postage). So it looks as though we will be able to select an award recipient for this year. One possible cloud on the horizon is the possibility of the termination of all the state’s Centers of Excellence, including Tennessee Technological University Center for Manufacturing Research, at the end of June. If this occurs, I anticipate that it will be impossible to make the award this year.

“We have not yet located a new permanent chair and “academic home” for the committee. We need someone who is interested in continuing the award, has the time and energy to put into it, and who has secretarial help available to assist on the quite substantial load of work involved. Suggestions of people who might be interested would be most welcome.”

Past President Stewart suggested an investigation to determine if an industrial science society exists in Tennessee. Such a group could provide helpful information and assistance.

*Publicity Committee*—Chairperson Teresa Fulcher submitted the following report on the activities of the Publicity committee since November 2001:

“Photographs of the November Meeting of the Academy were submitted to Dr. David Kesler and loaded on the TAS website.

Press Releases and photographs were sent to the following papers regarding the TAS awards presented at the November Meeting: Dick Raridon—Distinguished Service Award; The Oak Ridger and The Knoxville News Sentinel, Gary Barringer—Dis-

tinguished Secondary School Science Teacher; Elizabethton Paper and the Johnson City Press, and David J. Wilson—Distinguished Scientist Award; The Tennessean.

The student winners of the oral and poster competition at the November 2001 TAS annual meeting all received certificates of recognition and the list of winners was published in the January 2002 issue of the JTAS.

I also established communication with all regional coordinators regarding the TAS Science Fair Awards. Certificates were created and mailed to either the coordinators or to the student winners. Following is the list of recipients:

1. Upper East Tennessee Science Fair, Inc., Johnson City. TAS Representative—Dr. Jack Rhoton. Winners to be announced at the November 2002 Executive Committee Meeting.

2. Memphis Shelby County Science Fair, Memphis. TAS Representative—Dr. Michael L. Daley.

Senior High Division

First place: James O’Brien, Lausanne School. Title: *Integrals*.

Second place: Ankita Baxi, Houston High School. Title: *Expression of Constitutively Active Oncogene, C-Src Disrupts Cell-Cell Adhesion*.

Third place: Huong Nguyen, Memphis Catholic High School. Title: *How Does Temperature Affect The Dissolving Rate of Alka Seltzer Tablets?*

Middle School Division

First place: Matthew McGuire, St. Dominic Middle School. Title: *Can you Anodize Aluminum?*

Second place: Kelly Turner, St. Mary’s Episcopal School. Title: *Color Testing*.

Third place: Milton Stewart, John P. Freeman Optional School. Title: *The Light Bulb*.

3. Middle Tennessee Science and Engineering Fair, Vanderbilt. TAS Representative—Dr. C. Steve Murphree.

TAS Physical Sciences Awards

First place: Emmie Granbery, Harpeth Hall High School, Grade 11, Award: \$75.00.

Second place: William Newell, Northwest High School, Grade 10, Award: \$35.00.

Third place: Joshua Schoenfield, J. T. Moore Middle School, Grade 8, Award: \$15.00.

TAS Biological Sciences Awards:

First place: Aaron Levy, University School of Nashville, Grade 12, Award: \$75.00.

Second place: Anna Zhu, Martin Luther King Jr. Magnet School, Grade 7, Award: \$35.00.

Third place: Monica Qiu, Martin Luther King Jr. Magnet School, Grade 7, Award: \$15.00.

TAS Biochemistry and Molecular Biology Awards:

First place: Yiliu Chen, University School of Nashville, Grade 10, Award: \$75.00.

Second place: Brian Avaritt, Blackman High School, Grade 11, Award: \$35.00.

Third place: Laura Lukehart, Martin Luther King Jr. Magnet School, Grade 11, Award: \$15.00.

4. Chattanooga Regional Science and Engineering Fair, Chattanooga. TAS Representative—Martha B. Davis.

## Junior Division

Clayton Galloway, Boyd-Buchanan School, Title: *Turning Garbage into Fertilizer*.

Christopher Dietz, H. Louis Scott Junior High School, Title: *Propeller Thrust*.

## Senior Division

Summing Lin, Ooltewah High School, Title: *A Study of Tyrosinase Inhibition*.

Seth Heltsley, Tullahoma High School, Title: *Emulating Serpentine Locomotion for Rescue and Reconnaissance*.

5. Cumberland Plateau Regional Science Fair, Cookeville. TAS Representative—Dr. John Harris.

TAS Biological Science Award: Heather Hannahan, Clark-range High School.

TAS Mathematics and Physical Science Award: Scott Emmons, DeKalb County High School.

6. Southern Appalachian Science and Engineering Fair. TAS Representative—Teresa Fulcher.

## Junior Division

Todd Dunnivant, Norris Middle School, Title: *Hot or Not*.

Thanh A. Lay, St. Mary's School, Oak Ridge, Title: *Who's The Best Picker Upper?*

## Senior Division

Reinier Van Mourik, Webb School of Knoxville, Title: *Heat Transfer and Mass Change*.

Andy Lavender, Maryville High School, Title: *A Study of Planarian Memory*.

7. Jackson Regional Science Fair, Jackson. TAS Representative—Dr. Andy Sliger.

John William Carruth, Camden Central, Grade 11. Title: *A Study of Chaos in Experimental and Theoretical Systems*.

Adleen Crapo, Westview High School. Title: *The Effect of Various Substances on the Bioremediation of Soil to Prevent Erosion*.

