

**NATIONAL ASSOCIATION  
FOR RESEARCH IN SCIENCE TEACHING**

46th ANNUAL MEETING

**PROGRAM**

**THE DETROIT HILTON HOTEL  
DETROIT, MICHIGAN  
MARCH 27-29, 1973**

## PROGRAM COMMITTEE

Wayne W. Welch . . . . . University of Minnesota and  
National Science Foundation

Judy C. Egelston . . . . . Suny at Geneseo

David F. Engelhardt . . . . . Engelhardt and Engelhardt, Inc.

James J. Gallagher . . . . . Governors State College

Stanley L. Helgeson . . . . . Ohio State University

Eugene C. Lee . . . . . Emory University

Richard L. Sagness . . . . . University of South Dakota

**ANNOUNCEMENT**

**47th ANNUAL MEETING**

**SHERATON-BLACKSTONE HOTEL**

**CHICAGO, ILLINOIS**

**APRIL 16 - 18, 1974**

## OFFICERS OF THE ASSOCIATION -- 1972 - 1973

### **President**

DR. J. DAVID LOCKARD  
Science Teaching Center  
University of Maryland, College Park, Maryland 20742

### **President Elect**

DR. WAYNE W. WELCH  
National Science Foundation  
5225 Wisconsin Avenue, N. W., Washington, D. C. 20550

### **Secretary-Treasurer**

PROF. RALPH W. LEFLER  
Department of Physics  
Purdue University, Lafayette Indiana 47907

### **Immediate Past President**

DR. FRANK X. SUTMAN  
College of Education  
Temple University, Philadelphia, Pennsylvania 19122

### **Research Coordinator**

DR. STANLEY HELGESON  
Faculty of Science Education  
Ohio State University, Columbus, Ohio 43210

### **Editor, Journal of Research in Science Teaching**

DR. O. ROGER ANDERSON  
Department of Science Education  
Teachers College, Columbia University, New York City, N. Y. 10027

### **Board Members:**

DR. RONALD D. ANDERSON (1974)  
University of Colorado, School of Education  
Boulder, Colorado 80302

DR. THOMAS J. GRGURICH (1973)  
Cherry Hill High School East  
Kresson Road, Cherry Hill, New Jersey 08003

DR. EUGENE LEE (1974)  
Division of Educational Studies  
Emory University, Atlanta, Georgia 30322

DR. ROGER OLSTAD (1973)  
University of Washington, Seattle, Washington 98195

DR. MARY BUDD ROWE (1975)  
College of Education  
University of Florida, Gainesville, Florida 32601

DR. PAUL WESTMEYER (1975)  
Department of Science Education  
Florida State University, Tallahassee, Florida 32306

N.A.R.S.T. MEETING SCHEDULE  
1973

**PLACEMENT SERVICE:**

A placement desk and bulletin boards will be set up in the registration area. This will provide for the posting of information about jobs available and personnel seeking employment. Interested parties may post information and addresses on the bulletin board, and arrange interviews on their own. In addition a limited number of copies of an updated NARST PLACEMENT INFORMATION BULLETIN will be available.

**Coordinator of Newsletter and Placement:**

DR. MARVIN DRUGER  
Center for Science Education  
101 Heroy Building  
Syracuse University, Syracuse, New York 13210

**MONDAY, MARCH 26, 1973**

7:30 -

9:30 **Registration**

*Mezzanine Foyer*

8:00 -

10:00 **Executive Board Meeting**  
Dave Lockard, Presiding

*Parlor C*

**TUESDAY, MARCH 27, 1973**

8:30 -

5:00 **Registration**

*Mezzanine Foyer*

10:30 -

12:00 **General Session I**

*Statler 1 and 2*

Chairman: David Lockard, President NARST

Speaker: Christine McGuire, University of Illinois Medical Center

Title: Simulation Technique in the Teaching & Testing of Problem Solving Skills.

