

PROCEEDINGS OF THE TENNESSEE ACADEMY OF SCIENCE 1985

DIANE R. NELSON, SECRETARY T.A.S.
East Tennessee State University

EXECUTIVE COMMITTEE MEETING

APRIL 19, 1985

The Executive Committee Meeting of the Tennessee Academy of Science was called to order at 7:00 p.m. by President William H. Ellis in Room 336 of the Downtown Campus of Tennessee State University. Present were Robert L. Wilson, Past-President; R.K. Fletcher, Treasurer; Gus Tomlinson, Editor; William Pafford, Director of the Junior Academy; Richard J. Raridon, Director of the Collegiate Division; Benjamin P. Stone and Thomas E. Byrne, Members-at-Large. In the absence of the Secretary, Thomas Byrne recorded the Minutes.

The Secretary, Diane R. Nelson, had mailed copies of the Minutes of the November 1984 Executive Committee Meeting, which had been printed in the April 1985 issue of the Journal. A motion to accept the Minutes as printed was accepted unanimously.

The Treasurer, R.K. Fletcher, presented the following report, which was accepted by a motion passed unanimously.

TREASURER'S REPORT APRIL 19, 1985
 Richard K. Fletcher, Jr., Treasurer

Cash Balance — July 1, 1984	\$17,377.11
Receipts:	
State of Tennessee	\$ 19,000.00
Membership Dues	5,954.00
Library Subscriptions	2,166.00
Interest Earned	1,725.69
Journal Page Charges	1,110.00
Contributions	927.00
Registration and Exhibitor's Fees	978.00
Banquet Fees	448.00
Total Receipts	32,308.69
Total Cash Available	49,685.80
Disbursements:	
Journal Printing Costs	\$ 11,595.39
Visiting Scientist Program	1,575.77
Tenn. Jr. Academy Science	1,152.45
Annual Meeting	2,633.24
Board Meeting Expenses	807.96
Treasurer's Expenses	1,213.33
Reimb. for Overpmt. on Pg. Charges	48.00
Student Research Grants	950.00
Collegiate Division Expenses	318.00
Secretary's Expenses	373.92
Total Disbursements	20,668.06
Cash Balance — April 14, 1985	29,017.74
Receipts	32,308.69
Disbursements	20,668.06
Cash Increase	11,640.63
Cash Balance — July 1, 1984	17,377.11
Cash Balance — April 14, 1985	29,017.74
Cash Distributions:	
TTU Account	265.13
Primary Checking Acct. Am.Bnk. & Tr.	1,838.13
Savings Acct. Am. Bank & Tr.	26,914.48
Total Cash Distributions — April 14, 1985	29,017.74

The Editor, Gus Tomlinson, submitted the following report. This report was accepted by a motion passed unanimously.

"A complete report on 1984 Journal activities, including a list of manuscripts received, published and rejected for the year, was given at the November meeting and published in the April 1985 issue of JTAS. These data will not be repeated in this brief report. Instead, this will be an

update of what has transpired since November.

January and April quarterly issues for 1985 have been published since the November meeting. The January issue included 7 regular scientific manuscripts plus full page news announcements on the Junior Academy Spring program and the Collegiate Division Regional Meetings for the spring of 1985. The April 1985 issue included sections on the new President of TAS, annual proceedings from the November meeting, new member lists for 1984, abstracts of research reports which were given at the annual meeting, plus regular manuscripts in zoology, botany, geology-geography and general science.

Twenty new manuscripts have been received since the November report. This compares with eight during the same time period last year. The response seems clearly related to reestablishment of the quarterly publication schedule for JTAS. One of the new manuscripts was rejected on the advice of reviews and several others are requiring major revisions prior to publication.

At the Executive Committee meeting in November, a contract from University Microfilms International, a division of Xerox Corporation was circulated and approved by the Committee to enter TAS into contractual agreement whereby we would furnish UMI with a copy of JTAS and UMI would provide reprint copy and delivery service to interested customers. This contract was signed and mailed to UMI January 24, 1985. TAS is to receive a 10% royalty on net sales of JTAS articles. The money generated for TAS is expected to be insignificant, but the convenience of having UMI to provide this service when back copy issues are depleted may prove very helpful in the future. A news item in JTAS will be carried as soon as UMI indicates that they are geared up and ready to respond to individual requests. The address for UMI will be:

University Microfilms International
 300 North Zeeb Road
 Ann Arbor, Michigan 48106 USA."

