

1966

News and Notes

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News and Notes

MAS Dates to Remember

- September 17, 18, 1966 Fall Field Trip
October 6, 7, 8, 1966 . . .NSTA Regional Conference at the Hilton in St. Paul
October 21, 1966MSTA State Meeting, Cooper High School, New Hope
November 19, 1966MAS Board Meeting
March 25, 1967 and
April 1, 1967Regional Science Fairs
April 8, 1967Annual Spring Conference of the Minnesota Teachers of Mathematics, Cooper High School, New Hope
April 14-15, 1967Annual Meeting, State Science Fair and Paper Symposium. Carleton College

Annual Meeting Review

The 255 senior Academy members who registered at the Annual Meeting indicated 22 areas of interest and represented 59 secondary schools, 15 industries, and 28 colleges in Minnesota. Two hundred fifty-five Junior and Senior Academy members enjoyed the banquet and slide presentation presented by Dr. Jocelyn Gill of the National Aeronautics and Space Administration.

The mail ballot elected Dr. Paul Germann, St. Thomas College, President-elect; Dr. L. D. Frenzel, Jr., Macalister College, and Curtis Motchenbacher, Honeywell, Academy directors for four years; Dr. William Reynolds, General Mills, director for one year; and Charles Anderson, Norwood, as Director of the Junior Academy of Science.

Mr. Edmund Bray, Minnemast, will assume the Academy presidency July 1 by virtue of his election as president-elect prior to the Gustavus meeting in 1965.

The main items of business at the business meeting were the coming revision of the Articles of Incorporation and the subsequent proposed dues increase. The increased program and publication costs have caused pressure on the Academy budget, and it is felt that a portion of this expense should be underwritten by a dues increase. The proposed dues increase and Articles of Incorporation revision will receive special attention at a Business Meeting to be held in connection with the Fall Field Trip on September 17, 1966.

The Academy has the general session speakers on tape which may be obtained from the Academy office.

Biographical Data

PAUL GERMANN. Professor and Chairman in the Department of Biology, St. Thomas College, where he has been since 1946. He was born in 1916 and raised in Illinois. He received the B.S. degree at St. Mary's College, 1937, and after five years of highschool teaching, the M.S. degree at De Paul University in 1942. After one post-service year of high-school teaching, he earned the Ph.D. degree at the University of Minnesota in 1953 in botany. He is a member of Sigma Xi, AAAS, AIBS, AAUP, and Ecological Society. His special interests are in plant morphology, activity of cambium, and growth layers.

L. D. FRENZEL, JR. Associate Professor of biology at Macalister College since 1957. He was born in 1920, and raised in Texas and Minnesota. Following service in the armed forces, he received the B.S. in 1947 and the M.S. in 1948 from North Texas University. He was a biology teacher at Ely Jr. College until 1954, and in 1957 was awarded the Ph.D. degree in wildlife at the University of Minnesota. He is a member of Sigma Xi, the Minnesota Ornithological Union, AIBS, American Society of Mammalogists, and the Wildlife Society; he is past chairman of MAS committees on scholarship and natural preservation. His special interest is in animal ecology.

CURT M. MOTCHENBACHER. Electronics consultant at Honeywell Research Center since 1956. Born in 1931, he was raised in South Dakota and Minnesota. He received the B.S. degree in electrical engineering at South Dakota State University in 1953, and spent two years in the armed forces. He is a member of Delta Sigma Tau and IEEE, and a past president of Honeywell Engineers Club. He was the originator and coordinator of engineer-scientist-for-a-day program (1959-1963). He is on the Science Advisory Committee for the State Science Consultant. His special interests are in low-noise amplifier design, on which he has written a manual, and in paleontology.

WILLIAM B. REYNOLDS. Vice President for Research and Engineering at General Mills, Inc., since 1959. He was born in 1913 and raised in Iowa. He received the A.B. degree at Cornell College in 1934, and the Ph.D. degree in chemistry at the University of Chicago in 1936. For three years he was a research chemist at E. I. Dupont de Nemours Co., and for two years at the Interchemical Corporation. For one year he was an instructor at the University of Chicago, and then, for four years, associate professor at the University of Cincinnati. During 13 years with the Phillips Petroleum Co., he was successively the supervisor of synthetic rubber research, asst. director of research, and director of research. He is a member of Sigma Xi, Phi Beta Kappa, Tau Kappa Alpha, American Chemical Society, Society of Plastics Engineers, American Association of Cereal Chemists, and Cornell College Board. Among his special interests are the Upper Midwest Research and Development Council and the Industry-Education Board, of which he has been chairman.

CHARLES W. ANDERSON. Biology teacher at Norwood-Little America since 1953. Born in 1927, he was raised in Minnesota. He received the B.A. degree in 1950 from Gustavus Adolphus, and the M.S. degree in 1959 (on sabbatical) from the University of Wisconsin, majoring in chemistry and biology. He is a research participation fellow with special interests in blood groups of humans and cattle. For two years, he was Secretary-Treasurer

of the Junior Academy of Science, and is Program Chairman of Minnesota Science Teachers Association.