1:30 -

2:40 **Concurrent Session I**

**Session Ia: Symposium: "Pictorial Communication Research in Science Education"**

*Statler 1*

Chairman: David P. Butts, University of Texas

Holliday, William G., The University of Calgary, Calgary, Canada

Koran, John J., Jr. and Mary Lou Koran, The University of Florida

Voelker, Alan M., The University of Wisconsin, Madison

Hibbard, K. Michael, Greenwich Public Schools, Conn.

Discussants: Joseph D. Novak and Mary Budd Rowe

## TUESDAY, MARCH 27, 1973

### Session Ib: Discussion Paper

*Statler 2*

Chairman: Glenn D. Berkheimer, Michigan State University

Fiel, Ronald L., Morehead State University, Morehead, Kentucky

"An Investigation of the Effectiveness of Formative Evaluation and Remediation in Achieving Mastery of Intellectual Skills"

### Session Ic: Concept Learning

*Hilton 1*

Chairman: Richard Sagness, University of South Dakota

Shipe, Richard A., Trinity College, Hartford, Connecticut and H. Seymour Fowler, Pennsylvania State University, University Park, Pa.

"The Ability of Teacher Identified Non-College Bound High School Biology Students to Identify and Apply Selected Principles of Biology"

Za'Rour, George I., American University of Beirut, Beirut, Lebanon

"Science Misconceptions Among Certain Groups of Students in Lebanon"

Mc Intyre, Patrick J., Western Washington State College, Bellingham, Washington

"A Study of the Effectiveness of Three Types of Visual Devices on the Achievement of Selected Theoretical Concepts by Elementary Children"

### Session Id: Test Construction

*Hilton 3*

Chairman: Rita Peterson, University of California

Seymour, Lowell A., Mid-Continent Regional Education Laboratory, Kansas City, Missouri

"Development of Views and Preferences - C"

Breit, Frank D., University of South Florida, Tampa, Florida

"Correlational and Factor Analysis of Certain Tests Commonly Used to Measure Science Inquiry Goals"

Richardson, Rayman P., Fairmont State College, Fairmont, West Virginia

"Development and Use of an Instrument to Measure Elementary School Children's Scientific Curiosity and Interests"

2:50 -

4:00 Concurrent Session II

### Session IIa: An Hour With Session

*Statler 1*

Chairman: Kenneth D. George, University of Pennsylvania

Dr. David P. Butts, Science Education Center, University of Texas, Austin

### Session IIb: Teacher Education

*Statler 2*

Chairman: Delmar Janke, Texas A & M University

Kuhn, David J., University of Wisconsin-Parkside, Kenosha, Wisconsin

"A Study of the Relationship Between Various Academic and Professional Factors and Selected Elementary School Science Teaching Competencies"

## TUESDAY, MARCH 27, 1973

Crumb, Glenn H., Western Kentucky University, Bowling Green, Kentucky

"Self-Identification as a Tool for Temporary System Evaluation"

Blosser, Patricia E., The Ohio State University, Columbus, Ohio

"The Development of the Skill of Questioning By Prospective Secondary School Science Teachers"

### Session IIc: Instructional Procedures

*Hilton 1*

Chairman: Donald Neuman, University of Wisconsin, Milwaukee

Gerencser, Stephen Calasanctius Preparatory School for Academically Talented Children, Buffalo, New York and Francis T. Siemankowski, State University College, Buffalo, New York

"An Assessment of the Effectiveness of Auto-Paced Techniques in Teaching College Physical Geology to Bright Elementary School Age Children"

Smith, Thomas E., Holmdel Public Schools, Deal, New Jersey

"Performance on Tasks of Concept-Attainment Using On-Line Computer Terminals"

Allen, David W., Philadelphia Board of Education, Philadelphia, Penn.

"Museum Science Education With Social Integration and Urban Problems As a Focus"

### Session IIId: Learning Theory

*Hilton 3*

Chairman: Ronald Raven, Suny, Buffalo

Thiel, Robert P., Southern Connecticut State College, New Haven, Conn.

