PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 2001

SARAH H. SWAIN, SECRETARY TAS

Middle Tennessee State University, Murfreesboro, Tennessee

TENNESSEE ACADEMY OF SCIENCE EXECUTIVE COMMITTEE MEETING
20 April 2001

President Martin V. Stewart called the meeting of the Executive Committee of the Tennessee Academy of Science (TAS) to order at 7:10 PM CST in the Boardroom of the Jack Massey Business Building on the campus of Belmont University, Nash-ville, Tennessee, 20 April 2001. Members present were Jack Rhoton, President-elect and Director of the Junior Academy (TJAS); David J. Wilson, Past President; Sarah H. Swain, Secretary; John W. Harris, Treasurer; Richard Raridon, Director of the Collegiate Division; M. Gore Ervin, Managing Editor of the Journal of the Tennessee Academy of Science; Michael Redding, Meeting Coordinator; Teresa Fulcher, Publicity Chairperson; Ted Lundy, Industry and Government Chairperson; Cindi Smith-Walters, Education Chairperson; George Murphy, Long Range Strategic Planning Chairperson; Karen Kendall-Fite, Member-at-large; and Stephen M. Wright, Member-at-large.

Minutes of the November 2000 Executive Committee meeting had been sent to committee members by Secretary Swain. A motion to approve the minutes passed. Secretary Swain distributed rosters of the 2001 Executive Committee and the 2001 TAS Standing Committees to attendees.

REPORTS FROM OFFICERS AND DIRECTORS

Meeting Coordinator—Michael Redding provided a summary of the planning session for the 2001 joint meeting with the Kentucky Academy of Science (KAS). On 12 December 2000 representatives of TAS and KAS met at Western Kentucky University to discuss and finalize meeting details. Representing TAS were President David Wilson, 2000 President-elect Martin Stewart, 2001 President-elect Jack Rhoton, Treasurer John Harris, and Meeting Coordinator Michael Redding. Counterparts from KAS were 2000 President Blaine Ferrell, 2001 President Ron Rosen, President-elect Jerry Warner, and Meeting Coordinator Bob Creek.

The productive meeting resulted in the following decisions: 1. The meeting will be held November 8–10, 2001. 2. The Garden Plaza Hotel in Murfreesboro, Tennessee will be the off-campus meeting site for special events. Reservations have been made for a large block of guest rooms, for meeting rooms, and for social events on Thursday and Friday evenings. 3. Each academy will be responsible for soliciting and collecting pre-registration information and fees from its membership, and likewise for on-site meeting registration. Financial liability for facility rental and other contracted services, and distribution of any profits, will be apportioned to each academy according to the number of members registered. Expenses and income will be itemized according to the format used successfully after the previous joint meeting. 4. Paper and poster solicitation will be separate responsibilities for each academy, and Bob Creek and Jack Rhoton will compile the collected submissions into a unified program. They will also consult on all other program decisions, including the plenary session. 5. Eighteen concurrent sessions for technical papers are expected, depending on the number of submissions and room availability. 6. Programs will be printed at one location and then distributed by each academy. 7. Registration will commence Thursday afternoon and continue throughout the meeting. Thursday evening plans include a symposium followed by a mixer with cash bar at the Garden Plaza Hotel. Friday technical sessions will meet on the campus of Middle Tennessee State University (MTSU). The Friday evening banquet at the Garden Plaza Hotel will include award presentations by both academies and a banquet speaker. Technical sessions will continue at MTSU on Saturday.

President-elect Jack Rhoton described his progress in contacting speakers for the plenary session and banquet. Dr. Jim Lightbourne of the National Science Foundation has been asked to speak on issues in undergraduate science education. Dr. Bill Bass, University of Tennessee forensic anthropologist and noted speaker has been invited to speak at the banquet. President-elect Rhoton will notify the Executive Committee when speakers are confirmed. Title and abstract submission format also was discussed. President-elect Rhoton will prepare the forms to be sent to the membership with the Call for Papers in July.

President Stewart presented a preliminary program schedule for discussion. President Stewart encouraged all members of the Executive Committee to confer with other members of the planning committee before making final decisions regarding the joint meeting.

Past President David Wilson described his efforts to involve more students in science fair projects. All science chairpersons in the Nashville Metropolitan Schools were sent a list of projects with “how to” instructions. Mentors were available to assist the students with their projects. However, few students or their teachers responded. Past President Wilson expressed his concern for the decline in science fair participation and interest.

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

CASH BALANCE—JULY 1, 2000 63,894.35

RECEIPTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership Fees</td>
<td>7,220.00</td>
</tr>
<tr>
<td>Institutional Dues</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Library Subscriptions</td>
<td>1,060.00</td>
</tr>
<tr>
<td>Interest Earned, FirstStar Bank</td>
<td>184.67</td>
</tr>
</tbody>
</table>
Dividends Earned, JC Bradford Money Mkt Fund 334.25
Dividends Earned, PaineWebber Money Mkt Fund 1,021.34
Interest Earned, LM Trust Fund 431.25
Interest Earned, TJAS Trust Fund 3,131.10
Contributions 130.00
Annual Meeting Registration and Luncheon Fees 3,305.00
Page Charges 6,225.00
Visiting Scientist Program (VSP) 1,865.00
Adjustment to Checking 160.99
Journal 5.00

TOTAL RECEIPTS 30,073.60

TOTAL CASH AVAILABLE 93,967.95

DISBURSEMENTS
Journal 20,534.21
Tennessee Junior Academy of Science 12,631.53
Annual Meeting 4,417.52
Treasurer’s Expenses 813.60
Secretary’s Expenses 763.44
Travel 226.27
Science Fair/Olympiads 1,824.00
Dues/Fees 20.00
Security Deposit 100.00
Plaques and Awards 277.34
AAAS Meeting 1,707.00
Auditor’s Fee 995.00

TOTAL DISBURSEMENTS 44,309.91

CASH BALANCE—AVERAGE 49,658.04
Receipts 30,073.60
Disbursements 44,309.91
Cash Decrease -14,236.31