Dr. Jocelyn Gill, National Aeronautics and Space Administration, presented the banquet address with slides at the 34th Annual Meeting of the Minnesota Academy of Science, April 1966, held at Macalester College.



**MAS Thanks Macalester College
and Personnel for Successful Meeting**

May 16, 1966

Dr. Harvey M. Rice, President
Macalester College
St. Paul, Minnesota

Dear Dr. Rice:

Now that the follow-up is complete and the post mortems are in, we are able to take an objective look at the 1966 Academy meeting held at Macalester College.

Thank you very much for extending to the Academy the invitation to use your splendid facilities for our meeting. We have received nothing but compliments in regard to your facilities and the spirit of cooperation manifested by the several members of your staff who were very active in planning and carrying out the many details which are necessary in a meeting of this type.

I would like to pay special recognition to several of your staff:

Dr. Lucius Garvin	Administration Representative
Dr. James Smail	General Chairman
Dr. Wayne Wolsey	Co-chairman
Mr. Ralph Anderson	Administration Representative
Dr. Chester H. Shiflett	Chairman, Division Natural Sciences
Dr. L. D. Frenzel, Jr.	Invitation Arrangements
Mr. Ivan C. Burg	News Media
Mr. Robert A. Bauman	Audio-visual
Dr. Henry Lepp	Judges and Earth Science Section Chairman
Dr. Sherman Schultz	Planetarium
Mr. William Van Dyke	Food Service
Dr. Albert Rabenstein	Hosts
Dr. Sung Ku Kim	Registration and Information
Dr. Edwin J. Robinson	Welcome, Science Education Section

Dr. Russell B. Hastings	Physics Coordination
Dr. Hildegard B. Johnson	Geography Coordination
Dr. Ray Mikkelson	Commercial Exhibitors
Dr. Eddie P. Hill	Audio-visual
Dr. John Scott	Meal Functions
Dr. Charles P. Green	Promotion

Undoubtedly these people depended on many others, but I am aware of much service on the part of those listed.

The Academy is indeed thankful. Should we ever be in a position to assist you, please do not hesitate to ask. Thank you again.

Sincerely,
Walter G. Larson
Executive Director

Additions to Grants

Two N.S.F. grant Amendments have been received by the Minnesota National Laboratory to support the completion of curriculum projects.

Amendment No. 4, October 18, 1965, will support "The Study of School Mathematics Curricula—Correspondence Course" program with additional funds totaling \$44,000.00. This program is under the direction of Dr. Wells Hively.

Amendment No. 5, March 10, 1966, will support "The Study of School Mathematics Curricula—The Five-State Program" with additional funds of \$90,650.00. This program is under the direction of Dr. James J. Ryan.

The Minnesota National Laboratory is a curriculum center sponsored jointly by the Minnesota State Department of Education, Farley Bright, coordinator; the University of Minnesota, Dr. William Gardner, Acting Director; and the Minnesota Academy of Science which serves as fiscal agent for several of the laboratory's grants.

Supporting Members

Since the last issue of the Journal, 21 more companies have made supporting membership contributions to the Academy totaling \$10,600,000.

They include the Northwest Paper Foundation, Northwestern Bell Telephone Co., Three-M Company, Archer Daniels Midland Co., Prudential Insurance Co., Lewis and Annie Paper Foundation, Great Northern Railway Foundation, Minneapolis Gas Co., Northern States Power Co., Ottetail Power Co., F. H. Peavey Group Foundation, Economics Laboratory, International Milling Co., m. h. Baker Co., Ellerbe and Co., Renown Foundation, and Univac-Sperry Rand, Inc., Northwestern National Life Insurance Co., General Mills Co., Ford Motor Co., and Honeywell, Inc.

A complete list of supporting members is published in this issue. We depend on these contributions to help sponsor the many programs of the Academy.

New Sections of the Academy

At its February Board Meeting, the Academy added four new sections, bringing the section total to sixteen. The new sections are, Medical Science, Agricultural Science & Technology, Engineering and Industrial Science, and Mathematics.

It is the hope of the Board that these sections will be of service in providing an outlet for student and teacher interest of the members of the Academy in these and related fields.

The organizational structure for the new sections will be completed in order to provide a section program at the Annual Meeting at Carleton College in April of 1967.

Minnesota Winner of NSF— NATO Postdoctoral Fellowship

Dr. Edward J. Cushing was born and raised in St. Louis, Missouri, and received an A.B. Degree from Washington University in that city.

Dr. Cushing came to the University of Minnesota in 1956 and received his Ph.D. Degree in 1963. At North Wales, Dr. Cushing will study statistics, and Quantitative Plant Ecology with special attention to Pollen Analysis. He will be studying under Dr. Greig-Smith, a well known scientist in the area of Plant Sociology.

His family accompanied Dr. Cushing in June and they will return to Roseville in March, 1967.

3M Company News



The 3M Company's Scotch-brite Products department has announced the promotion of Clyde I. Hause to technical manager.

He has been with 3M since 1950 and most recently was technical manager for the structural adhesives section, Adhesives, Coatings and Sealers division.

