

# THE OKLAHOMA ACADEMY OF SCIENCE: A HISTORY

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## ORGANIZATION

The Oklahoma Academy of Science was organized in 1909 when the State and its educational institutions were less than 20 years old. The Legislature had established the University of Oklahoma (OU) at Norman, the A & M College at Stillwater (now OSU), and six teachers colleges at Ada, Alva, Durant, Edmond, Tahlequah, and Weatherford all in 1890. A junior college, Northern Oklahoma College, was established at Tonkawa in 1901, a medical school in Norman in 1910 (which moved to Oklahoma City in 1928), and a women's college in Chickasha in 1908.

The organizational meeting of the Academy was led by Dr. H. H. Lane, Head of the Department of Zoology at OU. Twenty representatives met in two days' discussion in Oklahoma City concerning the need for an Academy of Science to bring together the scientists of the state periodically to exchange ideas. The plan was for Oklahoma scientists to meet once a year to present and listen to scientific reports particularly related to science in the State. A cadre of officers was elected to plan and execute future meetings. Lane was the first president. The first meeting was held in 1910 in Norman.

The Academy usually meets annually in the fall for presentation of scientific reports at a technical meeting. There are both fall and spring field meetings to observe first-hand the natural beauties of the state and its scientific diversity.

It was recognized that interest group sections were required because of the increase in the number of members and of papers presented. The following is a list of sections with dates of permanent establishment.

- Section A: Biological Sciences, 1926
- Subsections: Botany, Biology, and Physiology
- Section B: Geology and Geography, 1926
- Section C: Physical Sciences, 1926
- Section D: Social Sciences, 1925
- Section E: Science Education, 1949
- Section F: Geography (split), 1952
- Section G: Conservation, *then* Wildlife Conservation and *now* Fish and Wildlife Conservation, 1955, 1983, & 1992
- Section H: Microbiology, 1962
- Section I: Engineering Sciences, 1963
- Section J: Biochemistry-Biophysics *now* Biochemistry, Biophysics, and Molecular Biology, 1964
- Section K: Electron Microscopy *now* Microscopy, 1978, 1994
- (Section L: Physiological Science, 1978-1980)
- (Section M: Oklahoma Junior Academy of Science, 1980-1986)
- Section L: Mathematics, Computer Science and Statistics, 1984

- Section M: Environmental Science *now* Environmental Science and Planning, 1987, 1993
- Section N: Biomedical Sciences, 1992

In 1947 the Academy recognized the need for more continuity in leadership. The office of Permanent Secretary was established, patterned after a similar one in the AAAS, with the term of office to be six years. In 1971 the office of Permanent Secretary was changed to that of Executive Secretary/Treasurer. The office of Secretary-Treasurer was dropped and that of Recording Secretary was created, with the duties of keeping minutes of meetings.

In 1935, in recognition of needs for service to high school teachers and students, a High School Relations Committee was created. This committee and the student organizations it created and fostered are discussed later.

The constitution was revised in 1987 to incorporate clarifications. The tenure of the elected officers was changed to two years to increase stability and continuity in the governance of the Academy. A Fall Field Meeting was initiated by Richard Couch of ORU in 1981.

## PUBLICATIONS

Up to 1921 the Academy published only the meeting program. In that year Volume 1 of the *Proceedings* was published, and succeeding volumes have appeared annually, except for the three war years. The early volumes published some papers that had been presented at earlier Academy meetings but many such papers appeared elsewhere. Volume 1 (1921) also contained the Constitution and showed an affiliation with the AAAS since 1910. In the same volume, C. W. Shannon described the organization of the Academy in 1909, where it had met, and the objectives of the Academy. He also pointed out that in 1915 incorporation was asked of the State Legislature, and while this was denied because certain legislators feared this would lead to a request for financial support, a charter was issued. The Academy was granted corporate status July 8, 1913 with reinstatement occurring August 8, 1959.

The cost of publication of the *Proceedings* in early years was borne by OU. This continued until 1930 when, because of scarcity of funds, the support was discontinued. Since then the cost of publication has been borne by the Academy.

In its early days the *Proceedings* of the Academy was quite liberal in acceptance of manuscripts for publication. Thus there are many short notes of a multitude of observations made by members. While this has resulted in the *Proceedings* being thought of by many as unsophisticated, overall the records presented here form a body of history about Oklahoma not existing elsewhere. Now the *Proceedings* papers are peer reviewed with requests for additional data and revision being common for most manuscripts and rejection occurring when the reviewers' questions are not satisfactorily answered.