BREAKDOWN OF HOLDINGS
US Postal Service, Lawrence, KS 143.75
TTU Account 640.93
Checking Account, FirstStar Bank 1,858.30
Savings Account, FirstStar Bank 4,936.36
Money Market Fund, JC Bradford 42,978.70

TAS HOLDINGS—AVERAGE 49,658.04

TJAS TRUST FUND (Vanguard Star Fund)
(9,232.108 shares owned as of 03/31/01)
Account Value as of 09/30/00 15,5480.67
Deposits (Capital Gains Reinvested) 12/22/00 5,579.54
Disbursements (Dividend Distributions) 12/22/00 3,043.38
Account Value as of 12/31/00 154,029.05
Deposits (Capital Gains Reinvested) 03/23/01 7,455.85
Disbursements (Dividend Distributions) 03/23/01 87.72
Account Value as of 03/31/01 149,467.83

LIFE MEMBER TRUST FUND (PaineWebber)
Value of Notes as of 09/30/00 14,990.70
Disbursements (Interest Income) 11/15/00 431.25

Estimated Annual Income 862.00
Value of Account as of 03/31/01 15,000.00

TOTAL VALUE OF HOLDINGS—
APRIL 16, 2001 214,125.87

Treasurer Harris noted that the total value of holdings had decreased approximately $15,000 since the same time a year ago. The unusual number of Journal issues published during the year accounts for the deficit. A motion to approve Treasurer Harris’ report passed.

RECOMMENDED BUDGET FOR 2001–2002

PROJECTED INCOME (2001–2002)

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
Exhibitor’s Fees 0.00
Contributions 200.00
TJAS Trust Fund 4,000.00
Life Members Trust Fund 850.00

TOTAL 30,550.00

ACCOUNT APPROVED (2001–2002)

Secretary 750.00
Treasurer 1,000.00
Junior Academy 12,000.00
Journal 10,000.00
Annual Meeting 4,000.00
Collegiate Division 400.00
Travel 400.00
AAAS Meeting 1,500.00
Audit Fee 1,000.00
Annual Dues/Fees 150.00
Insurance/Security 100.00
Plaques/Awards 300.00
President 50.00
Website Maintenance 50.00
Publicity 400.00
Science Fairs (VSP) 2,000.00

TOTAL 34,100.00

Treasurer Harris noted that TAS has substantial holdings to support the proposed budget, even though the projected expenses exceed expected income. November 2000 meeting expenses were higher than expected. At the same time registration was low compared to other mid-state meeting sites. Treasurer Harris will alert the Executive Committee if the drain on TAS funds becomes too great. President Stewart commended Treasurer Harris for his work and thanked him for his help at two different TAS/KAS planning meetings in Murfreesboro. A motion to approve the proposed budget passed.

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

"There were eight new manuscript submissions in 2000 and two new manuscripts have been submitted thus far in 2001. Of these manuscripts, five have been accepted and published or scheduled for publication, three have been returned to the authors
for revision, and two are in review. Three manuscripts originally submitted in 1999 are in revision and awaiting return from the authors. For reference, yearly manuscript publication for the previous three years has been: 1998 (9), 1999 (13), and 2000 (8). The projected number for 2001 is 10–12.

“The fall 2000 issue (75:3–4) contains six manuscripts and the spring 2000 Collegiate Division abstracts. The January 2001 issue (76:1) contains the proceedings and abstracts from the fall 2000 meeting and one large manuscript. The April 2001 issue (76:2) contains four manuscripts and needs only a final proofing to be ready for submission. The July 2001 issue (76:3) will contain 3 manuscripts and the spring 2001 Collegiate Division abstracts. The July issue should be published on schedule.

“A significant time investment has been made into complete electronic submission of copy to the publisher (Allen Press). While electronic submission increases the initial preparation time and effort, it reduces the galley preparation time by 50–70%, improves accuracy, and reduces overall publication costs. Other activities include significant revision and clarification of the “Instructions for Authors” to improve initial manuscript compliance with the Journal format. Also, the new “Books and other media” review section appears to be of interest to the readership and will continue to develop.”

President Stewart commended Managing Editor Ervin for a job well done. Several Executive Committee members reported favorable comments on the recently added “Books” section of the Journal.

Collegiate Division—Director Richard Raridon reported that only one of the three divisions had met prior to this April meeting of the Executive Committee. He will provide a full report, as usual, at the November Executive Committee meeting.

Junior Academy—Director Jack Rhoton discussed the Tennessee Junior Academy of Science (TJAS) annual meeting held today, 20 April 2001, at Pearl Cohn High School in Nashville. Copies of the TJAS meeting program were distributed to Executive Committee members. Director Rhoton encouraged Executive Committee members to attend the meeting each year to hear research papers presented by “these impressive high school students.” He then discussed the details in the following report:

“The 2001 spring meeting of the Tennessee Junior Academy of Science (TJAS) will be held on Friday April 20, 2001, at Pearl Cohn High School in Nashville. A total of twenty-six students are invited to present their research papers. This year, fifty-three students were involved in TJAS research, from throughout the state.

“During the April meeting, a framed certificate and a small honorarium ($100) will be presented to an outstanding science teacher from each region of the three divisions of the state. The recipients of this year’s award are as follows: Jan Coley (Biology II and Research and Design), Jefferson County High School, Dandridge; Missy Bunch (Biology, Molecular Biology, and Chemistry), Martin Luther King Magnet High School, Nashville; Rita Moore (AP Biology and Honors Biology), White Station High School, Memphis. These TAS Outstanding Secondary Science Teacher Awards recognize teachers for their outstanding contribution to science education and for stimulating and inspiring students to an active interest in science.

“Four student winners from the 2000 TJAS competition recently (February 16–20, 2001) presented their research projects at the American Junior Academy of Science (AJAS) in Los Angeles, California. The AJAS showcases the work of promising future scientists who represent their state Junior Academies from across the nation. Katherine Redding (Cookeville High School); Kenneth Robertson (Dickson County High School); Laura Raymond and Caroline Dunn (Tennessee High School) represented Tennessee and the Tennessee Academy of Science, and shared their winning work in oral presentations and poster sessions during the AJAS session.”