Hause received his B.S. degree in chemical engineering from the University of Illinois. He is a member of the American Chemical society, American Association for the Advancement of Science, Minnesota Academy of Science, and the American Society of Testing and Materials.

Addenda

Add to the list of MAS members who are active in the affairs of AAAS, Agnes Hansen, Associate Professor (ret.) of Botany, University of Minnesota. As National President of Sigma Delta Epsilon, Dr. Hansen served on the AAAS Council at the Conference in Berkeley, Calif.,

1965, and will serve again in 1966 at the AAAS Conference in Washington, D.C. Professor Hansen is well known for her studies of seasonal pollen counts.

SDE is a society of graduate women and is affiliated with AAAS. Many SDE members are fellows of AAAS. The organization is also an affiliate of MAS. Membership in the state is about one hundred.

New Regional Section of the Minnesota Science Teachers Association

The science teachers teaching in the counties of Stevens, Grant, Traverse, Big Stone, and Wilkins have organized the West Central Science Teachers Association. The steering committee chosen at a survey of interest meeting, featuring President Frank Noice of the Academy, at Wheaton on March 30, 1966, were, Dan Rasmussen, Beardsley; Arnold Hollen, Chokio; Daryl Vergin, Wheaton; Sanford Emery, Wheaton; and John Anderson, Morris.

The steering committee prepared a constitution for presentation at an organizational meeting which was held at Chokio High School on February 10, 1966. A program was presented by Willmar Junior College Staff members, Ben Thoma, John Almquist, and Paul Lieneau.

Officers elected were:

President—Arnold Hollen, Chokio
Vice President—Darrell Richter, Wheaton
Secretary—John Anderson, Morris
Director—Daryl Vergin, Wheaton
Director—Mr. Van Swol, Elbow Lake

The Academy congratulates this new organization and hopes to be of assistance in carrying out its program.

Conservation Committee Seeks Information

The Education Committee of the Minnesota Conservation Federation is trying to promote conservation activities. In order to do so, the Committee would like to hear about and perhaps meet with individuals in the teaching profession who have done, or are doing, something special in the conservation field.

If you know someone in this category, you are requested to send his name and a short description of his project to the Education Committee at the Minnesota Conservation Federation office, 4313 Shady Oak Road, Hopkins.

New Publications National Science Foundation

The legal aspects of weather modification are covered in a new publication just issued by the National Science Foundation. Entitled *Weather Modification Law, Controls, Operations*, the publication gives the results of questionnaires sent out by the National Science Foundation's Special Commission of Weather Modification. The publication may be obtained without charge by individuals who write on their institution letterheads to Publi-

cations Office, National Science Foundation, Washington, D.C. 20550. Requests should give both the title of the publication and its number, NSF 66-7.

The *Antarctic Journal of the United States*, official information organ of United States programs in the world's southernmost continent, was recently issued for the first time. The bimonthly journal is a unique example of cooperation among agencies and is published by the National Science Foundation with the assistance of the Department of Defense. The first issue defined the scope and purpose of the journal and featured an article by Joseph J. Sisco, Assistant Secretary of State for International Organization Affairs, which outlined the present United States activities in Antarctica and the governmental arrangements for carrying out the national program. Mr. Sisco is Chairman of the Antarctic Policy Group that was established by President Johnson on May 1, 1965.

Also included in the first issue were an organizational history of United States activity in Antarctica from 1954 through 1965, a chronology of U.S. Antarctic operations from July 1 through November 30, 1965, several short items including international aspects of the Antarctic program, a map of U.S. Antarctic Research Program activities, and photographs.

The journal combines and replaces the *Bulletin of the U.S. Antarctic Projects Officer*, formerly published by the Department of Defense, and the *Antarctic Report of the National Science Foundation*.

A comprehensive report of scientific and engineering manpower in Communist China in the years since the establishment of the Communist regime in 1949, *Scientific and Engineering Manpower in Communist China, 1949-1963*, by Dr. Chu-yuan Cheng of the University of Michigan, has also been released by the National Science Foundation. The study leading to the publication was conducted under a grant from the Foundation by Dr. Cheng while he was Research Professor in the Institute of Far Eastern Studies, Seton Hall University. The study investigated the training, employment, and utilization of scientific and engineering manpower, examined the effects of rigid government controls in scientific areas, explored Sino-Soviet cooperation in the training of scientific and engineering manpower, and assessed the influence of Western-trained scientists and engineers.

In addition, the report covers topics that have received very little treatment previously, such as the position of woman scientists and the role of social scientists. It also developed information on the changing policies of the Chinese Communist Party and on prominent aspects of foreign relations and other matters relevant to the development of scientific and engineering manpower.

Copies of the report may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402, for \$2.00 each.

1966 NSTA Northern Regional Conference

The 1966 NSTA Northern Regional Conference will be held at the new St. Paul Hilton Hotel on October 6,

7, and 8, 1966. The theme of the Conference is the evaluation of the impact of the new science teaching approaches. Among the speakers will be Dr. Albert Piltz, Science Specialist, U. S. Office of Education; Professor Edith M. Selberg, Measurement of science concepts, Colorado State College, Peter S. Howell, Secondary school science project, Princeton, New Jersey, and Joseph Davis, Science curriculum improvement study, Berkeley, California.