"The Development and Use of the Science Process Skill of Prediction"

Barufaldi, James P., The University of Texas at Austin, Austin, Texas

"The Performance of Children on Visual Observation and Comparison Tasks"

Kaur, Rajinder and James R. Campbell, University of Pennsylvania, Philadelphia, Penn.

"Evaluation of the Science Process Skills of Observation and Classification"

4:10 -

5:20 Concurrent Session III

### Session IIIa: A Discussion Paper

*Statler 1*

Chairman: Roger L. Wood, University of Wisconsin at Stevens Point

Campbell, James R., University of Pennsylvania, Philadelphia, Penn.

"Pattern Analysis - A Macroscopic Development For Interaction Analysis"

### Session IIIb: An Hour With Session

*Statler 2*

Chairman: George T. O'Hearn, University of Wisconsin at Green Bay

Dr. John J. Koran, Chairman, Science Education, University of Florida

TUESDAY, MARCH 27, 1973

**Session IIIc: Instruction**

*Hilton 1*

Chairman: Robert B. Collagan, Morgan State University

West, Felecia E., Gaithersburg, Maryland and Thomas Gadsden, Jr.,  
University of Florida, Gainesville, Florida

"A Study of the Teaching of Observational Skills for Environmental  
Science"

Hale, James P., Glencoe Public Schools, Glencoe, Illinois

"An Investigation of Two Formal Operational Schemata in Adolescents  
Enrolled in the I.S.C.S. Classrooms of Three Selected Teachers"

Kindler, Leonard I., John Bowne High School, Forest Hills, New York

"An Evaluation of the Effectiveness of Narrative Reading Materials in  
Science Teaching"

**Session IIIId: Teacher Behaviors**

*Hilton 3*

Chairman: Roger Ostad, University of Washington

Berger, Carl B., University of Michigan, Ann Arbor, Michigan

"Change in Predicted Teacher Behavior Based on Experience With An  
Activity Oriented Elementary Science Course"

Wright, Delivee L., University of Nebraska, Lincoln, Nebraska

"Verbal Behaviors Occurring in Biology Classes Engaged in Inquiry  
Learning"

Orgren, James R., State College at Buffalo, Buffalo, New York

"The Relation Between the Earth Science Curriculum Which a Teacher  
Elects to Teach and the Teaching Procedures Which He Employs"

7:00 -

10:00 Concurrent Session IV

**Session IVa: Symposium - the Buffalo Caucus: "Models for  
Research and Communication in Science Education"**

*Hilton 1*

Chairman: Beam, Kathryn J., Buffalo State University College

Doran, Rodney, State University of New York at Buffalo, New York

Swartney, Joyce, Buffalo State University College, Buffalo, New York

Siemankowski, Francis, Buffalo State University, Buffalo, New York

Young, Darrell D., Buffalo State University College, Buffalo, New York

**Session IVb: Discussion Session**

*Hilton 3*

Chairman: David Lockard

"Science Education Research in Other Countries"

Guests include visitors from Australia, England, Lebanon, and Nigeria.

7:30 -

9:30 **JRST Board Meeting**

*Parlor C*

Chairman: O. Roger Anderson

WEDNESDAY, MARCH 28, 1973

8:30 -

5:00 Registration

*Mezzanine Foyer*

8:30 -

9:40 Concurrent Session V

**Session Va: Symposium III: "Visually Perceived Nonverbal Behaviors of Teachers and Their Relationship to Student Affective Response"** *Statler 1*

Chairman: Evans, Thomas P., Oregon State University, Corvallis, Oregon

Kelly, Joseph R., University of Virginia, Charlottesville, Va.

Raymond, Anne, Old Dominion University, Norfolk, Va.

Eggen, Paul, University of Northern Florida, Madison, Fla.