Electronic Communications—Director David Kesler provided the following report for discussion by the Executive Committee:

“The use of the Networks Scientist Database has averaged about 42 searches per month since last April. A change in servers at Rhodes will require new software, and hopefully a streamlining of database updating. I would like to implement web-based data entry so that TAS members could enter their own information or make corrections. I also would like to link the database of the Treasurer, John Harris, to the web-based database.

“Any specific suggestions, either relative to design or content, for the TAS web site, http://tas.rhodes.edu/tas.htm, will be welcomed. It is hoped that title and abstract information will be submitted via the web for up-coming meetings.”

Visiting Scientist Program—Director Michael Daley provided the following report:

“With the help of Martin Stewart, Andy Sliger, and Teresa Fulcher the science fair component of the Visiting Scientist program has made progress. Sliger and Fulcher have, respectively, volunteered to serve as coordinators for the central western (Jackson), and central east (Knoxville) regions of our state. [A coordinator is needed for the Chattanooga area.] They join the other coordinators, Steve Murphree in the central [south] region, Jack Rhoton in the northeast region, Gene Kline in the central [north] region, and myself in the western region. Teresa made some excellent certificates and they will be presented as part of the award to each student. Also, Martin suggested that the names of the awardees be published in the Journal.

“For those who are new to the executive committee the proposed plan is as follows: local 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. This aspect of the program is not progressing. Generally classroom visits by outsiders are unlimited. Also, some teachers who might allow a visit are unaware of our program. Perhaps, we could E-mail an advertisement out to the schools before the start of the school year. Other suggestions are welcomed.

“In summary, of the activities of the Visiting Science Program, the Science Fair Awards component has made progress. The planned component to have TAS members make visits to schools has not made progress.”

Discussion following the report revealed that John Harris volunteered last year in the Cookeville area. Executive Committee member Michael Redding volunteered to serve that area next year.

REPORTS FROM COMMITTEES

Publicity Committee—Chairperson Teresa Fulcher discussed the following report:

“1. Following the November meeting of the Tennessee Academy of Science, press releases announcing the 2000 recipients of the TAS awards, including a 5" by 7" black and white photograph, were distributed as follows. For the 2000 Tennessee Industrial Scientist Award co-winners, Dr. Kenneth W. Tobin,
Oak Ridge National Laboratories and Dr. Ronald Nutt, CTI Inc. Knoxville, Tennessee, a press release and photo were submitted to the Oak Rider and the Knoxville News-Sentinel. For the 2000 Distinguished University Scientist Award winner, Dr. Thomas Hemmerly, a press release and photo were submitted to the Murfreesboro Daily News-Journal. For the 2000 Distinguished Science Teacher Award winner Ms. Pat Carpenter, a press release and photo were submitted to the Greenville Sun by Jack Rhoton and me, respectively. Copies of press releases and photos were sent to Gore Ervin to be included in the Journal.

"II. Upon receipt of the names of the winners of the 2000 best student presentation awards (oral and poster) from Dr. Martin Stewart, certificates of achievement were created for each recipient (total of 37) and mailed either directly to the student or to a college/university affiliate for distribution.

"III. The publicity chairperson has served as the liaison with TAS representatives from the six regional science and engineering fairs to provide certificates to winners and compile names of winners from those fairs. Following is the compilation of winners:


Junior Division
TAS Outstanding Biological Science Project winner—Sarah Budai, Saint Mary's School, Oak Ridge, Grade 7. Title: Straight from the Horse's Mouth: His Height. Award: $50.

Senior Division
TAS Outstanding Physical Science Project winner—Ryan Sutton, Oliver Springs High School, Oliver Springs, Grade 12. Title: The pH of Creosote and Its Effect on the Environment. Award: $100.
TAS Outstanding Biological Science Project winner—Alicia Clarke, Knoxville Catholic High School, Knoxville, Grade 12. Title: Inhibiting the Resumption of Meiosis in Bovine Oocytes: A Study of Roscovitine. Award: $100.

2. The 49th Chattanooga Regional Science and Engineering Fair, March 14–16, 2001, Chattanooga. TAS representative—Dr. Timothy J. Gaudin.

Senior Division
TAS Best Biological Science Project winner—Allison Schmidt, Tullahoma High School, Tullahoma, Grade 10. Title: An Analysis of Specific Salts on Euglena: Phase II. Award: $100.
TAS Best Physical Science Project winner—Seth Helsley, Tullahoma High School, Tullahoma, Grade 11. Title: A Synthetic Slithering Serpent. Award: $100.

3. Upper Cumberland Regional Science Fair, March 24, 2001, Cookeville. TAS representative—Dr. John Harris.
TAS Natural Sciences Award winner—Heather Hannahan, Clarkrange High School, Clarkrange, Grade 11. Title: Brassica juncea as a Biofumigant II: Effect of Planting Date on Glucosinolate Production and Effect of Fumigation on Bacterial and Fungal Communities. Award: $100.

TAS Physical Science/Mathematics Award winner—Andrew Semmes, Cookeville High School, Cookeville, Grade 11. Title: Mathematical Modeling of Disease: When Should Putnam County Schools Be Closed Due to Illness? Award: $100.

4. Upper East Tennessee Science Fair, Inc., April 26, 2001, Johnson City. TAS representative—Dr. Jack Rhoton (winner to be announced at November 2001 Executive Committee meeting).

TAS First Place Senior High School Division winner—Mathew Frelich, Lasusanne Collegiate School, Grade 11. Title: Perceiving Particles and Revealing Rays.
TAS First Place Junior High School Division winner—Molly Quinn, St. Mary's School, Grade 8. Title: Heat Conduction.

6. 49th Middle Tennessee Science and Engineering Fair, April 5, 2001, Vanderbilt University. TAS Representative—Dr. C. Steven Murphree.