The planning committee for the Conference is made up of the following persons:

General Chairman:	Larry Nason F. B. Kellogg H.S. 2420 Sylvan St. St. Paul, Minn. 55117 Area Code: 612 Tel. 484-7201	2789 Galtier St. Paul, Minn. 55113 Area Code: 612 Tel. 484-1185
Membership Junior College Program:	John Almquist Willmar Community College Willmar, Minnesota	340 North 17th St. Willmar, Minn. Tel. 235-2602
Program Chairman:	Arthur Beisang Alexander Ramsey H.S. 1261 Highway #36 St. Paul 13, Minn. Tel. 633-3821	2263 Dellwood St. Paul, Minn. 55113 Tel. 631-1667
AETS NSSA:	Clarence H. Boeck Prof. of Education University of Minnesota 370 Peik Hall Minneapolis Minn. 55455 Tel. 373-3305	5101 Ewing Ave. So. Minneapolis 55410 Tel. 926-1205
Rooms and Facilities:	Robert Collins State Department of Education Centennial Building St. Paul Minnesota 55101 Tel. 221-3367	Rt. 6, Box 702 Excelsior, Minn. Tel. 474-8214
Chemistry:	Denneth Dvergsten Frank B. Kellogg H.S. 2420 Sylvan St. St. Paul 55117 Tel. 484-7201	1717 Holton Ave. St. Paul 55113 Tel. 646-6019
Registration:	Merill C. Fellger Minnetonka Public Schools 17000 Lake St. Ext. Minnetonka Minn. 55345 Tel. 935-8602	6790 175th Ave. W. Eden Prairie, Minn. 55345 Tel. 938-4560
Physics:	Lyle J. Haugen Burnsville H.S. Burnsville Minn. Tel. 890-4040	Oak Lane Burnsville, Minn. Tel. 890-1957
Registration:	John R. Heitkamp Minnetonka East Jr. H.S. 17000 Lake St. Ext. Minnetonka Minn. Tel. WE 5-8601	Rt. 4, Box 672 Mound, Minn. Tel. 472-3263
Exhibits:	Edward Landin The Science Museum 30 East Tenth Street St. Paul 55101 Tel. 224-3889	880 Fairmount Ave. St. Paul, Minn. 55105 Tel. 226-1805

Registration:	Warren Nelson Minnetonka East Jr. H.S. 17000 Lake St. Ext. Minnetonka Minn. Tel. WE 5-8601	15705 C Second Ave. N. Wayzata, Minn. GR 3-8798
Junior High Sections:	Jerry Schliep Willmar Jr. H.S. 617 West Fifth St. Willmar, Minn. Tel. 235-1252	1215 West 11th St. Rt. #3 Willmar, Minn. Tel. 235-0520
Elementary:	Noreen Teachout Valley View School Bloomington, Minn.	2316 West 111th St. Minneapolis, Minn. 55431 Tel. 888-8164
Biology	Dr. Harry Geohring Biology Department St. Cloud State College St. Cloud, Minnesota	
Hospitality:	Eraine Schmit Highland Senior H.S. St. Paul, Minnesota	
Tours and Field Trips:	Ted Molitor Alexander Ramsey H.S. St. Paul, Minnesota 55113	
Membership:	Everette Schaefer Chelsca Heights Elementary School St. Paul, Minnesota Tel. 488-6787	

**New Collegiate Chapter of the Minnesota Academy
Is Formed at the University of Minnesota—
Morris**

On May 3, the Executive Director of the Academy visited the Morris campus of the University of Minnesota and discussed the advantages of Academy affiliation for the science-orientated students. A nucleus of about twenty interested students decided to form a collegiate chapter and elected the following officers:

President—Michael Mistelsky; Vice President—Daniel Bahr; Secretary-Treasurer—Alan Wahl; Faculty advisors—Dr. Robinson Abbot and Gerald Brenden.

Minnesota Junior Academy of Science

As of May 1, 1966, the Minnesota Junior Academy of Science numbered 64 chapters with a total membership of 1,426 high school students. Twenty five schools active last year dropped their support this year, whereas twenty schools not active last year joined in support of the program this year. Listed by region are the chapters active during the school year 1965-1966 and the membership for each.