*Membership Committee*—Executive Committee member David Pitts presented the following report authored by members David Kesler and Andrew Sliger:

"The following suggestions were made to improve membership in the Academy:

1. Establish a membership committee consisting of one "Division Chair" from each Grand Division of the State of Tennessee and charged with the following responsibilities:
  - A. Identify and appoint a campus membership chairperson on each college and industrial campus in his/her division of the state.
  - B. Personally contact each campus membership chair in April of each year and solicit names of potential new members.
  - C. Submit names of new potential members to the Academy President by June 1 each year and request the president to write a letter inviting the scientists to join the Academy.
  - D. Be responsible for maintaining active campus membership chairs from one year to the next.
  - E. Request that each campus membership chair follow up after the letter from the president arrives for a person-to-person invitation to join the Academy.
2. Post, perhaps as a histogram, the institutional representation at meetings with some sort of prize going to the institution

that has the highest number and/or highest proportion represented. A traveling plaque has been suggested as a prize, along with a letter to the president of the college acknowledging the high attendance.

3. Attempt to improve institutional membership by trying the following:
  - A. Offer one free page in the journal each year to institutional members to be used for:
    - a. Feature an outstanding scientist from their campus. This would be good publicity for their campus and give recognition to well-deserving faculty members in science who are, hopefully, TAS members.
    - b. Some colleges might want to use the page to highlight a program, a field station, or outstanding graduate student instead of the Featured Scholar mentioned above.
  - B. Offer free first year registrations to the annual meeting for those belonging to institutions that are members.
4. Recognition of long-standing membership in the Academy:
  - A. We could publish in the *Journal* the names of members who have 20, 30, 35, and 40 years of continuous membership.
  - B. For persons with more than 40 years, we could publish each name and the number of years of continuous membership.
  - C. Alternatively, recognize the person with the longest continuous membership at the annual meeting or at the joint meeting with the Kentucky Academy of Science every five years."

During discussion of the report, Treasurer Harris pointed out that incomplete membership records would make it difficult to determine long-term service beyond the past 20 years. The suggestion was made to offer a travel award of perhaps \$200 to the institution or department with the highest representation at an annual meeting. President Rhoton expressed his appreciation for the work done by members Sliger and Kesler in preparing the report.

## OLD BUSINESS

Tennessee Science Teachers Association (TSTA) officers, President Ruth Woodall and Treasurer Barry Ferris, were in attendance to discuss the feasibility of a joint TAS-TSTA meeting fall 2003 in Nashville. Board members of both organizations recognized the benefits of a joint meeting. TSTA President Woodall discussed logistical concerns related to scheduling and space. The meeting would occur over a three-day period. Planners from TAS and TSTA would attempt to provide speakers and workshops of interest to members of both organizations. President Rhoton appointed the following TAS Executive Committee members to serve as the initial committee to meet with TSTA officers to determine the feasibility of a joint meeting: President-elect Karen Kendall-Fite, Treasurer John Harris, Nominating Committee Chair Steve Murphree, and Education Committee Chair Cindi Smith-Walters. A decision to have or not to have the joint meeting should be made by mid-summer following meetings with TSTA representatives. The committee will report details at the November Executive Committee meeting.

Meeting sites for annual meetings 2003 and 2004 remain unresolved until the decision is made regarding a joint meeting with TSTA. Columbia State Community College would host the

TAS annual meeting either 2003 or 2004. A meeting site for 2005 has been confirmed with the University of Tennessee at Martin.

New instructions for abstract submissions will be worked out by Managing Editor Gore Ervin, along with Meeting Coordinator Mike Redding and new web master Jim Howard (MTSU, Department of Chemistry).

A new Director of the Collegiate Division will be needed upon the retirement of long-time director Richard Raridon. A motion by Richard Raridon to appoint the current coordinator of the Middle Tennessee Collegiate Division, Fred Matthews, as Director of the Collegiate Division, beginning 2003, was approved by vote of the Executive Committee.

Low participation at the Eastern Collegiate Division meeting in recent years prompted discussion of future meeting sites for the annual meeting. Director Raridon recommended the Knoxville area as a preferred site because of the number of schools in the area. Pelliissippi State Technical and Community College is hosting the event this year.

## NEW BUSINESS

President Rhoton provided copies of two resolutions proposed by the American Association for the Advancement of Science (AAAS) for consideration by Executive Committee members. One relates to freedom of speech and free inquiry; the other is a statement regarding the directions and activities at the Smithsonian Institution. Executive Committee members asked for time to review the resolutions before voting. No action was taken at this time.

Nominating Committee Chair Steve Murphree presented the nomination of Dr. Gary Wulfsberg, Professor of Chemistry, Middle Tennessee State University, for the Distinguished University Scientist Award. Curriculum vitae and letters of support had been submitted to the Nominating Committee in March 2002. A motion to approve Dr. Wulfsberg for the award passed.

President Rhoton presented data collected on the numbers of student presenters at recent TAS annual meetings. He concluded that the data are not meaningful since it is not always possible to identify undergraduate students. President Rhoton recommended that the title submission form be changed to distinguish undergraduate from graduate student presenters so that the information could be tracked for a few years.