TAS Physical Sciences Awards: First Place Senior Division winner—Kenneth A. Robertson, Dickson County High School, Grade 11. Title: The Study of Polyphosphate Hydrolysis Using 31P NMR: Phase II. Honororable Mention Junior Division—Dan M. Burger, Martin Luther King Jr. High School. Title: How does Object Reflectivity Affect the Surface Temperature of the Ground.
TAS Biological Sciences Awards: First Place Senior Division winner—Nina Xu, Hillwood High School, Grade 12. Title: Disruption of a Kinase Gene Eliminates the Clock-controlled Rhythms. Honororable Mention Senior Division—Kanithi Akkineni, Hume-Fogg High School, Grade 11. Title: Village Technology for the Removal of Toxic Levels of Fluoride from Drinking Water. Honororable Mention Senior Division—Keerthi Akkineni, Hume-Fogg High School, Grade 11. Title: Assessing the Effects of Bacterial Regrowth and Dispersion on Solar Water Disinfection Systems.”

Discussion followed related to the need for coordination of science fair representatives. President Stewart asked Publicity Chairperson Fulcher to coordinate efforts for next year by contacting TAS representatives during the summer. Managing Editor Ervin expressed a desire to highlight TJAS and regional science fairs in the Journal. President Stewart asked Executive Committee members Rardon and Rhoton to consult VSP Director Daley to clarify the relationship between the VSP and the regional science fairs, and to consider ways to more effectively promote the programs. TJAS Director Rhoton will ask State Science Consultant Linda Jordan if the State Department of Education could help inform teachers. Education Committee Chairperson Smith-Walters suggested visibility at state meetings, such as the Tennessee Science Teachers Association meeting, would help promote TAS programs. President Stewart praised the work of Publicity Chairperson Fulcher in preparing attractive science award certificates for science fair winners.
Industry and Government Committee—Chairperson Lundy discussed the following report:

"I hope we were all very pleased with the high quality of the co-winners of the 2000 Tennessee Industrial Scientist of the Year Award. Those awards were presented during the Business Session of our Annual Meeting at Belmont University to Dr. Kenneth W. Tobin, Instrumentation and Controls Division, Oak Ridge National Laboratory, Oak Ridge and Dr. Ronald Nutt, Senior Vice President and Technical Director, CTI, Inc., Knoxville. Both are outstanding persons!

"I believe it noteworthy that Dr. Nutt, who has been involved with the creation and operation of about 12 different companies over the years, received several other awards during 2000 including the Time Magazine Co-Inventor of the Year Award for medical equipment. Perhaps you also saw the feature article describing his invention jointly with a European inventor. Others and I had the privilege of touring one of his companies during January here in Knox County and it really is a WOW! All of us who have or who will receive whole body scanning should be thankful for his creative genius and his abilities to satisfy NIH and other governmental bodies to bring the creations to the medical marketplace. Another example of his successful companies is the one that does invisible fencing for keeping pets in place.

As I already indicated, I retired from the position of Director, Center for Manufacturing Research (CMR) at Tennessee Tech at the end of June 2000. The CMR provided clerical support for the 2000 Award and use of its CD of 2000 Tennessee Manufacturers as the base for the mass mailing to seek nominations. Recently, I asked Dr. Ken Currie, Interim Director of CMR, if he would continue with the same support for the 2001 Award. He declined partially because he did not know who would be CMR Director come Fall 2001 and partially for other reasons.

As of now, I am employed part time by the Maintenance and Reliability Center at the University of Tennessee College of Engineering. I intend to try to generate some University of Tennessee interest in TAS possibly leading to the type of support previously available from Tennessee Technological University."

President Stewart praised Lundy for his success in identifying excellent recipients for the TAS Outstanding Industrial Scientist Award and stated that the screening process could serve as a model for other TAS awards.

Long-range Strategic Planning Committee—Chairperson Murphy provided no written report, but requested input from the Executive Committee on the recommendations made by the Long-range Strategic Planning Committee several years ago.

Education Committee—Chairperson Cindi Smith-Walters expressed interest in working closely with the Visiting Scientist Program (VSP). She will investigate ways to inform teachers of the availability and services of VSP. Chairperson Smith-Walters provided copies of a recent change in State of Tennessee teacher licensure standards for added endorsements effective May 1, 2001. A maximum of twenty-one semester hours can be required for an added endorsement. Committee members Murphy and Smith-Walters explained that the change permits teachers to become certified in science without the science core courses previously required. They fear that students will avoid the science core courses by getting the initial endorsement in a non-science area, then add the science endorsement later. Committee member Murphy reported that some students are being encouraged to follow that course of action. TIAS Director and President-elect Rhoton reported that he opposed the change, and the State Department of Education responded by explaining their difficulty finding qualified science teachers.

Executive Committee member Murphy presented a resolution adopted today, April 20, 2001, by the Tennessee Association of Science Department Chairs (TASDC), opposing the requirements for added endorsements. A motion to endorse the TASDC resolution passed. Murphy will provide a copy of the resolution for the TAS website. Murphy and Smith-Walters plan to meet with the Tennessee Science Teachers Association Executive Committee tomorrow, April 21, 2001, to discuss the issue.

OLD BUSINESS

President Stewart presented a letter of invitation from the President of East Tennessee State University (ETSU) for the TAS annual meeting to be held on the ETSU campus in November 2002. The Executive Committee accepted the invitation.

The possibility of a joint meeting with TSTA in 2003 was discussed. President-elect Rhoton reported that TSTA President Ruth Woodall and other TSTA officers will meet with TAS representatives to discuss the feasibility of a joint meeting. President-elect Rhoton will make the arrangements for himself, Meeting Coordinator Redding, Treasurer Harris, and Education Committee Chairperson Smith-Walters to meet with the TSTA executive board.

NEW BUSINESS

American Association for the Advancement of Science, Section Y—TAS representative Michael Redding discussed the following report:

"Representing the TAS, I attended the annual meeting of the American Association for the Advancement of Science (AAAS) in San Francisco on February 14-18, 2001. The following comments summarize my activities and information deemed pertinent to TAS.

"I attended the orientation session for the American Junior Academy of Science (AJAS) on February 14. This annual meeting is organized by the National Association of Academies of Science (NAAS), which includes TAS. I also attended the closing awards ceremony on February 17.

"The AJAS Affiliates Meeting was held on February 16. AAAS President Mary Good led discussion concerning the scientific community’s position on national security, human rights, and scientific freedom. Scientific exchange with Cuba, organized by the AAAS Office of International Programs, was highlighted. The role and responsibility of scientists in the courtroom and for mass media were discussed. Dr. Good commented that, from her perspective, national science policy ought to focus on reversing a declining trend in numbers of students seeking careers in science and technology. Richard Nicholson will soon step down from his job as Executive Director, and the AAAS is soliciting nominations for his replacement.