The Editor also discussed his efforts to obtain a price "roll back" for the printing of the journal and his efforts to limit production of the journal by the printer to 750 copies per issue. The printer has been printing approximately 100 extra copies an issue and charging the academy for these extra issues. A letter from the Association of Systematics Collectors was discussed.

The Director of the Visiting Scientists Program, Bernard Benson, had mailed printed copies of his report which was accepted. The report reads as follows:

"Please find attached a summary of data collected as of April 1, 1985, for the 1984-85 Visiting Scientists Program. During our Fall meeting I had indicated a concern that the Center for Environmental/Energy/Science Education at UTC was having to underwrite too large a share of the cost for secretarial assistance to operate the Visiting Scientists Program. I was able to discuss this matter with Maurice Field, Director of the Center for Excellence in Science Teaching at UT Martin. Dr. Field was very receptive to the idea of providing support to the Academy for assisting us in improving the operation of the Visiting Scientist Program.

Subsequently, I am requesting funds from the Center for Excellence at UT Martin to provide for a graduate assistant to help in the operation of the Visiting Scientists Program. This will also enable us to concentrate on the area of program evaluation and visiting scientist recruitment.

With this in mind I feel that the current level of support for the Visiting Scientists Program should be adequate for the 1985-86 school year.

OPERATION

Visits Requested to Date (4/1/85)—	68
Visits Completed—	39 (includes cancellations and declines by V.S's.)
Visits Cancelled—	3
Visits Declined—	10
Visits Outstanding—	25
Students Contacted (to date)—	4192
Teachers Participating—	80
Classes Involved—	60
TVA Personnel Requested for Visits—	5"

The Director of the Collegiate Division, Richard J. Raridon, presented the following report.

"Four papers were presented at the Collegiate Division Section at the TAS Annual Meeting on November 17, 1984. There were no expenses involved. Three regional meetings have been scheduled for the spring of 1985."

The Director's report was accepted.

The Director of the Junior Academy, William N. Pafford, presented the following report.

"Arrangements are now being finalized for the spring meeting of the Tennessee Junior Academy of Science on April 19 at West End Middle School in Nashville, Tennessee. All members of the Academy are invited to attend.

We are planning to once again honor three outstanding science teachers in Tennessee this year. Papers will be presented during the times of 9:30-11:30 a.m. and 1:00-3:00 p.m., with recognition of the outstanding science teachers scheduled for 11:30 a.m. The Governor has been invited to attend; however, he did not attend this year.

A total of 40 papers from seven different schools was received this year. We have invited 18 students to present their papers at the annual meeting. Participants will be reimbursed at the rate of 20 cents per mile, along with a meal allowance. The three outstanding teachers to be honored will be reimbursed also for their travel expenses.

As of this date a total of \$519.40 has been expended from the 1984-85 budget. This does not include expenses for the spring meeting or publication of the *Handbook*, the major expenses of our program. It is anticipated that we will be able to carry out all necessary programmatic activities within our approved budget."

The Director's report was accepted. The Director discussed the high quality of papers presented at the annual Junior Academy of Science meeting. Awards were also presented at the meeting held at West End Middle School in Nashville, Tennessee.

The delegate to AAAS deferred his report until the November meeting due to the fact the AAAS meeting will occur in the month of May.

The report of the State Department of Education representative, Geraldine Farmer, had been mailed to the members of the committee, and was accepted. The report reads as follows:

TEACHER RECOGNITION

Outstanding secondary science teachers were selected to be recognized by the Tennessee Academy of Science. One teacher was selected from each of the grand divisions of the state. Names of selected individuals were forwarded to Dr. Pafford at East Tennessee State University.

ACADEMY FOR SCIENCE AND MATHEMATICS EDUCATORS

The Center for Enrichment of Science and Mathematics Education (CESME) located on the campus of the University of Tennessee at Martin will cooperate with the Tennessee Department of Education in the conduction of the "Tennessee Academy for Science and Mathematics Educators" (TASME), June 9-14, 1985. The CESME staff will direct the activities.

The Academy will be Phase I of a four phased program initiated by the Tennessee Department of Education to enhance the teaching of science and mathematics. The Academy will focus on instructional strategies and the emerging K-12 science curriculum.