Executive Committee members Karen Kendall-Fite and Andrew Slinger submitted "A RESOLUTION REGARDING THE USE OF STUDENT TECHNOLOGY FEE MONEY FOR THE PURCHASE OF LABORATORY EQUIPMENT USED IN THE TEACHING OF SCIENCE IN TENNESSEE COLLEGES AND UNIVERSITIES" from the Tennessee Association of Science Department Chairs for consideration by the TAS Executive Committee:

"Whereas, money is collected from college students by special assessments, variously called Technology Fees, Academic Enrichment Fees, or other names, for the purpose of providing costly technology equipment for student use; and

"Whereas, the use of student technology fee money for the purchase of equipment for student use in teaching laboratories is a proper use of technology fee money; and

"Whereas, there is insufficient state funding to support the purchase of equipment used primarily for teaching science laboratories; and

"Whereas, there is a critical need for upgrading existing

equipment and the purchase of new equipment for use in college science laboratories; and

"Whereas, learning science in the laboratory is severely hampered by a lack of modern laboratory equipment; and

"Whereas, a high percentage of the students paying technology fees are enrolled in undergraduate or graduate science courses which have a formal teaching laboratory component; and

"Whereas, most modern science laboratory equipment includes computer chips, and electronic interfaces to computers or computer hardware;

"Be it resolved, therefore, that the Tennessee Association of Science Department Chairs and the Tennessee Academy of Science strongly urge Colleges and Universities to recognize the purchase of science laboratory equipment, used in the teaching of science, to be an appropriate and legitimate use of technology fee money collected from students enrolled in Tennessee colleges and universities."

Following a brief discussion, a motion to support the resolution passed.

President Rhoton adjourned the spring 2002 meeting of the Tennessee Academy of Science Executive Committee at 10:00 PM CST.

## TENNESSEE ACADEMY OF SCIENCE EXECUTIVE COMMITTEE MEETING 14 November 2002

The Executive Committee of the Tennessee Academy of Science (TAS) was called to order by President Jack Rhoton at 6:55 PM EST in the East Tennessee Room of the Culp University Center on the campus of East Tennessee State University, Johnson City, Tennessee, 14 November 2002. Attendees were Martin V. Stewart, Past President; John W. Harris, Treasurer; Sarah H. Swain, Secretary; M. Gore Ervin, Managing Editor; Michael Redding, Meeting Coordinator; David Kesler, Director of Electronic Communications; Richard Raridon, Director of Collegiate Division; Michael Daley, Director of Visiting Scientist Program; Stephen M. Wright, Member-at-large; Teresa Fulcher, Publicity Committee Chairperson; Eugene Kline, Audit Committee Chairperson; David J. Wilson, Education Committee representative; James Howard, Director of Electronic Communications; Steven Murphree, Nominating Committee member; Terry Lashley, Tennessee Science Teachers Association (TSTA) representative.

Minutes of the April 2002 Executive Committee meeting were sent to committee members by Secretary Swain prior to today's meeting. A motion to approve the minutes passed.

## REPORTS FROM OFFICERS AND DIRECTORS

President Jack Rhoton introduced Terry Lashley, TSTA representative who discussed plans for a joint TAS-TSTA meeting to be held 2003. TAS and TSTA representatives had met during the summer 2002 to discuss meeting details. Lashley summarized the results of the summer meeting and reported enthusiastic support for the joint meeting from TSTA officers and members. The 2003 joint meeting will be held at the Cool Springs Marriott Hotel in Franklin, Tennessee.

A motion designating TAS Meeting Coordinator Michael Redding and President-elect Karen Kendall-Fite as the TAS Local Arrangements Committee, along with other TAS members they appoint, was approved. Terry Lashley will notify the TAS

President of the names and addresses of TSTA members in charge of specific planning duties. A January 2003 organizational meeting is planned.

*President-elect and Program Chairperson*—Karen Kendall-Fite submitted a written report. Dr. Steven Wallace, plenary speaker, will describe opportunities for research at the East Tennessee Gray Fossil Site. Stephanie Stocks and Jeanie Hilten will provide information about the Great Smokey Mountain All Taxa Biodiversity Inventory.

The call for papers was prepared in July by Meeting Coordinator Michael Redding. He organized section chairs, received abstracts, and organized judges for student oral and poster presentations. Publicity Chair Teresa Fulcher sent press releases to major state newspapers announcing the TAS annual meeting.

President-elect Kendall-Fite's report also detailed the results of the July 24, 2002 meeting in Cookeville with TSTA representatives Terry Lashley, Ruth Woodall, and Colleen Wallace. TAS subcommittee members attending were John Harris, Steve Murphree, Cindi Smith-Walters, and Karen Kendall-Fite. Other TAS subcommittee members are David J. Wilson and Michael Redding. Several members of the TAS subcommittee will attend the November 21–23, 2002 TSTA Convention at the Cool Springs Marriott Hotel in Franklin, Tennessee.

President Rhoton moved to grant the TAS joint meeting subcommittee the flexibility to negotiate fees as needed. The motion passed.

*Meeting Coordinator*—Michael Redding reported 76 oral presentations and 25 poster presentations have been scheduled for the annual meeting for a total of 101 presentations. The one oral presentation submitted for the Physics Section was relevant to Microbiology; therefore, with the consent of the presenter and the Section Chairs, the Physics Section was cancelled and the one Physics presentation was included in the Microbiology Section. Meeting Coordinator Redding prepared and mailed the program to the membership prior to the meeting.

*Treasurer*—John W. Harris presented the following report:

CASH BALANCE—JULY 1, 2002	25,415.58
RECEIPTS	
Membership Fees	3,740.00
Institutional Dues	2,000.00
Library Subscriptions	1,530.00
Interest Earned, FirstStar Bank	48.25
Dividends Earned, PaineWebber Money Fund	108.13
Contributions	90.00
Annual Meeting Registration and Meal Fees	1,365.00
Page Charges	540.00
<i>Journal</i>	60.00
TOTAL RECEIPTS	9,481.38
TOTAL CASH AVAILABLE	34,896.96
DISBURSEMENTS	
<i>Journal</i>	3,757.01
Tennessee Junior Academy of Science	1,595.40
Treasurer's Expenses	830.48
Travel	266.32
Dues/Fees	80.50
Science Fairs	1,000.00
Annual Meeting Expenses	2,036.11
TOTAL DISBURSEMENTS	9,565.82