"The Section on General Interest in Science and Engineering (Section Y) held its annual business meeting on February 16. Chairperson John Safko (South Carolina) presided. Elizabeth Hafen (Massachusetts) was introduced as the new Chair-elect to follow Julie Ann Miller (Science News and Council of Editors) who assumed the Chair’s position on February 21, 2001. Sharon Dunwoody (Wisconsin) was announced as the newest Member-at-large. Five new AAAS Fellows were elected from the Section,
including Robert Cowen, Leslie Lieberman, Assad Panah, Judith Parker, and Susanna Priest.

"The Section budget is minimal, but sufficient, for the few expenses associated with Section activities. The Section is developing a web site to be found under the umbrella of www.aasas.org.

"Seven symposia at the San Francisco meeting were listed as of particular interest to the Section: Cultivating the Civic Scientist; Who Should Write the Story of Science; Communicating the Future: A Research Technology; Science and the News Media; Communicating Sustainability: Become a Best Seller? Bringing Space Science Down to Earth: Developments in Education and Outreach. Video and sound recordings of these and other symposia are generally available through AAAS.

"Ideas for Section-sponsored symposia at the 2002 meeting were discussed with attention to the following themes already selected by the AAAS: Communicating Across Boundaries; Science and Public Trust in a Connected World; Governing Science and Science in Government.

"The Section voted to endorse affiliation with the Council for International Exchange of Scholars (Fulbright Program) which was seeking a Sectional home within the AAAS.

"I attended the annual meeting of NAAS delegates on February 17. President Leslie Lieberman (Maryland) presided. The highlight of this meeting was an afternoon workshop entitled “Getting It Right in Prime Time” presented by a very dynamic speaker, Bob Howard, Director of Public Affairs for the Center for Disease Control. His theme was essentially that “you are the message”, and that one’s visual appearance and voice quality account for 85% of one’s effectiveness as a public speaker. Actual content carries little value!”

A motion by John Harris to recognize the long and dedicated service of Dr. Richard Raridon with the TAS Distinguished Service Award passed unanimously. Dr. Raridon has served TAS as Director of the Collegiate Division and as TAS representative to AAAS for many years. The Executive Committee thanked Dr. Raridon for his many years of service to TAS.

The Executive Committee discussed this year’s cancellation of the Eastern Collegiate Division meeting. The decision to cancel was made based on low numbers of paper submissions. Only two titles were submitted for presentation. Ideas to improve participation included change of meeting location and change from Friday to a Saturday meeting day, which has been successful in the Middle and Western Divisions. Attendance data provided by Director of Electronic Communications David Kesler indicates the Middle and Western Divisions continue to be strong.

Steve Murphree, Acting Nominating Committee Chair, presented the nomination of Dr. David J. Wilson for the TAS Distinguished College/University Scientist Award. Resume details and letters of support were provided to the Executive Committee. In addition to Dr. Wilson’s lengthy and impressive resume, including the publication of over 300 articles in refereed scientific journals, he was praised for his longstanding commitment to mentoring secondary school students preparing science fair projects, and his untiring efforts to recruit other TAS members to serve as mentors. A motion to approve the selection of Dr. David J. Wilson for the award passed unanimously.

To clarify award selection procedures, a motion to approve the procedure of accepting nominations for TAS awards throughout the year and making final selections at the spring Executive Committee meeting passed unanimously.

President Stewart distributed a flier provided by EVO-LISTTN, a web discussion group organized by the American Institute for Biological Sciences. The list-serve requests the TAS endorsement, would like to provide fliers at TAS meetings, and to have a link on the TAS web site. Executive Committee members agreed to look at the site and discuss the matter further at the November Executive Committee meeting.

Status of the Research and Membership committees would also be topics of discussion for the November Executive Committee meeting. Members were asked to think about the role of these committees and how they might be restructured into effective committees. Chairpersons are also needed for these committees.

President Stewart adjourned the spring meeting of the Executive Committee at 10:45 PM CST.

TENNESSEE ACADEMY OF SCIENCE EXECUTIVE COMMITTEE MEETING
November 2001

President Martin V. Stewart called the meeting of the Executive Committee of the Tennessee Academy of Science (TAS) to order at 2:10 PM CST in the Rosecrans Room of the Garden Plaza Hotel, Murfreesboro, Tennessee, 8 November 2001. Members present were: Jack Rhoton, President-elect and Director of the Tennessee Junior Academy of Science (TJAS); David J. Wilson, Past President; Sarah H. Swain, Secretary; John W. Harris, Treasurer; Richard Raridon, Director of the Collegiate Division; Michael L. Daley, Director of the Visiting Scientist Program; David Kesler, Director of Electronic Communications; M. Gore Ervin, Managing Editor of the Journal of the Tennessee Academy of Science; Michael Redding, Meeting Coordinator; Teresa Fulcher, Publicity Chairperson; Cindi Smith-Walters, Education Committee Chairperson; W. Andrew Sliger, Financial Oversight Committee Chairperson; Karen Kendall-Fite, Member-at-large; David Pitts, Member-at-large; Stephen M. Wright, Member-at-large; and Steven Murphree, Nominating Committee member.

Minutes of the 20 April 2001 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-elect and Program Chairperson Jack Rhoton summarized the planning for the joint meeting with the Kentucky Academy of Science. This year all TAS title and abstract submissions were sent to the President-elect rather than to Section Chairs, as was done in the past. This plan facilitated the publication of a common program with Kentucky Academy of Science Program Coordinator Robert Creek. Also, President-elect Rhoton made arrangements with invited speakers for an evening symposium, luncheon, and banquet. President Stewart thanked and praised President-elect Rhoton for a huge job well done.

Meeting Coordinator—Michael Redding reported that arrangements for student competitions were in place, as well as plans for the collection of judges’ voting results and the distribution of certificates to winners.