In 1970 the Academy began a new publication. Symposia on topics of major interest and importance to the State have been organized and presented at the annual meetings of the Academy. The papers so presented are edited by special committees and published in the *Annals of the Oklahoma Academy of Science*. These Symposia and the *Annals* have been published as follows:

Annals Number	Date	Title	Editor	Based on meeting
1	1970	Cell and Tissue Culture in Biology and Medicine	Paul F. Kruse, Jr., NF	1969 at CSC
2	1971	Environmental Aspects of Geology in Engineering	W. D. Rose, OGS	1970 at OSU
3	1973	Radiation Science	George Gorin, OSU	1972 at SEOSU
4	1974	Recent Advances in Biochemical Pathology	N. N. Durham, OSU and D. E. Kizer, NF	1973 at OCU

5	1976	Oklahoma Reservoir Resources	L. G. Hill, OU and R. C. Summerfelt, OSU	1974 at SEOSU
6	1976	Grasses and Grasslands of Oklahoma	J. R. Estes, OU and R. J. Tyrl, OSU	1976 at NWOSU

In 1995 editor-in-chief Franklin Leach and electronic editor Jerry M Merz established a Home-page for the Oklahoma Academy of Science on the world wide web (net). Full details can be obtained from *Proc. Okla Acad. Sci.*, **75**, iv-vi (1995). The address of the site is: <http://oas.uco.edu>. Of course if you are reading this electronic version of the history you have already found the site. At the time our Home Page was established only three other state academies were listed on the AAAS Home Page (California Academy of Science, Chicago Academy of Science, and Kansas Academy of Science. The number has grown to 11 by July 1996.

### **THE OKLAHOMA COLLEGIATE ACADEMY OF SCIENCE**

The Oklahoma Academy of Science served as an administrator for the state's Science and Mathematics Education grant supported by NSF. The Oklahoma Collegiate Academy of Science's history is recorded in a separate file on web site.

### **THE OKLAHOMA JUNIOR ACADEMY OF SCIENCE**

The name "Oklahoma Junior Academy of Science" has represented two clearly separate organizations, different in goals and outcomes.

#### **The First Period, 1936-1946**

In 1935, Edith R. Force, a Tulsa high school teacher, became Chairman of the new High School Relations Committee of the Academy. An "Association of Science Students of the Oklahoma Academy of Science" was formed. In 1937, Miss Force separated her "Association of Science Students" from the Academy, and announced the formation of the Oklahoma Junior Academy of Science, which joined the nationwide junior academy movement.

The state Junior Academy met yearly, the meeting including exhibit competition for science clubs, speakers, science demonstrations, and nature walks. Miss Force obtained an invitation from OAMC to hold the 1938 meeting on that campus at the same time the Senior Academy was meeting there.

In 1939, Miss Force was selected to participate in a teacher exchange program with England. Without her leadership and in the face of the war threat, enthusiasm for the Junior Academy waned. During the World War II years the program was halted. There was little interest in the Senior Academy in reviving the OJAS and, without leadership and financial support, it died in 1946.

#### **The Second Period, 1957-present**

The idea of an Oklahoma Junior Academy of Science was resurrected in the junior academy movement spawned in the wake of "Sputnik". In January, 1958, representatives from 10 organizations met on the OSU campus and the OJAS was reborn.

The new OJAS was quite different from the earlier version. Operating through an Advisory Committee composed of university faculty members, field scientists, and high school teachers, its purpose was to stimulate and challenge capable high school students by rewarding excellence in research efforts. Membership required conducting a research project and reporting it in writing to a screening committee of professional scientists. Invitation to join the Junior Academy was extended to students whose papers showed originality, sound research design, valid and acceptable conclusions, and good style. Selected students were invited to present their papers at an annual state meeting and such papers were printed in a *Transactions of the Oklahoma Junior Academy of Science*.

In February, 1957, a national conference on Junior Academies of Science was sponsored by the AAAS and the Oak Ridge Institute of Nuclear Studies at the Navy Pier in Chicago, to stimulate science endeavors among high school students through junior academies. Dr. Robert Fite, OSU, attended and returned to become Chairman of the OJAS Advisory Committee and to serve as statewide coordinator/director. OSU was host for annual meetings and provided support through Fite's office as Director of Arts and Sciences Extension. Without this considerable aid, the program might never have succeeded.

At the first annual meeting in May, 1958, 25 students were selected for membership and their papers appeared in Volume 1 of *Transactions of the Oklahoma Junior Academy of Science*. For several years, the meetings were held at OSU, with increased student participation and sophistication and scope of research projects.

In 1960 Dr. Fite obtained a NSF grant for the operation of the OJAS program. Sixty-one students participated and copies of the *Transactions* were made available to school libraries and participants across the state. The AAAS, through the Oklahoma Academy of Science, provided funds for small research grant awards to help students purchase needed supplies and equipment.

Several events then changed the focus of the Junior Academy from the "membership as a reward" concept toward an academic competition. The first was the formation in 1962 of the National Junior Academy of Science under AAAS sponsorship. Participating states were allowed 2 student representatives to present papers at the annual AJAS - AAAS national meetings so the papers had to be graded and the two best selected. Added impetus for such rating of papers came with the development of a National Youth Science Camp in West Virginia in 1963. Delegates from Oklahoma were selected by the OJAS at the direction of the Governor of Oklahoma.