CENTRAL REGION:	Members
Aitkin Public School	15
Chisago City Public School	20
Cyrus Independent Sch. Dist. 611	21
Crosby-Ironton School	25
Kerkhoven H.S.	12
Lindstrom-Center City School	23
Little Falls H. S.	9
Saint Francis H.S.	17

	Members
Cathedral H.S.	13
Technical H.S.	9
NORTHEAST REGION:	
Aurora-Hoyt Lake H.S.	18
Barnum H.S.	7
Chisholm Junior High	31
Cloquet Senior High	12
Denfeld H.S.	13
Kelly H.S.	34
NORTHERN REGION:	
Bagley H.S.	106
Bemidji H.S.	23
Grand Rapids Junior High	34
Pine River H.S.	20
Warren H.S.	8
Stephen Public School	15
SOUTHEAST REGION:	
Cannon Falls H.S.	10
Faribault H.S.	8
Saint Mary's Hall (Faribault)	18
Villa Maria Academy (Frontenac)	20
Goodhue H.S.	38
McKinley H.S. (Le Center)	10
Lewiston Public School	16
Marian H.S. (Owatonna)	10
Northfield Jr./Sr. High	18
Lourdes H.S. (Rochester)	53
Holy Trinity H.S. (Rollingstone)	21
St. Charles Consolidated	25
Cotter H.S. (Winona)	12
Winona Public School	20
SOUTHWEST REGION:	
Central Junior H.S. (Albert Lea)	62
Fulda H.S.	17
Central H.S. (Norwood)	17
St. Adrian H.S.	22
Sleepy Eye H.S.	16
Hutchinson H.S.	50
TWIN CITIES:	
Alexander Ramsey (St. Paul)	22
Archbishop Murray (St. Paul)	17
Ascension (Mpls.)	20
Burnsville H.S.	12
Central Jr. H.S. (Mpls.)	17
Fairview Jr. H.S. (St. Paul)	11
Frank B. Kellogg Sr. (St. Paul)	16
Hastings Jr./Sr. High	74
Mound High	10
St. Agnes H.S. (St. Paul)	8
St. Anthony Village H.S.	16
St. Margaret's Academy (Mpls.)	40
Science Museum (St. Paul)	11
Sibley H.S. (West St. Paul)	8
Stillwater H.S.	20
Mounds View High (St. Paul)	28
WESTERN REGION:	
Washington Jr. H.S. (Fergus Falls)	29
Fergus Falls H. S.	45
Glyndon H.S.	13
Lake Park H.S.	10
Morris Jr. H.S.	32

State Science Fair News

One of the most popular of the more than 80 prizes awarded at the State Science Fair at Macalester College was the microscope won by James Marshall of Grand Rapids.

The microscope was made possible by the General Office Products Company of Minneapolis. Shown presenting the microscope to John Crocker, Field Secretary and Walt Larson, Executive Director, are Mr. Phil Mullen, Executive Vice President (left) and Ron Johnson (2nd left), sales representative.



Other concerns that provided special awards were, Field Enterprises (World Book Encyclopedia), Geology Award—University of Minnesota, Veterinary Medicine Award—Veterinary Medicine Women's Auxillary, West Virginia Science Camp promoted by the Minnesota State Department of Education, and Science Clubs of America sponsored by Science Service.

The Minnesota Commissioner of Education, Duane Mattheis, was the feature speaker at the 29th Annual Junior Academy of Science Awards Assembly on April 16th at Macalester College. He personally awarded the West Virginia Science Camp trip which is promoted by the State Department of Education in cooperation with the Academy.



National Trips (Participation) for J.A.S. Youth

The Navy cruise will take place this summer, and the cruise will be for five days, courtesy of the U.S. Navy.

The National Science Fair was May 11-15, 1966, at Dallas, Texas. John Crocker, Field Secretary, went with Mary Schilling, Northfield, and David Coleman, Duluth Denfeld.

Southeast region and southwest region also sent two students each. The students were:

(S.W.)

Georgianna Joos, Norwood—"Identification of Fe^{+2} and Fe^{+3} Ions by Gel Diffusion"

Michael Schmidt, Mankato—"Effect of Magnetism on the Behavior Patterns of the Fly"

(S.E.)

Gregory Bambenek, Winona—"Poikilothermy—Effects of Temperature on the Snapping Turtle"

John Degallier, Winona—"Foil Experiments in a Circular Wind Tunnel"

Of the six students from Minnesota, four received special recognition in the national competition:

Mary Schilling—Northfield

David Coleman—Duluth

Gregory Bambenek—Winona

John Degallier—Winona

The National Junior Science & Humanities Symposium sponsored by the U.S. Army and the U.S. Office of Education was held this year at Princeton, N.J. Richard Myshak, J.A.S. Director, accompanied our two participants to this event, Luther Hanson, Bagley, and David Bangabus, St. Cloud.

West Virginia sponsored the Fourth Annual National Youth Science Camp in 1966. Two boys from the 1966 high school graduating class were selected from each state to attend the camp from June 26 through July 17, 1966. Attending from Minnesota were Jerry Johnson, Kerkhoven, and James Kangel, Winona.

The fine facilities at Camp Pochahontas, located in the beautiful Monongahela National Forest, thirteen miles from the National Radio Astronomy Observatory at Greenbank, were used.

The academic program included all fields of science and mathematics. Lectures were given by professional, governmental, industrial, and university scientists from all fields, including the professional staff at the National Radio Astronomy Observatory. Among the outstanding visitors to the camp in the past were Astronauts Scott Carpenter and Neil Armstrong.

Field trips and overnight hikes emphasized archeology, biology, botany, ecology, engineering, geology, ornithology, speleology, zoology, etc. In addition, there were approximately four one-half day visits to the National Radio Astronomy Observatory facilities.