Treasurer—John W. Harris presented the following report:

CASH BALANCE—JULY 1, 2001

43,991.72

RECEIPTS

Membership Fees
4,230.00
Institutional Dues
3,500.00
Library Subscriptions 1,110.00
Interest Earned, FirstStar Bank 44.85
Dividends Earned, PaineWebber Money Mkt. Fund 347.08
Contributions 85.00
Annual Meeting Registration and Meal Fees 2,601.00
Page Charges 3,150.00
Journal 5.00

TOTAL RECEIPTS 15,072.93

TOTAL CASH AVAILABLE 59,064.65

DISBURSEMENTS
Journal 12,293.40
Tennessee Junior Academy of Science 6,090.90
Treasurer's Expenses 766.92
Secretary's Expenses 649.87
Travel 336.50
Dues/Fees 122.50

TOTAL DISBURSEMENTS 20,260.09

CASH BALANCE—NOVEMBER 2, 2001 38,804.56
Receipts 15,072.93
Disbursements 20,260.09
Cash Decrease -5,187.16

BREAKDOWN OF HOLDINGS
US Postal Service, Lawrence, KS 1,055.38
TTU Account 438.34
Checking Account, FirstStar Bank 5,082.03
Savings Account, FirstStar Bank 7,551.73
Money Market Fund, PaineWebber 24,677.08

TAS HOLDINGS—NOVEMBER 2, 2001 38,804.56

TJAS TRUST FUND (Vanguard Star Fund)
(9,232.108 shares owned as of 09/30/01)
Account Value as of 03/30/01 151,591.21
Disbursements (Dividend Distributions)
06/22/01 2,308.03
Account Value as of 06/30/01 155,653.34
Account Value as of 09/30/01 144,020.88

LIFE MEMBER TRUST FUND (PaineWebber)
Value of Account as of 09/30/01 15,000.00

TOTAL VALUE OF HOLDINGS—NOVEMBER 2, 2001 197,825.44

Treasurer Harris noted investment losses, though not unexpected. A decrease of approximately $30,000 was due in part to investment losses and in part to the printing of backlogged issues of the Journal to get publication back on schedule. Treasurer Harris noted that pre-registration for the annual meeting was lower this year than last. President Stewart thanked Treasurer Harris for making several trips to Murfreesboro to meet with KAS officers and for many hours of service related to the joint meeting. A motion to accept the Treasurer's report passed.

Treasurer Harris provided copies of the Tennessee Academy of Science Operations Manual. He asked Executive Committee members to review the sections related to their offices and offer additions, revisions, or corrections. Treasurer Harris noted that duty descriptions were needed for Meeting Coordinator and Web Master. President Stewart made a motion that officers provide revision suggestions at the April 2002 meeting. The motion passed.

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

"There were eight manuscripts submitted in 2000: five have been published and three await return of author revisions. Six manuscripts have been submitted for 2001. Four of these have been published (in press), one was rejected, and one has been returned to the author for revision.

"The seven manuscripts currently included in the Journal database are distributed as follows: Accepted (0), In review (1), Returned for revision (6). 2001 submissions include the following categories: In press (5), New submissions to be reviewed (0), Undetermined status (0), Rejected (1), Withdrawn (0).

"The only manuscript currently in review reflects a 1996 submission for which I finally made contact with an author. The manuscripts returned for author revision represent one manuscript from 1996, one from 1999, three from 2000, and one from 2001. The manuscripts in press represent four 2001 submissions and one 1996 submission that will be published in 76:4. There are no new submissions that need to be processed. All preexisting files have either been closed, published, or are in review/revision. There was one manuscript rejected from the 2001 submissions.

"Dr. James X. Corgan from the Department of Geology and Geography, Austin Peay State University has faithfully served as the Section Editor of the History of Science Section, and Dr. Anthony Newsome from the Department of Biology, Middle Tennessee State University, has faithfully served as the Section Editor for the Microbiology Section. Both of these individuals have asked to be relieved from their Section Editor duties. The Journal and the Academy are grateful to Dr. Corgan and Dr. Newsome for their service.

"The terms for the current Section Editors have expired. Therefore the following nominees for a three-year term (1 May 2001–May 2004) as Section Editors are submitted for Executive Committee Approval:

Botany
James Caponetti, Dept. of Botany
University of Tennessee, Knoxville

Cell and Molecular Biology
Charles J. Biggers, Dept. of Biology, The University of Memphis, Memphis

Chemistry
Martin V. Stewart, Dept. of Chemistry, Middle Tennessee State University, Murfreesboro

Engineering
Michael L. Daley, Dept. of Electrical Engineering, The University of Memphis, Memphis

Ethics in Science and Technology
Robert Riser, Dept. of Computer and Information Science, East Tennessee State University, Johnson City

Geology and Geography
David N. Lumsden, Dept. of Geophysical Sciences, The University of Memphis, Memphis (Note: 2-year term; 2001–2003)

History of Science
George E. Webb, Dept. of History, Tennessee Technological University, Cookeville

Math and Computer Science
William K. Glunt, Dept. of Math and Computer Science, Austin Peay State University, Clarksville
Medical Sciences
Robert O'Bannon, Dept. of Biology, Lee College, Cleveland

Microbiology
Jon H. Lowrance, Dept. of Biology, Lipscomb University, Nashville

Physics and Astronomy
Mari Weller, Dept. of Physics & Astronomy, Middle Tennessee State University, Murfreesboro

Science and Math Teachers
Sarah F. Barlow, Dept. of Biology, Middle Tennessee State University, Murfreesboro

Zoology I
James Huggins, Dept. of Biology, Union University, Jackson

Zoology II
Karl H. Joplin, Dept. of Biological Sciences, East Tennessee State University, Johnson City

“All the abstracts (except one) for the 2001 fall meeting have been compiled into a computer file, edited, and prepared for submission pending changes/deletions that result from the meeting. The abstracts, along with the President’s profile, minutes of the 2001 Executive Committee meetings (spring and fall), award winners, and new members for 2001 will appear in the Winter 2002 (Volume 77) Journal issue.”

A motion to approve the names of Section Editors presented by Managing Editor Ervin passed. A second motion to acknowledge past Section Editors for their service was also approved. In response to a question about “turn-around time” for articles submitted, Editor Ervin stated that all submissions should be published within six months. President Stewart noted the return to quarterly publication of the Journal and praised Editor Ervin for his diligence in making that possible. Editor Ervin noted that electronic submission of abstracts was successful this year with all but one abstract being submitted electronically.