All 38 teacher preparation institutions in Tennessee will be invited to participate. The participating institutions will be asked to assume responsibility for the training of instructional leaders in their area.

FUNDING

The office of Fiscal Services has informed me that a contract for the Tennessee Academy of Science in the amount of \$19,000 is before the legislature for the 1985-86 year.

The report of the Program Chairman was relayed orally by William H. Ellis. A series of pollution control topics will comprise the program at the November meeting. Speakers have been contacted and early response to their attending the November meeting is positive.

OLD BUSINESS

William H. Ellis has solicited an invitation from Jackson State Community College for the 1987 meeting. No response to his request has been received to date.

NEW BUSINESS

Budget 1984-1985	Budgeted	Spent (4/12)	Proposed
Secretary	\$ 400.00	373.92	400.00
Treasurer	1,500.00	1,213.33	1,600.00
Jr. Academy of Science	3,200.00	1,152.45	3,500.00
Visiting Scientist Program	4,500.00	1,575.77	4,500.00
Journal	14,000.00	14,895.19*	15,000.00
Research Grants for Secondary Students	1,000.00	950.00	1,000.00
Annual Meeting and Banquet	1,900.00	2,633.24	1,900.00
Collegiate Division	1,000.00	318.00	1,000.00
Board Meeting Expenses	1,200.00	807.96	1,200.00
President's Office	100.00	-----	100.00
AAAS	-----	-----	300.00
		TOTAL BUDGET	\$30,500.00

After discussion, a motion to accept the new budget was accepted unanimously.

A motion was passed to reaffirm the stand that at least one person (on papers with multiple authors) must be a member of the Academy in order to present a paper before the Academy.

A motion was passed to form a committee to address the issue of requiring at least one person (on papers with multiple authors) to be a member of the Academy to publish in the Journal. The committee of W. Ellis and Benjamin Stone will discuss the matter with the Executive Committee in November.

A motion was passed to consider the awarding of the three best collegiate papers of the Collegiate Division a membership in the Academy. The papers would be selected from each region of the state. This matter will be further discussed at the November meeting.

A letter from the Nature Conservancy was distributed and discussed with no action taken at this time.

Discussion of an "image problem" came before the Executive Committee. President William Ellis will forward letters to several college presidents in an effort to address the issue. Discussion of selecting new section editors by the Executive Committee will be continued at the November meeting. This may require a change in the by-laws of the Academy and thus will be handled at that time.

The Academy will stop mailing journals to members when membership dues are six months late. Discussions by R. K. Fletcher revealed several past due members were still receiving their journals. In the future a second notice or other later notices may be used to contact dilatory members. This matter will be further discussed in November.

President William Ellis extended his thanks to Gus Tomlinson for making local arrangements for the April 19th meeting.

The meeting was adjourned at 9:25 p.m. C.S.T.

EXECUTIVE COMMITTEE MEETING

NOVEMBER 21, 1985

The Executive Committee Meeting of the Tennessee Academy of Science was called to order at 7:05 p.m. by President William H. Ellis in Dining Room C of the James Union Building at Middle Tennessee State University. Present were William Ellis, President; David Yarbrough, President-Elect; R. K. Fletcher, Treasurer; Diane R. Nelson, Secretary; Gus Tomlinson, Journal Editor; Bernard W. Benson, Director of the Visiting Scientist Program; Richard J. Raridon, Director of the Collegiate Division; William Pafford, Director of the Junior Academy; Thomas E. Byrne and Benjamin P. Stone, Members-at-Large; Floyd Scott, Treasurer-Elect; and Clay Chandler, Local Arrangements Chairperson.

The Secretary, Diane R. Nelson, had mailed printed copies of the Minutes of the April 1984 Executive Committee Meeting, which had been recorded by Thomas Byrne. A motion to accept the Minutes was accepted unanimously.

The Editor, Gus Tomlinson, presented the following report:

"Since the annual meeting in November of 1984, 4 issues of JTAS have been published. They were quarterly issues for January, April, July and October. In addition to the regular inclusions such as proceedings, abstracts, new member lists, news events, etc., 27 regular manuscripts were published in the 4 28-page issues. The breakdown by subject area for 1985 was:

Zoology	9
Botany	5
General Medical Sciences	4
Chemistry	2
Geology-Geography	2
Environmental Sciences	2
Physics	1
Genetics	1
General Science	1
TOTAL	27

Thirty-nine new manuscripts were received this year as compared to 29 last year. The current backlog consists of 11 manuscripts in page proof form for January 1986 plus 5 additional manuscripts set for April 1986. Two manuscripts were rejected in 1985 and 3 others were withdrawn by authors following editorial review.