**Session Vb: Discussion Paper**

*Statler 2*

Chairman: Paul E. Bell, Pennsylvania State University

Beisenherz, Paul C., Louisiana State University, New Orleans, La.

Tucker, Jerry L., Boise State College, Boise, Idaho

"Limitations of Research in Science Teacher Questioning Behavior"

**Session Vc: Teacher Characteristics**

*Hilton 1*

Chairman: Richard McLeod, Michigan State University

Smith, Sidney P., Georgia State University, Atlanta, Georgia

"An Analysis of Teacher-Self-Assessment and Correlated Student Perception of the Instructional Behavior of Middle School Science Teachers"

Spradlin, Susan D., The University of Texas at Austin, Austin, Texas

"A Study of Classroom Behavior Change Following Teacher Involvement in a Summer Teacher Retraining Program"

Lauridsen, Lamonte, Baker University Baldwin City, Kansas and

W. S. LaShier, Jr., The University of Kansas, Lawrence, Kansas

"An Investigation of the Effects of ISCS Level One on Selected Affective Variables of Students"

**Session Vd: Instruction**

*Hilton 3*

Chairman: Mary Budd Rowe, University of Florida

Bates, Gary C., Harvard Graduate School of Education, Cambridge, Mass.

"An Invitation To Inquiry"

Knapp, John A. II, State University College, Oswego, New York

"The Annotation of Articles On Biochemistry From Scientific American For High School Students"

Humphreys, Donald W., Indiana University, Bloomington, Indiana

"An Analysis of the Relationship of Individualized Instruction, Self-Image of Achievement, and Academic Achievement in High School Biology"

9:50 -

11:00 Concurrent Session VI

WEDNESDAY, MARCH 28, 1973

**Session VIa: An Hour With Session**

*Statler 1*

Chairman: Joseph Novak, Cornell University

Dr. Milton O Pella Chairman, Science Education, University of Wis.

**Session VIb: Instructional Procedures**

*Statler 2*

Chairman: Pauline Gratz, Duke University

Vander Wal, Judson M., Grand Rapids Junior College, Grand Rapids, Michigan

"The Relationships Between Two Methods of Teaching College Biology and Achievement and Attitude"

Simons, Leonard, Susquehanna University, Selinsgrove, Pennsylvania

"A Comparison of the Relative Effectiveness of Written Scripts and Audio Tapes In Teaching College Biology"

Arnold, Thomas C., State College Area High School, State College, Pa.

"An Investigation of the Effectiveness of Visuals Differing in Degree of Stimulus Explicitness on Learning for Individuals Differing in Entering Behavior"

**Session VIc: Teacher Education**

*Hilton 1*

Chairman: Judy Egelston, SUNY at Geneseo

Conradson, Diane R., California State University, San Jose, California

"The Effect of Early Classroom Teaching Experience Upon The Attitudes and Performance of Science Teacher Candidates"

Okey, James R., Indiana University, Bloomington, Indiana

"The Effects Of Learning a Mastery Teaching Strategy On Teacher Attitudes and Effectiveness"

Milton, James L. The University of Texas, El Paso, Texas

"Attitude Change As A Result Of A Short Course On Environmental Quality"

**Session VIId: Achievement**

*Hilton 3*

Chairman: Jack Hassard, Georgia State University

Aikenhead, Glen S., University of Saskatchewan

"The Interpretation of Student Performance on Evaluative Tests"

Lawrenz, Frances and Arlen R. Gullickson, University of Minnesota, Minneapolis, Minnesota

"A Comparison Of CHEM Study Classes and Traditional Curriculum Classes With Respect To Achievement and Attitudinal Measures"

Bridgham, Robert G., Stanford University, Stanford, California

"The Relation Between Students' College Board Science Scores and Their Mathematics Program"