In 1964 a study revealed that most of the superior students identified by the OJAS had chosen to attend colleges and universities outside Oklahoma (1). It was suggested that scholarships might induce some of these bright students to stay in Oklahoma. Two \$200 scholarships were awarded in 1964 and the number increased to a maximum of six in 1968. The college scholarships could be used only in Oklahoma institutions and any unused funds reverted to the Academy for later use.

The NSF support of junior academies dwindled and its travel support for the students selected to present papers at the National Junior Academy of Science was discontinued. Civic groups and individuals provided travel funds for many of these students. Financial problems increased, however, and in 1964 the OJAS was able to publish only a few papers in full and brief abstracts of the others in a special section of *Proceedings of the Oklahoma Academy of Science* (2). In 1965 the separate *Transactions* of the OJAS was revived, but from 1966 to 1970, the selected papers and abstracts were printed in the *Proceedings*.

The initial plan of rewarding excellence in high school science students with membership in an exclusive society and publication of members' papers in the *Transactions* had now evolved into a competition for trips, scholarships, and publication privileges. Although certificates of participation were still awarded to all state entrants, the honor of membership in a select organization was clearly overshadowed by the competition for prizes. In effect, the group selected for honor became smaller still.

From 1970 to 1972, annual meetings were held but no *Transactions* were printed and in 1971, the NSF discontinued all support of the Junior Academy program. In 1973 the Noble Foundation took over publication of the *Transactions*. The 1973 volume of this new publication contained proceedings and selected papers from the 1970, 1971 and 1972 annual meetings. Only winning papers were published; all others were listed by title only. Solving the publication problem eased the financial crisis. Industrial and foundation gifts allowed the continuation of a program of meetings with less emphasis on scholarships and prizes.

In 1974, Dr. R. D. Dick, SWOSU, assumed the State Directorship. For the first time since its rebirth, the Junior Academy held its annual meeting on a campus other than that of OSU.

Dr. R. C. Jones of SWOSU acted as State Director in 1975. No scholarships were awarded and only winning papers were published in the *Transactions*. The program continued under the Directorship of Dr. G. E. Castleberry, SWOSU, at a minimum level in 1976, but with two \$200 cash awards for outstanding papers.

Dr. Dick again served as State Director in 1977. Negotiations were begun to form an alliance with the Oklahoma Science and Engineering Fair, Inc., and a committee composed of Dr. Don Kellogg, Dr. Bud Patterson, and Dr. Dick was named to solicit endowment funds. In 1977 a new organization, the Oklahoma Junior Academy of Science and Engineering, was established to handle contributions from industries and foundations.

In 1977, the first joint meeting between the Oklahoma Science and Engineering Fair and the OJAS was held at ECOSU. The two organizations had produced an information booklet announcing the rules for student participation. At this meeting, two \$200 scholarships and two \$200 stipend awards were presented. For the first time in many years, the travel and other expenses of OJAS judges were paid. The OJAS now abandoned the scholarship program and instituted cash awards in its place.

The State Legislature, for the first time, appropriated operating funds for the OJAS and State Science Fair programs in 1977-78. The budget, \$6,500, permitted the hiring of secretarial help for the State Director as well as funding the trips of winning students, their sponsoring teachers, and the OJAS State Director to the AAAS meeting, and payment of expenses of state OJAS judges. The number of cash awards increased to four at \$200 and two at \$100. However, the responsibilities for communications, coordinating the state meeting, securing judges, arranging for publishing the *Transactions*, and planning and chaperoning the AAAS trip for the selected students all fell on the unpaid State Director.

In 1978-79, Dr. D. R. Krahn, SWOSU, became State Director. State funding of \$7,500 and the Noble Foundation's continued publication of the *Transactions* now relieved the financial stress on OJAS Newsletters to State science teachers were reinstated in 1978 and in the fall of 1979 several workshops on research techniques and science fair and OJAS programs were held. Spring meetings in 1979 and 1980 were held at ECOSU and selection of AAAS and National Youth Science Camp delegates and awarding of cash prizes of various amounts were continued. Selected papers from the meetings were printed in the *Transactions*.

Since a survey had shown that many participating high school teachers and members of the Oklahoma Academy of Science believed that the OJAS should become a part of the Academy, Dr. Krahn and others in 1980 petitioned the Academy to admit the OJAS as a new Section. This was approved. The last edition of the *Transactions* was published with Noble Foundation Support in 1995.

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## REFERENCES

1. Jones, C.F., The Effectiveness of the Oklahoma Junior Academy of Science in the Early Identification of Scholars, *Proc. Okla. Acad.Sci.*, **44**, 181-183 (1964).
2. History of The Oklahoma JUNIOR ACADEMY OF SCIENCE", *Trans. Okla. Junior Acad. Sci.* 8: 4 (1965).
3. All volumes of the *Proc. Okla. Acad. Sci.* were consulted to check officers.