The IBM Corporation placed an IBM 1620 electronic digital computer in the camp for the exclusive use of the campers and instruction was given in its use.

The recreational program included swimming, fishing, camp crafts, softball, volleyball, tennis, badminton, horseshoes, soccer, archery, marksmanship, shuffleboard, table tennis, track, photography, music, ham radio shack, etc.

All expenses, including travel to and from the camp, were paid by West Virginia. This program is co-sponsored with Bob Collins, Science Consultant for the State Department of Education.

The AAAS trip will be made next December 26-31 when Gary Hudson, St. Bernard's High School, St. Paul will go to Washington D.C. to present his research paper in a section meeting of the American Association for the Advancement of Science.

Letter of Appreciation From Mary Schilling

May 21, 1966

Mr. Frank M. Noice

President of the Minnesota Academy of Science

3100 38th Avenue South

Minneapolis, Minnesota

Dear Mr. Noice:

I want to thank you and everyone connected with the Minnesota Academy of Science for making my trip to the National Science Fair possible.



It was the most unique experience of my life. I met so many wonderful and exciting people—it really broadened my world!

I felt very privileged to be one of the representatives of Minnesota, and I hope that my performance brought honor to our state and to the Academy.

If there is ever anything that I can do to be of service to the Academy,

please don't hesitate to ask.

I will never be able to thank you enough!

Sincerely yours,
MARY SCHILLING

Mary certainly brought honor to Minnesota while at Dallas. She received the American Dental Association Certificate of Superior Achievement and will be their guest at their national convention in Dallas in November. She received the highest citation from the American Medical Association and will be their guest at their national convention. She was also one of four from Minnesota who received the fourth place, \$25.00 "Wishes Award."

Science Fair Statistics and Awards

- 7 Regional Science Fairs
- 1 State Science Fair
- 1,704 Exhibits in all regional fairs
- 255 Schools participated in all fairs
- 376 Teacher advisors to exhibitors
- 124 Exhibitors entered in State Science Fair
- 16 Gold Medals awarded at State Science Fair

RESEARCH PAPER PROGRAM

- 7 Regional research essay programs
- 1 State research essay program
- 144 Entries in all regional fairs
- 44 Schools represented
- 57 Teachers Advised students
- 43 Students presented at the State Science Youth Congress.

AWARDS

Junior High School Honors Awards—1966

Science Fair	Name	School
Fascination Book Awards		
35 7th Grade	Charles Norgord . . .	Grand Rapids Junior High School
63 7th Grade	Philip Hahnfeldt . . .	Hopkins North Junior High School
95 8th Grade	David Lindstrom . . .	Jefferson Junior High, Winona

Signet Books

53 9th Grade	Ed Hite	Grand Rapids Junior High School
102 9th Grade	Arvid Larson	Bagley High School

Third Award (Slide Rule)

103 9th Grade	William Rix	Hopkins North Junior High School
"Biocelli" Dry Cell or Fuel Cell"		

Second Award (Book of Popular Science)

37 7th Grade	Mark Thimsen, Jr	Hopkins North Junior High School
"Bioassay of Salt Toxicity to Fathead Minnows"		

First Award (World Book Encyclopedia)

49 8th Grade	Dan Rengstorf	Simley High School Inver Grove
"Experimentation with the Utilization of Vitamins D ₂ and D ₃ in Chick Embryos"		

PAPER PROGRAM

Signet Books

Honorable Mention	Earl Ready . . .	Capitol View Junior High, Roseville
Honorable Mention	Jean Doyle . . .	Alexander Ramsey, Roseville
Honorable Mention	Gerald Fong	Maple Junior H.S., No. St. Paul

Second Award (Microscope)

James Marshall	Grand Rapids Junior High School
"A Study of Genetic Mutations in Selected "F" Generation Plants Due to X-ray Radiation of Parent Stock"	

First Award (World Book Encyclopedia)

Robert Davis . . .	Capitol View Junior High School, Roseville
"Centrifugal Force, Gravity, and a Simple Pendulum"	

SENIOR HIGH SCHOOL HONORS AWARDS — 1966

Navy Cruiser Awards	Name	School
17 2nd Alternate	James Kangel	Winona High School
"Regular m-Dimensional Cubic and Tetrahedral Figures in Their n-Dimensional Equivalents"		
22 1st Alternate	Dan Oganovich . .	Chisholm High School
"Boba II—Mechanical Man"		
*18 Navy Cruiser	Robert Dowell	Grand Rapids High School
"The Effect of 'G' Forces on the Memory and Anatomy of a Rat"		

National Science Fair

*8 Mary Schilling	Northfield High School
"Radioactive I-131 Uptake in Animal Tissue—An Inquiry Using the Techniques of Histology and Autoradiography"	
*13 David Colman	Denfeld High School
"Polarographic Analysis"	

AAAS Award

*Gary Hudson	St. Bernard's
"The Research, Design and Development of an Arc-jet Engine and Its Applications"	

National Junior Science and Humanities Symposium Awards

- *Luther Hanson Bagley High School
"Sex Reversal in the Guppy Induced by the Sex Hormones"
- *David Bargabus St. Cloud
"An Electronic Speech Synthesizer"

West Virginia Centennial Awards

- *Jerry Johnson, Kerkhoven . . 1st Alt. Christopher Herringlake
Lindsham Center
- *James Kangel, Winona 2nd Alt. David Bargabus
St. Cloud Tech.