11:00 -

12:00 **Business Meeting**

*Statler 1*

David Lockard, Presiding

12:00 -

1:15 **NARST Luncheon and President's Address**

*Wayne Room*

Chairman: Dr. Frank Sutman, Past President, NARST

Dr. David Lockard, NARST President, Speaking

WEDNESDAY, MARCH 28, 1973

1:30 -

2:40 Concurrent Session VII

**Session VIIa: An Hour With Session**

*Statler 1*

Chairman: Joseph Lipson, University of Illinois, Chicago Circle

Dr. Leopold E. Klopfer, Learning R & D Center, University of Pittsburgh

**Session VIIb: Discussion Paper**

*Statler 2*

Chairman: Lynn Glass, Iowa State University

Bingham Richard M., Mid-Continent Regional Educational Laboratory,  
Kansas City, Missouri

"Relationships Between Teacher Practices and Student Learning Of  
Inquiry Processes"

**Session VIIc: Learning Theory**

*Hilton 1*

Chairman: Patricia Blosser, Ohio State University

Butts, David P. and Robert E. Norton, The University of Texas at  
Austin, Austin, Texas

"A Developmental Study in Assessing Children's Ability To Solve  
Problems in Science"

Wilson, John T., University of Florida, Gainesville, Florida

"An Investigation Into The Effects of Generating Hunches Upon Subse-  
quent Search Activities in Problem Solving Situations"

Swami, Piyush, The Ohio State University, Columbus, Ohio

"Elementary Science Study (ESS) Materials and Creativity"

**Session VIId: Student Characteristics**

*Hilton 3*

Chairman: Stanley Helgeson, Ohio State University

Hibbard, K. Michael, Greenwich Public Schools, Huntington, Conn.

"The Relationship Between Concept Attainment and Verbal Predictive  
Ability For Primary Grade Children"

McDuffie, Thomas E., St. Joseph's College, Media, Pennsylvania

"Predicting High and Low Success-Group Membership In An A-T Biolo-  
gy Course"

Watson, Fletcher G., Harvard University, Cambridge, Mass.

"Four-Year Follow-Up On Physics Students"

2:50 -

4:00 Concurrent Session VIII

**Session VIIId: Discussion Paper**

*Statler 1*

Chairman: Eugene C. Lee, Emory University

Smith, Ben A., Oak Lawn Community High School, Oak Lawn, Illinois

"Elementary Science Curriculum and Student Achievement"

WEDNESDAY, MARCH 28, 1973

**Session VIIIb: Curriculum**

*Statler 2*

Chairman: James Gallagher, Governors State College

Maben, Jerrold W., Herbert H. Lehman College, Bronx, New York  
"A Survey of Science Teaching in the Public Elementary Schools of Two Selected Regions of the United States During the 1970-1971 School Year"

Stoess, Betty J., Eastern Kentucky University, Richmond, Kentucky  
"A Study of Content Development in Selected Secondary Biology Classes"

Selser, Will L., and Don Q. Milliken, Northeast Missouri State University, Kirksville, Missouri  
"An Analysis of Factors Successful in the Implementation of Innovative Science Programs in the Elementary and Secondary Rural Schools"

**Session VIIIc: Instructional Procedures**

*Hilton 1*

Chairman: Kenneth Jerkins, Morgan State University

Merkle, Dale G., Shippensburg State College, Shippensburg, Pa.  
"A Study of the Effects of A Reading Method VS. An Activity Method on the Learning and Retention of Simple Concepts Dealing With Pendulums"

Schafer, Larry E., Syracuse University, Syracuse, New York  
"The Effectiveness of Cue Fading in Teaching Kindergarten Children To Serial Order"

Bahorik, J. Wesley, Kutztown State College, Kutztown, Pennsylvania and H. Seymour Fowler, Pennsylvania State University, University Park, Pa.  
"A Study of the Effects of Information Items On Snyder's 1968 Proto-Theory of Instructional Efficiency as Applied to a Genetics Problem-Solving Situation"