Collegiate Division—Director Richard Raridon presented the following report:

“The Western Regional meeting was held at the University of Memphis on March 24, 2001. Nineteen student papers from five schools were presented. They were posted under the Collegiate Division at tas.Rhodes/edutax.htm. The Middle Regional meeting was at Austin Peay State University in Clarksville on April 21, 2001. Eighteen student papers from six schools were presented. They are posted at www.apsu.edu/mathews/ftas/tas2001.htm. There was no Eastern Regional meeting held due to lack of paper submissions. The regional sponsors are Dr. Fred Matthews, Austin Peay State University, Dr. Gary Litchford, University of Tennessee at Chattanooga, and Dr. Charles Biggers, University of Memphis.”

Discussion related to the cancellation of the Eastern Division annual meeting followed the report. Director Raridon mentioned that Roan State Community College and Pellissippi State Technical Community College were possible meeting sites for the Eastern Division. David Kesler noted that the number of papers presented at the Eastern Division meetings has been low for several years. Some expressed concern that an increasing number of undergraduates presenting papers at the TAS annual meeting might impact participation in the Collegiate Division meetings. President Stewart asked President-elect Rhoton to gather data on the numbers of undergraduates presenting at the TAS annual meeting and to report at the April meeting.

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

“The 2001 spring meeting of the Tennessee Junior Academy of Science was held on Friday, April 20, at Pearl Cohn Comprehensive High School in Nashville. A total of fifty-three papers were submitted. Twenty-six of these were selected by a panel of readers to be presented at the Annual Meeting. The top two presenters were Suvarna K. Murti, Lausanne Colleigate School, Memphis, and Eric Change, Martin Luther King Junior Magnet School, Nashville. The title of Ms. Murti’s paper is “Identification of the Functional Domain of a Human Gene.” Mr. Chang’s paper is entitled, “A Mathematical Model of Bioturbation, Bacterial Metabolism, and Ferric Sulfide Reactions in Oxygen Penetration of Lake Bottom Sediments.” Both papers were edited and published in the 2001 Handbook and Proceedings of the Tennessee Junior Academy of Science, along with eight other papers of the top ten winners. Also, an abstract of each presenter at the annual meeting was printed in the Handbook and Proceedings. The Handbook was sent to all high school science and mathematics departments as identified in the Tennessee State Department of Education’s Directory of Public Schools, Approved Non-public, and Special State Schools.

“Several of the above students participated in the 2001 American Junior Academy of Science (AJAS) meeting in California. In addition, Ms. Suvarna K. Murti participated in the Intel International Science and Engineering Fair in San Jose, California and received the following awards: (1) Intel Achievement Award for outstanding research project in any field of science. Only eight of these awards are given from a pool of 1,205 science fair finalists from the United States and 40 other countries. This award carries a cash prize of $5000. (2) Top Research Award in Medicine and Health Category from the United States Navy and Marine Corps. This award carries an $8000 college scholarship over a four-year period.

“During the April 20 meeting, a framed certificate and a small honorarium ($100) was presented to an outstanding secondary science teacher from each of the three grand divisions of the state. The recipients of the awards are as follows: Jan Coley (Biology II and Research & Design), Jefferson County High School, Dandridge; Missy Bunch (Biology, Molecular Biology, and Chemistry), Martin Luther King Magnet School, Nashville; Rita Moore (AP Biology and Honors Biology), White Station High School, Memphis. These TAS Outstanding Secondary Science Teacher Awards recognize teachers for their outstanding contribution to science education and for stimulating and inspiring students to an active interest in science.”

“Gary W. Barrigar has been named recipient of the prestigious 2001 Tennessee Academy of Science (TAS) Distinguished Science Teaching Award. Barrigar, who is a high school Chemistry, Physics, and Ecology teacher in Elizabethton, Tennessee, will receive the award on November 9, 2001, during the Awards Banquet of the Tennessee Academy of Science (Middle Tennessee State University, Murfreesboro, Tennessee). 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, Barrigar will receive a plaque and a $500 cash award.”

Director Rhoton provided copies of a press release prepared to recognize the recipient of the 2001 TAS Distinguished Science Teacher Award, Mr. Gary W. Barrigar, Elizabethton High School, Elizabethton, Tennessee. The information will also be published in the Journal.

TJAS Director Rhoton reported that he held a complete col-
REPORTS FROM COMMITTEES

Audit Committee—Chairman Eugene Kline provided 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, MBS, 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 upon 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, Chair discussed the following report:
"Members of the Education Committee are as follows: Chair, Cindi Smith-Walters, Middle Tennessee State University; Michael Daley, University of Memphis; Jack Rhoton, East Tennessee State University; Bob Marloue, University of Tennessee, Chattanooga; Linda Jordan Science Consultant, Tennessee State Department of Education; Bob Hartsorne, University of Tennessee, Martin; David Wilson, Vanderbilt University; Ron Robertson, Austin Peay State University, and Dick Rairdon, Oak Ridge Tennessee.

I received no reply from Linda Jordan or Bob Hartsorne, so I do not know if these individuals are still interested in serving. I did hear from the other members (many thanks for those prompt replies!)."

Initiatives since the last meeting of the TAS Executive Committee:
1. Information about the joint TAS/KAS meeting in Murfreesboro was sent to the Tennessee Science Teacher's Association, Tennessee Environmental Education Association, and the Tennessee Consortium of Arts and Science. The Consortium posted the notice on their distribution list.

2. Information on the TAS Networks Program also was sent to the above-mentioned groups. The Tennessee Environmental Education Association printed information in their latest newsletter and the Consortium posted the information on their distribution list.

News and General Information:
1. There has been no news from the State Department of Education concerning add-on endorsements (licensure) in secondary science for individuals currently certified in other areas. To the best of our knowledge this 'add-on endorsement' went into effect in the spring of this year and remains.

2. In the last week of August new Tennessee Science Curriculum Frameworks, K-8, were approved. For copies you may download from the State Department of Education website or contact Cindi Smith-Walters for a hard copy.