Special Awards

- ** Harvey Award—Outstanding Junior Academy of Science Chapter: Grand Rapids JHS.
- ** Outstanding Junior Academy of Science Chapter Award: James Sherwood.
- * National Trips—next page.
- ** Top Two Fair Awards.

George A. Macpherson Funds

Trustees—Disbursement Committee
Philip L. Ray, Edward G. Brown, Charles J. Curley
Administrator
Alvin W. Hilgedick, V.P.
First Trust Company of St. Paul

On June 3, 1963, a grant of \$3,600.00 was approved to the Minnesota Academy of Science for the school years 1964-65, 1965-66, and 1966-67. Twelve hundred dollars was to be used annually to provide four annual scholarships of \$300.00 each; two for undergraduate students and two for undergraduate students majoring in science or mathematics.

The final \$1,200.00 was forwarded to the Academy on December 1, 1965, to be used for the 1966 awards (1966-67 school year).

The current Academy-scholarship committee submits the following summary report covering the three years of the grant.

The students are all doing well with their college work and several have indicated that they would not have been able to have continued their education without this assistance.

Additional information would be provided by the Scholarship Committee if it is requested.

Respectfully submitted.

- Dr. Earl Alton, Augsburg, Chairman
- Dr. Marie Berg, Northwestern College
- Dr. William Britton, Bemidji State
- Mr. Raymond Dolan, Cloquet High School
- Brother Vincent, St. Mary's
- Mr. Harvey Westrum, Bloomington High School

**Clear Air—Clear Water—Unlimited
\$2,000 Essay Scholarship Contest**

One hundred ten seniors from fifty communities entered the 1965-66 contest.

A first place award of \$1,000.00 went to Rolf O. Peterson, Roosevelt High School, Minneapolis, Minnesota. A second place award of \$750.00 went to Barbara Hanson, Brycelyn High School, Brycelyn, Minnesota, and a third place award of \$250.00 went to Corinne Rychner, Wadena High School, Wadena, Minnesota.

Citations of Honorable Mention were received by, James Lewis, Jasper High School, Jasper, Minnesota; Daryl Lundgren, East High School, Duluth, Minnesota; and Pam Oas, East High School, Duluth, Minnesota.

Math Contest

The State Mathematics Contest has been sponsored for several years nationally by the Mathematical Association of America, Society of Actuaries, and Mu Alpha Theta. State winners are entered in national competition.

The contest is sponsored in Minnesota by the Twin Cities Actuarial Club, Minnesota Section of the Mathematical Association of America, the Minnesota Council of Teachers of Mathematics, and the Minnesota Academy of Science.

The eight \$50 U.S. Savings Bonds and the twenty-three \$25 U.S. Savings Bonds are made possible by Minnesota business and industries through their support of the Minnesota Academy of Science.

On March 10, 1966, close to 11,500 students in 210

Year	Student	Town	Class	HPR	Institution	Major
1964-65	Thomas Lewcock	Minneapolis	Soph.	3.4	University	Law
	John St. Martin	St. Paul	Soph.	3.6	St. Thomas	Physics
	Joseph LaBore	St. Paul	Jr.	2.96	Macalester	Physics
	George Podolsky	Minneapolis	Jr.	2.96	University	Chemistry
1965-66	John Binford	Robbinsdale	Fresh.	3.3	University	Mech./Eng.
	Virginia Toms	Hoyt Lakes	Fresh.	3.5	Macalester	Math.
	Paul D. Arneson	Fergus Falls	Soph.	3.495	University	Fish & Wildlife Management
	Bruce Barnum	Browndale	Soph.	2.67	Macalester	English
<i>(currently being awarded)</i>						
1966-67	Monica Maloney	Rochester			St. Teresa's	Math.
	Christine Johnson	Minneapolis			University	Chemistry
	Douglas Dalquist	Randall			Mich. State	Physics
	Nils Sandell, Jr.	Coon Rapids			University	Elect./Eng.

Minnesota schools participated in the annual National Mathematics Contest, which was sponsored by the Mathematical Association of America and the Society of Actuaries.

The basic national award consists of an award pin, which is given to the student with the highest score in each participating school. This year there were six schools in which there was a tie for first place. There was one student who placed first in his school for four successive years, two who placed first in three successive years and eight who placed first in two successive years. These eleven students are entitled to special national awards this year rather than the pin. Also the high ranking individual and team scores have been entered in the Region VII contest for consideration for additional awards. (Region VII consists of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Manitoba, and Saskatchewan.) Such awards are announced in the national summary which appears late in May.

The following tabulation gives the participation of Minnesota in the contest from 1962 to 1966.