Receipt of author page cost checks and payment of the substantial publication costs through Curley Printing Company remain under the direct supervision of the Treasurer of TAS. However, authors are invoiced via the Editor's office for page costs (at page proof time) with instructions to forward checks immediately to the Treasurer. The Treasurer is provided with 2 copies of each invoice so that re-billing can follow for any case of late or nonpayment of fee. This early billing procedure, i.e., prior to publication of the manuscript, and the convenient re-billing procedure should insure TAS of its rightful \$15 per page from contributors. Expenditures incurred via the Editor's office and page costs billed to authors are summarized for each of the 1985 quarterly issues below:

Issue	Editorial Costs	Page Invoices to Authors
January	907.50	768.00
April	905.00	240.00
July	955.00	645.00
October	977.50	450.00
TOTALS	\$3,745.00	\$2,103.00

The Editor's report was accepted. A letter from Dr. John Schrock, Association of Systematics Collections, with a list of biologists on the ASC list for Tennessee, was transferred to the Secretary to compare with the T.A.S. membership list. Applications for T.A.S. will be sent to those who are not current members of the Academy.

The Director of the Visiting Scientist Program, Bernard Benson, presented the following report:

"The following represents a summary of the 1984-85 fiscal year and a progress report on the 1985-86 fiscal year:

- 1) A data summary for the fiscal year 1984-85 is attached. This profile also contains data from the previous year as a basis for comparison. There were 77 requests for visits for the 1984-85 academic year. As of November 8, 1985, there have been 57 requests and 43 acceptances. To date, 11 visits have been completed.
- 2) During the 1984-85 AY, rosters were sent to all Tennessee high schools and to junior high and middle schools on request. For the 1985-86 AY, rosters were sent to all high schools, junior high, and middle schools.
- 3) The 1985-86 roster contains a total of 110 visiting scientists compared to 82 visiting scientists in the 1984-85 roster. This year we are hoping to increase the number of visiting scientists by actively recruiting within agencies, industries and educational institutions.
- 4) The Center for Excellence in Science & Math at UT Martin has funded a graduate assistant to serve as the Program's coordinator for the 1985-86 fiscal year. This position supports improved communications with the schools and visiting scientists. We are now better able to market the Visiting Scientist Program as an enrichment program to the science and math curriculum in Tennessee Schools. The responsibilities of the graduate assistant are focused on:
 - a) evaluating the Visiting Scientist Program as operated by the Center for Environmental/Energy/Science Education at UTC for the Tennessee Academy of Science,
 - b) examining the current operational procedures used in the Visiting Scientist Program and recommending procedures to improve the Program's operation,
 - c) designing ways of promoting the Visiting Scientist Program in order to make the most effective use of the Visiting Scientists who cooperate in the program,
 - d) recruiting additional Visiting Scientists from universities and private industry within the state of Tennessee, and
 - e) analyzing the current data base that has been collected on the Visiting Scientist Program as a basis for preparing descriptive materials to promote the Visiting Scientist Program.

PROGRAM SUMMARY

	84-85	83-84	
Visits requested	73	80	Decrease of 9%
Visits cancelled	6	7	Decrease of 14%
Visits declined	13	25	Decrease of 48%
Students contacted	5698	5430	Increase of 5%
Teachers Participating	112	107	Increase of 4%
Classes involved	96	120	Decrease of 20%
Visits completed	54	48	Increase of 12%

The Director's report was approved. Dr. Benson announced that plaques for outstanding service to the Visiting Scientist Program will be presented at the Annual Banquet to Dr. Edward W. Burke, Dr. Robert R. Marchini, Dr. John W. Hanneken, and Dr. Aaron Jack Sharp.

The Director of the Collegiate Division, Richard J. Raridon, presented the following report:

"Three regional meetings were held during the spring of 1985. There were seven papers presented at the Eastern Regional Meeting at Carson-Newman College, ten papers presented at the Middle Regional Meeting at Austin Peay State University, and fifteen papers presented at the Western Regional Meeting at Christian Brothers College. These meetings were organized by the regional sponsors, Dr. Charles J. Biggers of Memphis State University, Dr. James X. Corgan of Austin Peay State University, and Dr. Robert G. Ziegler of Lincoln Memorial University."