CASH BALANCE—November 11, 2002	25,331.14
Receipts	9,481.38
Disbursements	9,565.82
Cash Decrease	84.44

#### BREAKDOWN OF HOLDINGS

US Postal Service, Cookeville, TN	208.12
US Postal Service, Lawrence, KS	604.74
TFU Account	501.48
Checking Account, FirstStar Bank	3,972.27
Savings Account, FirstStar Bank	4,732.07
Money Market Fund, PaineWebber	15,312.46
TAS HOLDINGS—November 11, 2002	25,331.14
TJAS TRUST FUND (Vanguard Star Fund)	
(9240.619 shares owned as of 09/30/02)	
Account Value as of 03/31/02	153,579.10
Disbursements (Dividend Distributions)	
06/21/02	1,940.53
Account Value as of 06/30/02	142,120.70
Account Value as of 09/30/02	128,721.80
LIFE MEMBERS TRUST FUND (PaineWebber)	
Value of Account as of 09/30/02	15,000.00
TOTAL VALUE OF HOLDINGS—	
November 11, 2002	169,053.00

Treasurer Harris noted one accounting change. Expenses for mailing the Call for Papers previously charged to the Secretary are now charged to the annual meeting. A motion to accept the report passed.

Treasurer Harris indicated to the Executive Committee that he would like to pass the duties of TAS Treasurer to another TAS member within the next two years. He would serve during 2003, and work with the incoming treasurer during 2004 as a transition year. President Rhoton joined the other members of the Executive Committee in expressing appreciation to Treasurer Harris for his many years of dedicated service.

*Managing Editor*—M. Gore Ervin presented the following report:

“Three *Journal* issues have been published (77:1, 77:2, and 77:3) so far during 2002, and these three issues contain a total of six manuscripts. The final (October) 2002 issue has not gone to press due to a lack of accepted manuscripts. However, two recently revised and accepted manuscripts will allow the October 2002 issue to be published in mid December with at least 3 or more manuscripts. This issue also will contain two book reviews.

“There have been a total of twelve manuscripts submitted thus far in 2002. Two have been published (one each in 77:2 and 77:3), three have been accepted and will appear in 77:4, two have been returned to the authors for revision, two have been rejected, and three are in review.

“Although total manuscript submissions have declined over the past few years, the twelve submissions received this year represent a marked increase over the past three years (2001, 5; 2000, 8; 1999, 9). Perhaps even more encouraging, the manuscripts submitted represent a broad discipline base including: Botany (2), Cell and Molecular Biology, Chemistry, Geology and Geography (2), Microbiology (2), and Physics and Astronomy, and Zoology (3)”.

*Collegiate Division*—Director Richard Raridon discussed the activities of the Collegiate Division reported at the April Ex-



ecutive Committee meeting. Dr. Fred Matthews, Austin Peay State University, has agreed to serve as Director of the Collegiate Division beginning 2003. It will be the duty of Director Matthews to appoint a sponsor for the East Region of the Collegiate Division. Teresa Fulcher volunteered to help organize the meeting for 2003.

President Rhoton expressed appreciation to Director Raridon for many years of service to the TAS Collegiate Division and recalled the Distinguished Service Award presented to Director Raridon at the 2001 annual meeting. Applause from the Executive Committee echoed President Rhoton's sentiments of praise and appreciation.

*Junior Academy of Science*—Director Jack Rhoton discussed the following report:

"The 2002 annual meeting of the Tennessee Junior Academy of Science (TJAS) was held on Friday, April 19, 2002, at Pearl Cohn High School in Nashville, Tennessee. Sixty-six students, from throughout the state, participated in TJAS research. Prior to the April 19 meeting, a panel of readers selected twenty-six student papers for presentations at the annual meeting. The panel of judges during the annual meeting selected two top presenters. They are: Ashley Vollmar, University School, Johnson City, and Kristin Carmichael, Jefferson County High School, Dandridge, Tennessee. The title of Ms. Vollmar's paper is "*Salamander Survey of Selected Sections of the Appalachian Trail of Southeastern Georgia and Western North Carolina*." Ms. Carmichael's paper is entitled, "*Zebra Fish Development*." Both papers were published in the *Handbook and Proceedings of the Tennessee Junior Academy of Science*, along with seven other papers of the top nine winners, all selected by the panel of judges. Also, an abstract of each presenter at the annual meeting was printed in the *Handbook*. A copy of the *Handbook* was sent to all high school science departments as identified in the Tennessee State Department of Education's Directory of Public Schools, Approved Non-Public and Special State Schools.

"It is customary each year for the TJAS to recognize three outstanding science teachers, one from each region of the three grand divisions of the state. During the spring 2002 TJAS meeting, a framed certificate and a small honorarium (\$100) was presented to the following recipients: Barbara Wiseman (AP Biology and Physical Science), Dobyns-Bennett High School, Kingsport; Constance Brown (Chemistry and Physics) McEwen High School, McEwen; and Victoria Johnson (Honors Biology and Chemistry) Germantown High School, Germantown. These outstanding secondary science teacher awards recognize teachers for their outstanding contribution to science teaching and for stimulating and inspiring students to an active interest in science.

"Kathryn R. Gemmer has been named the recipient of the 2002 Tennessee Academy of Science Distinguished Science Teacher Award. Gemmer, who teaches at the University School in Johnson City, will receive the award on November 15, 2002, during the Annual Meeting of the Tennessee Academy of Science (East Tennessee State University, Johnson City). Ms. Gemmer teaches high school AP Biology and Physics at the University School on the campus of East Tennessee State University. Begun in 1997, the awards program is designed to recognize individuals who demonstrate excellence in science teaching. This award is given annually to one Tennessee science teacher who has made significant contributions to the teaching of science. In addition to the recognition, Gemmer will receive from TAS a \$500 cash award, a plaque, and a certificate. (A press release of Ms. Gem-

mer's award has been prepared and submitted to local newspapers.)