Year	Number of Schools Participating	Number of Students Participating	Number of School Scores 120 or Greater	Number of Individual Scores 50 or Greater
1962	203	8,000	33	64
1963	215	9,700	25	29
1964	217	10,400	36	36
1965	230	11,800	36	46
1966	210	11,500	22	31

State awards of \$50.00 and \$25.00 United States Savings Bonds were made possible by Minnesota businessmen and industries through their support of the Minnesota Academy of Science. They were as follows:

Top Eight Contestants (\$50 U.S. Savings Bond)

Rank	Name and Address	School	Score
1	Mr. Christopher W. Gossett 4849 Oakland Avenue South Minneapolis, Minnesota 55417	Washburn H.S. Minneapolis	94.00
2	Mr. Richard M. Grise 14224 Woodhaven Road Minnetonka, Minnesota 55343	Hopkins H.S. Hopkins	75.50
3	Mr. Mark E. Kremen 4817 Morgan Avenue South Minneapolis Minn. 55409	Blake High School Hopkins	66.50
4	Mr. Henry A. Childers 10231 Zenith Lane South Bloomington, Minn. 55431	Lincoln High School Bloomington	64.50
5	Miss Karen E. von Glahn 2105 Vermilion Road Duluth, Minnesota 55803	East High School Duluth	62.75
6	Mr. Frederick J. Fischer 1166 Fairmount Avenue St. Paul, Minnesota 55105	St. Paul Academy St. Paul	62.50
6	Mr. Rex L. Newman 4360 Mackey Avenue St. Louis Park, Minn. 55416	St. Louis Park High School	62.50
8	Mr. David H. Hall 6609 Galway Drive Edina, Minnesota 55424	Edina-Morningside High School	62.25

Contestants With Scores of 50 or More (\$25 U.S. Savings Bond)

Rank	Name and Address	School	Score
9	Mr. Thomas F. Kysilko 4420 18th Avenue South Minneapolis, Minn. 55407	Roosevelt H. S. Minneapolis	59.50

Rank	Name and Address	School	Score
10	Mr. Larry L. Anderson Route 1 Pleasant Acres Excelsior Minnesota 55331	Minnetonka H.S. Excelsior	58.75
11	Mr. Douglas V. Larson 3701 N. Abbott Robbinsdale Minn. 55422	Robbinsdale H.S.	58.50
12	Mr. John L. Norstad 5800 Timberglade Road Bloomington Minn. 55431	Lincoln H.S. Bloomington	58.00
13	Mr. Steven E. Baudoin Dodge Center Minnesota 55927	Dodge Center H. S.	57.75
14	Mr. Richard M. Kriesel 4813 Upper Terrace Edina Minnesota 55424	Edina-Morningside H.S., Edina	56.75
15	Mr. William H. Weigel 5640 Woodale South Edina Minnesota 55424	Edina-Morningside H.S.	56.00
16	Mr. Peter A. Campagna Route 5 Wayzata Minnesota 55391	Orono High School Long Lake	55.25
17	Mr. James O. Berger 5504 Vincent South Minneapolis Minn. 55410	Southwest H.S. Minneapolis	54.25
18	Mr. Arden L. Steinbach Route 5—Box 253 Austin Minnesota 55912	Austin High School Austin	54.00
19	Mr. William C. Soule 14813 Lloyds Drive Minnetonka Minn. 55343	Hopkins H.S. Hopkins	53.75
20	Mr. John O. Dollerschell R.R. #3 Litchfield Minnesota 55355	Litchfield H.S. Litchfield	52.75
21	Mr. Paul A. Anderson 5811 Irving Avenue So. Minneapolis Minn. 55419	Washburn H.S. Minneapolis	52.25
22	Mr. John M. Croes 703 Seventh Avenue S.W. Austin Minnesota 55912	Austin High School Austin	52.00
23	Mr. Ross D. Rosenwald 7620 11th Avenue South Richfield Minnesota 55423	East Jr. H. S. Richfield	51.75
24	Miss Karen J. Sjogquist 4248 Linden Hills Blvd. Minneapolis Minn. 55410	Southwest H.S. Minneapolis	51.50
25	Mr. Robert E. Harding 2208 Newton Avenue South Minneapolis Minn. 55405	Blake High School Hopkins	50.50
26	Mr. Lee J. Levitt 1025 South Cleveland Ave. St. Paul Minnesota 55116	University H.S. Minneapolis	50.25
26	Mr. James T. Lin 1821 Malvern Street St. Paul Minnesota 55113	University H.S. Minneapolis	50.25
26	Mr. Michael J. Mayfield 5412 67th Avenue No. Minneapolis Minn. 55429	Osseo H.S. Osseo	50.25
26	Mr. Larry D. Johnson Duluth, Minn.	East H.S. Duluth	50.25
30	Mr. Richard A. Farel 4259 York Avenue No. Robbinsdale Minn. 55422	Robbinsdale H.S.	50.00
30	Mr. Vernon M. Hamberg 1119 Seventh Avenue So. South St. Paul Minn. 55075	South St. Paul H.S.	50.00