The Director's report was accepted.

The Director of the Junior Academy, William N. Pafford, presented the following report:

"During 1984-1985 total expenditures were approximately \$3,000. This includes the cost of the *Handbook*, envelopes for mailing, and postage. These costs will be paid as soon as the *Handbook* is mailed.

The 1985 spring meeting was held at West End Middle School in Nashville on April 19. A total of forty-one papers were submitted by students across the state, and nineteen of these students were invited to present their papers at the annual meeting.

Abstracts of all papers presented at the annual meeting have been published in the *Handbook*, with the top five being edited and published in their entirety. The two highest-ranked presenters were Ms. Kim Kullman, Dickson County High School, and Mr. Cedric Dukes, Marshall County High School. They will receive a year's subscription to *Science* and *Science 85*.

Three outstanding science teachers were recognized at the annual meeting. They were Ms. Linda Barrett, Camden Central High School, Camden (West Tennessee); Mr. Ron Robertson, Dickson County High School, Dickson (Middle Tennessee); and Mr. Tom Ferguson, Farragut High School, Knoxville (East Tennessee). A representative from the Commissioner's Office presented a certificate to the three teachers so honored.

A check for \$300 was received from the Alcoa Foundation during the past summer".

The Director's report was accepted.

As delegate to the National Association of Academics of Science and to Section X of AAAS, Richard J. Raridon presented the following report:

"I represented the Academy at the Section X meeting and the meeting of the National Association of Academies of Science held in Los Angeles on May 27-31, 1985. The title of the NAAS symposium was Future Educational Delivery Systems: Technology in Education. Video tapes and computers were among the topics covered. The papers were published in the proceedings which were sent to each Academy officer. Sixty-seven students from 23 states attended the Junior Academy functions. The 1986 meeting will be held in Philadelphia."

President Ellis presented standing committee reports from the respective chairpersons as follows:

1. Auditing Committee: The Chairperson, Eugene A. Kline, submitted the following letter from the auditor, James F. McKinnie:

"I have examined the receipts and disbursements records of the Tennessee Academy of Science for the fiscal year ended June 30, 1985, and, in my opinion, the attached Cash Receipts and Disbursements statement correctly reflects the cash position of the organization at June 30, 1985. The entire accounting system appears to be well maintained.

I also prepared a Return of Organization Exempt from Income Tax, including a Schedule A. This Form 990 must be filed with the Internal

Revenue Service no later than November 15, 1985. This form was delivered to Dr. R.K. Fletcher, Jr., Treasurer."

2. Fellow's Committee: The Chairperson, Hal DeSelm, sent two names for nominations as Fellows. A third name was submitted by a member of the Executive Committee. A motion was passed to approve all three nominees as Fellows of the Academy and to present their names to the membership at the annual Business Meeting for approval. The individuals are as follows: Vernon Bates, David Fields, and David Lumsden.

3. Membership Committee: The Chairperson, James Caponetti, presented the following report:

"The treasurer of the Academy, Dr. Richard K. Fletcher, has reported to me that 28 persons have joined the Academy during the time period between January, 1985 and November 21, 1985. This figure includes six graduate students at Middle Tennessee State University who were recruited by Dr. Clay Chandler, and two faculty members at Union University who were recruited by Dr. Jimmy Davis. Dr. Charles Boehms at Austin Peay State University sent letters to 42 science people in several secondary schools in the Clarksville area. It is difficult at this time to determine how many of that group have joined the Academy."

The Committee's report was accepted. Discussion was held on the need for recruitment of new members and rebilling of dues for delinquent members. New members will be presented for acceptance by the membership at the annual Business Meeting.

4. Necrology Committee: The Chairperson, Albert L. Myers, reported the deaths of the following persons who were members of the Academy: Professor Grady D. Taylor of UT Martin and Spurgeon Boyd of Union University and Memphis State University. The committee's report was accepted.

5. Nominating Committee: The Chairperson, Robert L. Wilson, presented the following proposed slate of officers for next year:

President: Dr. David Yarbrough, Tennessee Technological University

President-Elect: Dr. Gus Tomlinson, Tennessee State University

Secretary: Dr. Diane Nelson, East Tennessee State University

Treasurer: Dr. Floyd Scott, Austin Peay State University

The proposed slate of officers was approved unanimously and will be presented to TAS members at the annual Business Meeting. Discussion was held on filling the positions of Journal Editor, which becomes vacant upon the election of the current editor, Dr. Tomlinson, as President-Elect. The application of Libby Workman for Editor was accepted by the Executive Committee. Transition of the Journal will be worked out with Dr. Tomlinson and Ms. Workman.