"The criteria for the award are based on the candidate's contributions to the teaching profession, education record, involvement in professional organizations, special awards or special recognition, and letters of support. The recipients of the TAS Distinguished Science Teacher Award include: Alan Redmond (1997) John Sevier Middle School, Kingsport; Linda Phelp (1998) Camden Central High School, Camden; Jane Whitaker (1999) Lenior City High School, Lenior; Pat Carpenter (2000) McDonald School, Mohawk; Garry Barrigar (2001) Elizabethton High School, Elizabethton; and Kathryn R. Gemmer (2002) University School, Johnson City.

*Electronic Communications*—David Kesler discussed plans to give the TAS web site a new look and a new domain name, thanks to the work of Dr. James Howard (Middle Tennessee State University). The old TAS URL will bounce visitors to the new site when it comes on line. Director Kesler expressed hope that the Networks Scientist Program will move with the web site to a new server. Anyone interested in helping to administer the Networks Scientist Program should contact James Howard ([jhoward@mtsu.edu](mailto:jhoward@mtsu.edu)). President Rhoton expressed appreciation to Director Kesler for establishing and maintaining the web site for the Academy.

*Visiting Scientist Program*—Michael Daley discussed the following report:

"Visiting Scientist Program (VSP), Memphis Region. Recently I made contact with Margaret Smith, a high school teacher who works in The Memphis Urban Systematic Initiative in Math and Science Program. The plan that evolved from our discussion is that each year the regional TAS Visiting Scientist Program should develop a list of scientists that matches the Modular curriculum. This semester the focus is Earth Science and Space, next winter semester the emphasis is on Life Sciences at the Molecular and Cellular Physiology Level, and the spring semester will have a focus on Organisms and Environmental Biology.

"To advertise the TAS VSP I hope to participate in the Unity in Science program on Saturday, February 15, 2003. In the meantime, I am working on trying to get one or two of our members out to schools this semester."

Director Daley offered the following items for consideration: "1) For the joint meeting we might develop a web site and brochure of available resources for the teachers, and 2) The director of the Memphis Science fair for the past several years has been Brother Ryan, a TAS member. I think his work in this area may merit a special recognition award."

President Rhoton praised the idea to match our VSP service to the school curriculum. The Executive Committee agreed that Brother Ryan, Christian Brothers University, would be featured in the *Journal* for his service with the west regional science fairs. Director Daley will write the feature article.

*State Department of Education*—Linda Jordan, State Science Consultant and TAS Executive Committee member, submitted written report. The following are excerpts from that report:

"I would like to express my gratitude to all of the TAS members who helped in the Content Verification project for the state. As I think about the state's required compliance with the "No Child Left Behind" legislation, I know it is imperative that we all begin working toward establishing more numerous and stronger relationships that will benefit all of our students. Students (K-12) are everyone's responsibility; therefore we must start forging meaningful, mutual partnerships that will result in

increased student learning, increased student achievement, and successful movement into science fields where these professionals are already in short supply. K-12 is always in need of expert advice, experience, and assistance in many areas your organization can provide through its members (in-service and mentoring work that many TAS members currently do in K-12). Anyone who is interested in discussing how TAS, the state, and K-12 might become more involved is welcome to email me with those thoughts ([Linda.K.Jordan@state.tn.us](mailto:Linda.K.Jordan@state.tn.us)).

"I am hopeful that all of the logistics will be worked out so that the joint conference with TSTA will proceed as planned next year. This will be a wonderful opportunity for us to begin the process of forming alliances for the purpose of collaboration on a myriad of projects.

"I would also like to discuss ways that we could make the Visiting Scientists Program more visible and accessible. This is a valuable service that all science teachers should know about and use."

President Rhoton noted that school systems need help with content training and that this might be a good TAS/TSTA joint meeting topic. Education Committee Chair, Cindi Smith-Walters, is a source of ideas for TAS involvement with school systems.

## REPORTS FROM COMMITTEES

*Audit Committee*—Chairperson Eugene Kline discussed the following report:

"The Audit Committee consisting of Past Presidents Dr. David Yarborough, Dr. Robert Martin, and myself had an audit made as required by the Academy for the year ending 2001 by Mr. James McKinnie, MBA, Cookeville. He examined the receipts and disbursements records and found everything in order and the accounting system well maintained. The Audit Committee recommends approval of the financial report based on this audit. The Committee also wishes to commend Dr. John Harris, Treasurer, for all his effort and time in doing a meticulous job at keeping good financial records for the Academy."

*Education Committee*—Cindi Smith-Walters submitted a written report that is summarized below:

Committee Chairperson Smith-Walters discussed the possibility of a joint web site for TAS/TSTA with State Science Consultant Linda Jordan. TAS members worked with State Department of Education Textbook Services (Larry Gregory) to evaluate textbooks for adoption. David Wilson will provide details in a separate report. Chairperson Smith-Walters published an article, "TAS/TSTA: a Partnership for Success," in the spring 2002 TSTA newsletter. During the summer 2002 she met with several TAS and TSTA representatives to discuss details for a joint meeting. The Chairperson continued work with the State Department of Education (Linda Jordan) to develop a CD "sampler of activities", limited content information, and cross-references to K-8 Science Framework. The CD is expected to be available for distribution at the November 2002 TSTA conference, and posted on the State Department of Education website: [www.state.tn.us/education/ci/cistandards2001/sci/ciscience.htm](http://www.state.tn.us/education/ci/cistandards2001/sci/ciscience.htm). Details about the K-12 Collaboration Project were provided in a flier.