Questions:
Below are listed several areas of work for this committee to pursue. I encourage members of the board to comment upon some of those areas and give the committee a 'direction' for this next year. Please feel free to chat with committee members/me about concerns/suggestions.
1. Look at TAS schedule of awarding grants for science projects to give students a longer time to work on projects.
2. Consider the student grant application process and see if this needs to be revised/changed to be more effective.
3. Work on developing a ‘roster’ of folks willing to serve as science fair judges and make this available to those who are involved in administrating the fairs.
4. Expand the ‘pilot project’ in the Nashville area where members mentored junior high and/or high school students interested in research.
5. Work with state Department of Education in areas of Science/Mathematics efforts.
6. Develop a document on “How to do a science fair project”.
7. Promote the Networks Program.
10. Work with/promote Science Olympiad.

“As you can see there is plenty of work and many different directions to go. As a committee representing the membership, which of these would be ‘most important/cost effective’ to pursue?”

Discussion related to the “questions” outlined in the report followed. In response to “Question #1” TJAS Director and President-elect Rhoton suggested he could submit grant requests directly to Treasurer John Harris and allow students to receive funds earlier than is possible under the present plan involving the Executive Committee. In response to “Question #5” Kesler and other members of the Executive Committee expressed the importance of TAS having input at the State Department of Education. Committee members also supported the idea of developing an email survey to determine interest among TAS members for participation in area science fairs (Question #3). President Stewart asked Chair Smith-Walters to present plans to implement these suggestions at the April Executive Committee meeting.

Financial Oversight Committee—Chairperson Andrew S isler noted that he would continue to communicate with Treasurer Harris. No changes in investment strategies are recommended or expected until the economy improves.

Industry and Government Committee—President Stewart reported the resignation of Chairperson Ted Lundy and praised Lundy for his diligence in locating deserving award recipients from within the industrial community during his years of service to the Academy. President Stewart also reported that Past President David Wilson has agreed to serve as chairperson of the committee. Michael Daley will serve as a committee member. Wilson and Daley will propose new approaches for the committee at the April meeting.

Publicity Committee—Teresa Fulcher, Chair, discussed the following items: An additional 1000 copies of the TAS brochure were printed. Half of these were sent to MTSU to be used in preparing information packets for the 11th meeting. Press releases regarding the 11th meeting were sent to 37 daily newspapers across the state, as well as television stations and public radio stations in Nashville. Immediate plans are in place for photographs to be taken of TAS award recipients at the 11th annual meeting, and press releases written and submitted to newspapers. Photographs of the meeting will be used on the TAS web site. After receiving the list of winners from student oral and poster competition, certificates will be printed and mailed to recipients.

Chairperson Fulcher also plans to make the contacts needed for presentation of TAS awards at regional science fairs.

Necrology Committee—Alexander Wells, Chair. Treasurer Harris presented the following list of TAS members deceased during 2001: Dr. Robert Amy, retired Professor of Biology, Rhodes College, and past TAS President; Conrad W. Bates, Hixson, retired high school science teacher; Dr. Bernard W. Benson, Challenger Center, University of Tennessee, Chattanooga, and past TAS President; Dr. Gerald Parchment, retired Professor of Biology, MTSU, and past TAS President; Dr. William T. Pinkston, Professor of Physics, Vanderbilt University; Dr. Howard E. Smith, Professor of Chemistry, Vanderbilt University; Dr. James W. White, retired Professor at University of Tennessee, Knoxville; Mrs. Louise Wiser, active member and wife of Dr. J. E. Wiser, Department of Chemistry, MTSU. The Executive Committee observed a moment of silence in honor of these members.

Nominating Committee—Chairperson David Wilson reported the following slate of officers for 2002: Karen Kendall-Fite, President-elect, John W. Harris, Treasurer, Sarah H. Swain, Secretary. Each nominee had been contacted and had agreed to serve. Chairperson Wilson noted the involvement of Karen Kendall-Fite, a community college faculty member, as particularly valuable to the academy. A motion to accept the slate of officers presented by the Nominating Committee was approved.

OLD BUSINESS

President Stewart noted that the Membership and Research committees did not have chairpersons and had not been active during the past year. President Stewart asked for volunteers to form ad hoc committees to clarify the roles of these committees. Andy Sliger and David Kesler agreed to work on Membership; Gore Ervin agreed to work on Research and seek additional help among TAS members at MTSU. President Stewart asked the committee to report to 2002 President Jack Rhoton and provide information at the April Executive Committee meeting.

President-elect Rhoton discussed the feasibility of a joint meeting with the Tennessee Science Teachers Association (TSTA), possibly in the year 2003. He expects to meet with TSTA President Ruth Woodall soon to discuss specifics. President Stewart suggested that Dr. Rhoton try to arrange a meeting that would allow TAS Treasurer John Harris to also attend.

Organizers of the web site EVOLISTTN asked TAS to consider adding their site as a link on the TAS web site. Several members of the Executive Committee were familiar with the site and recommended the action. The committee voted to approve adding EVOLISTTN as a link on the TAS web site.

NEW BUSINESS

The International Science and Engineering Fair needs judges for its 2002 meeting in Louisville, Kentucky. TAS members are encouraged to participate. Interested TAS members should contact President Stewart for details.

President Stewart nominated TAS Secretary Sarah Swain for the TAS Distinguished Service Award. A motion to approve the nomination passed. President Stewart expressed appreciation for Secretary Swain’s service to the academy.

Future meeting sites were discussed. TAS has accepted the invitation from the President of East Tennessee State University
(ETSU) to hold its 2002 annual meeting on the ETSU campus in Johnson City, November 14–15, 2002. The feasibility of a joint meeting with TSTA during 2003 or 2004 is still being investigated. Karen Kendall-Fite will ask for an invitation from the administration at Columbia State Community College for the 2003 meeting. Andy Sliger will investigate the feasibility of holding the 2005 meeting on the campus of the University of Tennessee at Martin.

President Stewart recognized the service of Past President David J. Wilson with the presentation of a plaque. President Stewart adjourned the meeting of the TAS Executive Committee at approximately 5:00 PM CST.