6. Research Committee: The Chairperson, Prem Kahlon, will submit a report at the annual Business Meeting.

7. Resolutions Committee: The Chairperson, James Caponetti, will present the resolutions at the annual Business Meeting.

8. Local Arrangements Committee: Chairperson Clay Chandler discussed local arrangements for the meeting. Program Chairperson David Yarbrough discussed the arrangements for the General Session and Banquet. The Executive Committee thanked these individuals for their efforts on behalf of the Academy.

OLD BUSINESS

The Academy will meet at Belmont College in 1986. Jackson State Community College in 1987, and Tennessee Tech in 1988. An invitation will be solicited for 1989. The 100th meeting of the Academy will be at UT-Chattanooga in 1990.

Dr. William Ellis and Dr. Diane Nelson will report on Constitutional revisions at the April Executive Committee Meeting.

A proposed amendment to the Constitution was submitted by Dr. Stone. The proposal was discussed, revised and approved by the Executive Committee for submission to the membership at the annual Business Meeting.

NEW BUSINESS

A proposal from Dr. Don Ramage, Belmont College, for changing the format of the annual meeting was discussed. President Ellis appointed Dr. Yarbrough and Dr. Tomlinson to a subcommittee to study the proposal and make recommendations at the Executive Committee Meeting in April.

The Secretary presented two resolutions which had been approved by the AAAS Council and forwarded to affiliated academies for action. The Executive Committee took no action on the resolution on "Violations of Human Rights in Nicaragua", but approved the resolution on "Scientific Peer Review" to be presented to the membership at the annual Business Meeting.

On behalf of Executive Committee, President Ellis thanked Dr. Tom Byrne for his service as Member-at-Large, Dr. R. K. Fletcher for his service as Treasurer, and Dr. Gus Tomlinson for his service as Editor.

The meeting was adjourned at 10:21 p.m. C.S.T.

THE NINETY-FIFTH MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

NOVEMBER 21-22, 1985

MIDDLE TENNESSEE STATE UNIVERSITY

The annual meeting of the Tennessee Academy of Science, Inc., was held November 21-22, 1985, at Middle Tennessee State University, Murfreesboro. Dr. Clay Chandler was Chairperson of Local Arrangements. Dr. David Yarbrough, Tennessee Technological University, was Program Chairperson. Approximately 200 individuals registered for the meeting.

The General Session was held in the Keathley University Center Theater on Friday morning beginning at 9:30 a.m. C.S.T. The Program Chairperson, Dr. David Yarbrough, presided over the session. The Academy was welcomed by Dr. Earl E. Keese, Dean of the School of Basic and Applied Sciences, Middle Tennessee State University. The speakers were as follows: Charles F. Baes, "Uptake of Atmospheric CO₂ by the Oceans"; V. Dean Adams, "Issues in Water Research"; John Thomas Tiesler, "Tennessee's Solid Waste Program;" and T. Harold Parker, "Overview of Research at TVA's National Fertilizer Development Center." Section meetings were held Friday afternoon in the University Center; 57 papers were presented as listed in the program. In addition, an open meeting of the Scientific Advisory Committee to the Rare Plant Protection Program of the Tennessee Department of Conservation was held to consider plant taxa to be listed as endangered under the "Rare Plant Protection and Conservation Act of 1985." The Annual Business Meeting was held in the University Center Theater at 5:15 p.m. C.S.T.

The Annual Banquet was held in Dining Room B of the James Union Building, beginning at 7:00 p.m. C.S.T., Friday evening. President William H. Ellis presided. Mr. Cal Burwell, Oak Ridge Associated Universities, Institute for Energy Analysis, was the speaker. The title of his address was "The Electrification of the Society."

The Collegiate Division held its meeting on Saturday morning at 9:00 a.m. C.S.T. in the University Center Theater. Dr. Richard Raridon presided and papers were presented by college students.