In the report Chairperson Smith-Walters asked the Executive Committee to consider the following: linking to TSTA website; hire a web master for the TAS website and update as necessary; solicit science fair judges via the TAS membership form; write a regular column about TAS in the TSTA newsletter.

In the discussion following the report Treasurer John Harris

agreed to provide an item on the TAS membership form that would allow members to volunteer to serve as science fair judges. A database of science fair judges will be developed from the information acquired. President Rhoton will ask Chairperson Smith-Walters to continue to supply a regular column to the TSTA newsletter during 2003 as part of the promotion for the TAS/TSTA joint meeting in November 2003.

*Fellows Committee*—Chairperson Charles R. McGhee submitted the following report:

"The Fellows Committee received two nominations for Fellow of the Academy in 2002. Those nominated are: 1) Dr. Charles J. Biggers, Professor, University of Memphis. Dr. Biggers has served as the Western Regional Sponsor for the TAS Collegiate Division of the Tennessee Academy of Science for 25 years. His long and dedicated service to students and the Collegiate Division is outstanding. His efforts have assured the continued success of the Collegiate Division. Dr. Richard Raridon has informed the committee that Dr. Biggers is to be honored by the Academy with the Distinguished Service Award; and 2) Dr. John Zamora, Professor, Middle Tennessee State University. Dr. Zamora is a Life Member of the Tennessee Academy of Science and has attended the annual meeting each year since 1989. He has served as research advisor for 19 student papers presented at academy meetings since 1990. He has papers published in the TAS journal. Dr. Zamora served as chairman for the Medical Science section in 1994 and 1995, the Microbiology section in 1999, and the Cell and Molecular Biology section in 2001. He has served as judge for the Medical, Microbiology, and Cell and Molecular Biology sections, and has reviewed a number of papers for the *Journal*. His many efforts on behalf of students and the TAS are commendable.

"The members of the Fellows Committee, consisting of Brother Kevin Ryan, Dr. Gladius Lewis, and Dr. Charles R. McGhee, have reviewed the candidates and unanimously recommend that they be named Fellows of the Tennessee Academy of Science during the annual meeting at East Tennessee State University."

A motion to accept the recommendation of the Fellows Committee was approved.

*Financial Oversight Committee*—Chairperson Andrew Sliker submitted the following report:

"Along with everyone else, we have lost money on our investments during the past year. Dr. John Harris has recommended that we "stay the course" with regard to the TJS Trust Fund with Vantage. This is what the Academy agreed to do when we accepted the funds from the International Science Fair fund. As chair of the finance committee I agree with Dr. Harris and suggest that we continue with Vantage in handling this fund.

"Our other reserve funds are now invested in a money market account. After consulting with Dr. Harris it is my recommendation that the treasurer continue to hold these monies in a money market account until we see improvement in the overall economy. The current rates on T-bills and CD's are so low that it appears unwise to "lock in" money in these types of investments at the present time. The treasurer can easily transfer funds from the money market account into other investment types when the economy improves.

"Dr. Harris and I are open to consider any proposal that would provide a better yield while minimizing risk. We both feel that the strategy outlined above is the best course to take for the next year or two."

*Industry and Government Committee*—David J. Wilson,

Chairperson, discussed concerns related to the lack of appropriate contacts and resources to involve state industries in TAS activities and interests. Also, due to plans to move out of state, Chairperson Wilson would like for another TAS member to take over the duties of chair of this committee during 2003. President Rhoton thanked Chairperson Wilson for his service and stated that he and Secretary Swain would try to identify a TAS member as the new chair. President Rhoton suggested that in the future the institution hosting the annual meeting could recognize a local industry with the TAS Industry Award.

*Long-range Strategic Planning Committee*—George Murphy, Chairperson, submitted the following report:

“In 1996, the TAS Executive Committee formed the Long-range Strategic Planning Committee, which was charged with making recommendations for strengthening the operations of the Academy. The resultant committee report was presented to the Executive Committee in spring, 1997. Since then, most of the recommendations have been enacted and a number of standing committees formed, including the Long Range Strategic Planning Committee.

“Earlier this fall, we sent out a request to many of the TAS present and past leaders, asking for issues that they thought should be addressed. One issue that arose was rotation of committee memberships. The Academy must be proactive in preparing “new blood” for leadership positions, and committee membership is one way to do this. One of the recommendations from the 1998 report of our committee addressed this issue and is as follows:

“In response to President Kline’s query to the Long Range Strategic Planning Committee, the original recommendation was that the committee should consist of “the president-elect, current and former presidents, and others who have some ‘institutional memory’ of the organization” (for instance some current or former executive committee members), as well as new members of the Academy, and should be charged with help to insure that the Academy is responsive to changing needs of members and opportunities for service. The committee should begin with this current effort, make modifications as deemed necessary, monitor achievement of established goals, and make regular reports to the executive committee.

“We recommend that the committee have six to nine members (certainly no larger, but nine might assure a better representation), the president-elect, current president, and past president would make three, and three to six more with staggered terms of three years each so that there would always be a majority with experience on the committee. All would thus serve three years on the committee (obviously reappointments could occur). Each president would appoint one or two members (depending on whether the committee size was six or nine).

“We feel that the recommendation for membership composition and rotation of the Long Range Strategic Planning Committee is still valid and should be considered for implementation. Likewise, other committee memberships should rotate on a periodic, prescribed basis. Committee appointments are sometimes a difficult task for a new TAS President, but perhaps with the assistance of the Executive Committee and Section Chairs, committee appointments that include wider participation of members could be realized.

“Other suggestions are as follows, and not in any priority:

“It might be a benefit in having regional directors for the Visiting Scientist Program and these directors would also be responsible for Science Fair awards in their geographic area. Such

an arrangement might strengthen relations between collegiate and K-12 groups.

“The awards committee(s) should have some members from the region/host institution where the annual meeting is held. This would be part of an effort to assure that individuals within a region (but not particularly well known across the state) receive proper consideration.

“We study new ways to attract new members by establishing a membership coordinator for each of the three grand divisions of the state. Each coordinator would be responsible for establishing a representative on each college campus (or perhaps major industry) in their area for recruitment purposes. Their efforts would be reported to the Executive Committee, and perhaps some recognition of individual successes could be implemented.

“One of our earlier reports suggested regular articles in the *Journal* or perhaps a “series” on a particular theme or region. One suggestion was to document the history and biology of Reelfoot Lake through an article per year for the next decade. Perhaps something similar could be done for Land Between the Lakes through the Austin Peay State University Center for Field Biology, Oak Ridge National Laboratories, medical schools, etc. The idea would be to document work done, stimulate interest in a particular area, and hopefully increase manuscript submissions and readership.”

A motion was made and approved to revise the structure of the Long-range Strategic Planning Committee as recommended. To begin membership rotation in 2003 the Past President would appoint two persons for 3-year terms, the current President would appoint two persons for 2-year terms, and the President-elect would appoint two persons for 1-year terms. Thereafter, the current President would appoint two persons for 3-year terms. The plan would be in effect beginning January 1, 2003.

President Rhoton expressed appreciation to George Murphy and other members of the Long-range Strategic Planning Committee for their dedicated service for the past six years. The incoming 2003 TAS President will consider other recommendations proposed in the committee report.

*Membership Committee*—(no chair). The role of this committee was discussed in light of the Long-range Strategic Planning Committee recommendation to establish regional membership coordinators. President Rhoton will contact the two remaining Membership Committee members in search of a committee chairperson. Eugene Kline volunteered to serve as a committee member.

*Necrology Committee*—Alexander Wells, Chairperson. The following were identified by Treasurer Harris as deceased during 2002: George W. Edwards, Lambuth University, Jackson; Jack Lorenz, University of the South, Sewanee; Charles S. Shoup, Oak Ridge National Laboratory, Oak Ridge. A moment of silence was observed by the Executive Committee in memory of these TAS members.

*Nominating Committee*—Past President Martin V. Stewart, Chairperson, presented the following slate of officers for approval by the Executive Committee: Dr. J. Michael Redding, President-elect; Ms. Sarah H. Swain, Secretary; Dr. John W. Harris, Treasurer. In addition to Chairperson Stewart, other members of the 2002 Nominating Committee are Dr. David J. Wilson and Dr. C. Steven Murphree. A motion to accept the recommended slate passed.

*Publicity Committee*—Teresa Fulcher, Chairperson, discussed the following report:

“In May 2002 names and project titles of winners of the

TAS award from the regional science fairs were compiled and submitted to Dr. Gore Ervin for inclusion in the *Journal*. In October 2002 press releases were sent to the 29 daily newspapers in Tennessee announcing the 112th annual meeting to be held at East Tennessee State University. In November email reminders announcing the meeting were sent to Geology faculty from colleges and universities across the state. In preparation for the 112th annual meeting, the Publicity Committee has obtained a digital camera for documenting presentations and awards. Certificate papers and seals have been ordered in anticipation of creating awards for the student oral and poster competitions."

Chairperson Fulcher reported that Geology faculty in 15 colleges and universities were notified of the keynote address on the Gray Fossil Site. Kim Sadler served as a committee member. Chairperson Fulcher expressed a desire to rotate off the committee in the near future. She has served for the past three years. David Wilson suggested that Chairperson Fulcher write up procedures and protocols for the benefit of the next chairperson, and that these be included in the TAS Operations Manual.

*Research Committee*—(no chair). Ad hoc committee members M. Gore Ervin and Martin V. Stewart, charged to describe the duties of the committee and to locate a chairperson, will report at the Executive Committee's April 2003 meeting.

*Resolutions Committee*—Sallie Noel, Chairperson. A resolution of appreciation for the ETSU Local Arrangements Committee was not available at the time of the Executive Committee meeting. A motion to approve an existing resolution, to be revised as appropriate to express appreciation to the Local Arrangements Committee at ETSU, passed. Chairperson Sallie Noel later submitted the following resolution:

"Whereas, the Tennessee Academy of Science, which is enjoying the most pleasant, profitable, and well organized series of meetings at East Tennessee State University, and

"Whereas, the success of these meetings has resulted mainly from the efforts of the officers of the respective sections; the Local Arrangements Committee composed of Dr. Martin Barrett, Dr. Gary Henson, Dr. Diane Nelson, Dr. Lee Pike, Dr. Fred Hosler, Dr. Jeff Knisley, Dr. Jack Rhoton, Dr. Phillip Scheurman, Dr. Steven Wallace, and Dr. Jeff Wardeska; from the leadership of President-Elect, Ms. Karen Kendell-Fite, President Dr. Jack Rhoton, and Past-President Dr. Martin V. Stewart; from the recognition given the meetings by the press, television, and radio stations; and from the generous hospitality of the host institution, East Tennessee State University, and its President, Dr. Paul E. Stanton Jr.;

"Be it resolved, therefore, that the Tennessee Academy of Science expresses its sincere appreciation to these and all others who contributed to the success of the meetings."

## OLD BUSINESS

President Rhoton discussed plans for the TAS/TSTA joint meeting for 2003 to be held at Cool Springs Marriott Hotel, Franklin, Tennessee. Terry Lashley, TSTA representative, discussed progress in planning with TAS officials (reported earlier in these minutes).