ANNUAL BUSINESS MEETING

NOVEMBER 22, 1985

The Annual Business Meeting of the Tennessee Academy of Science, Inc., was called to order by President William Ellis at 5:15 p.m. C.S.T. in the Keathley University Center Theater, Middle Tennessee State University, Murfreesboro, on November 22, 1985. The President determined that a quorum was present.

The reports of the Secretary, Treasurer, Editor, and Directors of the three educational programs were similar to those presented the previous evening at the Executive Meeting. The reports were approved and will be recorded in the Minutes.

Dr. Eugene Kline read the report of the Auditing Committee. President Ellis read the report of the Fellows Committee. A motion was passed that Vernon Bates, David Fields, and David Lumsden be elected Fellows of the Academy. Dr. James Caponetti read the report of the Membership Committee. The Treasurer handed out a list of individuals who had applied for membership in the Academy in 1984-85; in addition five individuals filled out applications at the annual meeting registration. A motion to accept the 33 new members was accepted.

The Chairperson of the Necrology Committee, Dr. Albert Myers, presented the names of Grady Taylor and Spurgeon Boyd, members of the Academy who had passed away. Dr. Myers asked the audience for a moment of silence in tribute.

Dr. Prem Kahlon, Research Committee Chairperson, presented the following report:

"The Research Committee submitted a proposal requesting \$1,000 from AAAS for 1985-86 school year. It appears that we were not funded this year since we have not heard from AAAS. We reported in our annual report to AAAS that we had received twenty-two applications requesting \$2,789.00 for 1984-85 school year and the Academy awarded \$1,000 to twenty-two applicants from its own resources.

The Research Committee announced the availability of funds in the TAS Journal as well as sent announcements to individuals who had requested information. The deadline for the applications was November 15, 1985. The total number of applicants was 60; the total requested budget was over \$3,100; 20 awards were made for a total of \$1,000. The following students received awards:

NAME OF STUDENT	SCHOOL	REQUEST	AWARD
Joseph Bordley	St. Andrew's-Sewanee	\$250.00	\$200.00
Tracy L. Taylor	McKenzie High School	75.15	50.00
Joseph Gwaltney	McKenzie High School	33.85	25.00
Lisa Langford	McKenzie High School	14.16	15.00
Paula Putman	McKenzie High School	50.14	50.00
Ricky Chism	McKenzie High School	65.50	60.00
Jennifer Galey	McKenzie High School	81.25	50.00
Tim Watkins	McKenzie High School	43.00	40.00
Selena Sasser	McKenzie High School	76.36	40.00
Steven R. Welch	McKenzie High School	39.98	40.00
Jason Harris	McKenzie High School	82.00	50.00
Jengi Smith	McKenzie High School	64.00	50.00
Kathy Cobb	McKenzie High School	9.00	10.00
Mary K. Traywick	McKenzie High School	54.00	20.00
6 students	Bradford High School	450.00	300.00"

Dr. Robert L. Wilson presented the report of the Nominating Committee. The President asked for further nominations from the floor; there were none. A motion was passed to accept the nominees, and the Secretary was instructed to cast one vote which would represent the unanimous election of David Yarbrough as President, Gus Tomlinson as President-Elect, Diane R. Nelson as Secretary, and Floyd Scott as Treasurer. President Ellis announced that Ms. Libby Workman was appointed Journal Editor by the Executive Committee to fill the vacancy created by Dr. Tomlinson's election as President-Elect.

Dr. James Caponetti, Chairperson of the Resolutions Committee, presented the following resolution:

RESOLUTION OF APPRECIATION

WHEREAS, the Tennessee Academy of Science, including the Collegiate Division, is enjoying a most pleasant, profitable, and well-organized series of meetings at Middle Tennessee State University, and

WHEREAS, the success of these meetings has resulted mainly from the efforts of the officers of the Academy; the Chairpersons of the several sections; the Local Arrangements Committee chaired by Dr. Clay Chandler and including Mark W. Hodge, Curtis Mason, Edward M. Snyder, Sarah H. Swain, and Marion R. Wells; from the recognition given the meetings by the press; and from the generous hospitality of the host institution.

BE IT RESOLVED, therefore, that the Tennessee Academy of Science express its sincere appreciation to these and all others who have contributed to the success of these meetings.

BE IT FURTHER RESOLVED, that this resolution be included in the minutes of the Tennessee Academy of Science and published as a part of the Proceedings of this meeting, and that copies be sent to President Sam Ingram of Middle Tennessee State University, and to Dr. Clay Chandler, Chairperson of the Local Arrangements for distribution to members of that Committee.

The resolution was accepted.

OLD BUSINESS

The Academy will meet at Belmont College in 1986 and Jackson State Community College in 1987. Tentatively meetings are scheduled at Tennessee Tech in 1988, Tennessee State University in 1989, and UTC in 1990 (100th meeting of the Academy). A proposal for a joint meeting with the Kentucky Academy of Science has been received and will be discussed at the April Executive Committee Meeting. President Ellis appointed Dr. Tomlinson and Dr. Yarbrough to review a proposal for a change in the format of the Academy meeting.

NEW BUSINESS

The following constitutional amendment was presented to the membership and will be voted on at the 1986 business meeting:

ARTICLE III SECTION 6.

CURRENT READING:

SECTION 6.—The Editor shall edit and manage the Journal of the Tennessee Academy of Science and such other publications as the Academy may from time to time publish. He shall be assisted by an Editorial Board consisting of one editor elected by each section, by an editor of the News of Tennessee Science, and by an editor of a section devoted to the High School Science Teacher, both of the latter to be approved by the Executive Committee.

PROPOSED CHANGE:

SECTION 6.—The Editor shall edit and manage the Journal of the Tennessee Academy of Science and such other publications as the Academy

may from time to time publish. *The Editor shall be assisted by an Editorial Board consisting of 3 editors per section, one of whom is elected by each section, and two editors, recognized regionally and/or nationally for their professional expertise, who are recommended by the Editor. All editors shall be approved by the Executive Committee.*

The following resolution adopted by the AAAS Council was approved by the membership:

"SCIENTIFIC PEER REVIEW"

WHEREAS the partnership between the government and the community of scientists is essential to the advancement of science, and

WHEREAS, without broadly based, consistent, critical, and professional evaluation of proposed expenditures for scientific work, there is a growing danger that the quality of research and education in science will be jeopardized,

BE IT RESOLVED that the Council of the AAAS reaffirm its commitment to the principle and practice of scientific peer review as indispensable to the allocation of public funds for the scientific enterprise.

The meeting was adjourned at 5:55 p.m. C.S.T.

TENNESSEE ACADEMY OF SCIENCE CASH RECEIPTS AND DISBURSEMENTS For Year Ended June 30, 1985

Cash Balance, July 1, 1984	\$17,377.11
Receipts:	
State of Tennessee	\$19,000.00
Membership dues and subscriptions	6,649.14
Library subscriptions	2,166.00
Interest earned	2,156.70
Journal page charges	1,158.00
Registration and exhibitor's fees	978.00
Contributions	927.00
Banquet fees	448.00
Total Receipts	<u>33,482.84</u>
Total Cash Available	<u>\$50,859.95</u>
Disbursements:	
Printing and publications	\$15,848.02
Visiting scientist program	4,360.88
Annual meeting	2,817.24
Tennessee Junior Academy of Science	2,695.51
Treasurer's office expense	1,662.00
Board Meeting	1,361.73
Research grants	1,000.00
Collegiate division	597.10
Secretary's office expense	412.42
Audit fee	165.00
Total Disbursements	<u>30,919.90</u>
Cash Balance, June 30, 1985	<u>\$19,940.05</u>
Receipts	\$33,482.84
Disbursements	<u>30,919.90</u>
Cash increase	2,562.94
Cash Balance, July 1, 1984	<u>17,377.11</u>
Cash Balance, July 30, 1985	<u>\$19,940.05</u>

TENNESSEE ACADEMY OF SCIENCE NEW MEMBERS 1984-85

All	Teresa M.	Johnson	Richard F.
Andrews	Hollings T.	Kung	Hsiang-Te
Bailey	Matthew	Leslie	Carol F.
Bryan	Danny L.	Mulderink	Delores
Denton	Gregory M.	Nan	Chiou
Despard	Thomas L.	Nyssen	G.A.
Due	Ava Denise	Prehn	Margaret
Dunn	Michael E.	Rucker	Richard A.
Harness	Victor R.	Scott	T. Gorden
Harris	David A.	Skeen	James N.
Holcomb	Laura D.	Stanfield	Edward S.
Holdeman	Jonas T.	Thomas	Ronald M.
Hribar	Lawrence J.	Tinney	Susan K.
Hulet, Jr.	Lester D.	Webb	Bryon J.