David J. Wilson, Education Committee representative, presented a detailed report on the TAS Science Textbook Verification Project. The following are recommendations in the report:

1. It is urgently recommended that, if asked, the TAS continue to provide its services to the Tennessee State Department of

Education for the verification review of school science texts. It was apparent to me at the meeting that this first year's work is having an impact; we are not being ignored by either the Textbook Commission or the publishers. At the Textbook Commission meeting Mr. Gregory was outspoken in his gratitude to the Academy and to the people at Oak Ridge National Laboratories who had provided verification reviews. After review and necessary editing by the Department of Education, these verification reviews will almost certainly be placed on a web site so that teachers can use them. We will be kept informed about this.

In my opinion, the TAS, in cooperation with Mr. Gregory and the Tennessee Department of Education, is in an excellent position to help bring about much-needed improvements in the country's school science textbooks. As has been brought out on several web sites, many of these books are badly flawed because of the very large number of errors of scientific fact they contain. For whatever reason, the verification reviews being done by the publishers are generally not working satisfactorily.

2. If the TAS continues the verification review program, it is suggested that the TAS prepare a short document describing the protocol to be followed in preparing a verification review and clearly pointing out the reasons and importance of each aspect of the protocol. It is also suggested that Larry Gregory be asked to review and approve this document, a copy of which will be given to each reviewer. This document is to provide reinforcement, explanation, and endorsement to the instructions given to the reviewers by the Tennessee Department of Education. The document would also emphasize the point that a superficial review is worse than no review in terms of fairness to the publishers.
3. I understand that the Textbook Commission will be setting up a review panel to go over all verification reviews in the future to make sure that each has been prepared according to the guidelines given. I suggest that the TAS set up a prescreening panel to ensure that, to the best of our ability, the verification reviews provided by TAS members comply with the guidelines. Prescreening would enable us to edit or discard up front any review not in compliance with the guidelines or obviously superficial, and to make arrangements to get another review if necessary. The guidelines are simple and straightforward, so checking a review should be easy and quick. This checking will not require reading the textbook. It is not expected that the prescreening panel will determine whether or not the reviewer has identified each and every error in the book—only that he/she has done a reasonably conscientious job and has complied with the guidelines.
4. It is recommended that the Executive Committee inform Mr. Gregory of the difficulties that arise (both for the Department of Education and for the TAS reviewers) when the time line for verification review is short. It is now very clear that it is difficult to impossible for either party to do a good job on this with insufficient time. We need to prepare careful, thorough reviews, and the Department needs to examine them and distribute the edited reviews to all stakeholders in a timely fashion.
5. The TAS may wish to put on focus group meetings at its annual meetings for people who are interested in doing verification reviews. Here the most salient points could be covered and a few examples of good and poor reviewing examined. I should imagine that this could be done in an hour.

6. This is not a recommendation, but more in the way of a comment. I have had an opportunity to look at much of the critical material on the Internet dealing with science (and other) K-12 textbooks. Much of this material is flawed for the following reasons:

- A. Many of the reviews deal with generalities and opinions, and rarely get down to the essential specifics needed by teachers and by publishers (like lists of errata).
- B. Many include a great deal of pejorative and malicious editorializing that often raises doubts about the judgment and maturity of the reviewer.
- C. Many have their own agendas that may be quite different from eliminating errors of fact from the textbooks.

If the TAS can cooperate with the Tennessee Department of Education to produce science text verification reviews that are accurate, comprehensive, fair, and not cluttered with a lot of material of questionable relevance, this would be a very fine thing for science education, both in Tennessee and throughout the country."

President Rhoton reported that the Department of Education has expressed its commitment to doing all it can to see that books arrive in time for quality review. A review panel will examine all the reviews December 5-6, 2002 at MTSU. David Wilson volunteered to write a grant proposal requesting funds to handle management of reviews. President Rhoton will remind TAS members at the business meeting to volunteer to serve as reviewers.

A motion recommending that the verification process continue and that David Wilson serve as the TAS contact person with the State Department of Education was approved.

President Rhoton introduced Dr. James Howard (MTSU) who made a slide presentation on proposals for changing and updating the TAS web site. Dr. Howard detailed the need for

change, proposed possible domain names, reviewed advantages and disadvantages of various location options, and offered suggestions for changes in the appearance and format of the site. Dr. Howard acknowledged the assistance of MTSU Dean of the College of Basic and Applied Sciences, Dr. Tom Cheatham, and Rhonda Earl in determining the needs and solutions for the TAS site.

A motion to authorize Dr. James Howard to spend up to \$500 during the first year (2003) to update the TAS site was approved.

A motion that President Rhoton will appoint an ad hoc committee to work with Dr. James Howard on content for the TAS web site was approved.

A motion was made by Dr. David Kesler to accept Dr. James Howard as the new Director of Electronic Communications, beginning January 2003. The motion passed.

## NEW BUSINESS

President Rhoton announced that East Tennessee State University is now a sustaining member of TAS. He expressed appreciation for the support of (ETSU) officials in planning the TAS annual meeting for 2002.

Future meeting sites were discussed. The 2003 annual meeting will be a joint meeting with the TSTA in Franklin, Tennessee at the Cool Springs Marriott Hotel. The date will be announced later. TAS has accepted an invitation from the President of Columbia State Community College to hold its 2004 annual meeting on the Columbia State campus in Columbia, Tennessee. The TAS has accepted an invitation from the President of the University of Tennessee Martin to hold its 2005 annual meeting on the University of Tennessee campus in Martin, Tennessee.

President Rhoton adjourned the meeting of the Executive Committee of the Tennessee Academy of Science at 10:55 PM EST.