**Session VIId: Evaluation**

*Hilton 3*

Chairman: Robert Bridgman, Stanford University

Aikenhead, Glen S., University of Saskatchewan, Saskatoon, Canada  
"New Methodology for Test Construction and Course Evaluation"

Bolig, John R., Del Mod System, Dover, Delaware  
"The Modification and Local Use of the National Assessment Test Science Items By the Del Mod System"

Fast, Kenneth V., Webster Groves, Mo.  
"An Analysis and Classification of The ACS-NSTA High School Chemistry Achievement Tests, Using Bloom's Taxonomy--Cognitive Domain"

4:10 -

5:20 Concurrent Session IX

WEDNESDAY, MARCH 28, 1973

**Session IXa: Panel: "New Vistas For Research: The Effect of Facility Design on Science Teaching and Learning"** *Statler 1*

Chairman: David Engelhardt, Engelhardt and Engelhardt, Inc., Purdy Station, N.Y.  
Kass, Heidi, The University of Alberta, Edmonton 7, Canada  
Novak, Joseph D., Cornell University, Ithaca, New York

**Session IXb: Panel: "A Comparative Study of Teaching Strategies in School Science Program"** *Statler 2*

Chairman: James A. Shymansky, Florida State University  
Matthews, Charles, Florida State University, Tallahassee, Florida  
Good, Ron, Florida State University, Tallahassee, Florida  
Penick, John, Florida State University, Tallahassee, Florida  
Kolebas, Pat, Florida State University, Tallahassee, Florida

**Session IXc: Curriculum Evaluation** *Hilton 1*

Chairman: F. James Rutherford, New York University  
Becht, Paul A., University of Florida, Gainesville, Florida  
"Analysis of Field Testing Individualized Chemistry in Florida"  
Sawicki, Mary Christelle, Villa Marie Convent, Buffalo, New York  
"The Readability of the E.S.C.P. Textbook"  
Ukens, Leon L., Towson State College Baltimore, Maryland  
"The Relationship Between Certain Structure-Of-Intellect Abilities and Achievement In A Selected Sequence From the Conceptually Oriented Program In Elementary Science"

**Session IXd: Student Performance** *Hilton 3*

Chairman: Robert Howe, Ohio State University  
McCurdy, Donald W., University of Nebraska, Lincoln, Nebraska  
"An Analysis of Self Directedness In Relation To Performance in an Individualized Chemistry-Physics Course"  
Coleman, Clarence D., Norfolk State College Norfolk, Virginia and  
H. Seymour Fowler, The Pennsylvania State University, University Park, Pa.  
"A Comparative Study of the Effects of Prior Knowledge of Performance Objectives on Cognitive Learning Outcomes in the Instruction of TCCP Physical Science"  
Uffelman, Robert L., University of Delaware, Newark, Delaware  
"Identification of Performance-Based Objectives For Classroom Teaching Strategies"

5:30 -

7:00 **Social Hour**

*Bagley Room*

7:30 -

8:30 Concurrent Session X

WEDNESDAY, MARCH 28, 1973

- Session Xa: **An Hour With The President** *Statler 1*  
J. David Lockard
- Session Xb: **An Hour With The Journal** *Hilton 1*  
O Roger Anderson and Editorial Board
- Session Xc: **Classroom Vignettes Workshop** *Hilton 3*  
Gary C. Bates

THURSDAY, MARCH 29, 1973

- 9:00 -  
12:00 **Registration** *Mezzanine Foyer*
- 9:00  
10:30 **General Session III** *Wayne Room*  
Chairman: Wayne W. Welch, President-Elect NARST  
Speaker: Ralph Tyler, Science Research Associates
- 10:40 -  
12:00 **Concurrent Session XI**
- Session XIa: Symposium "Information Theory"** *Hilton 1*  
Chairman: Gene Moser, University of Pittsburgh  
Fazio, Frank  
Dunlop, David  
Korth, Willard  
Felen, Barbara
- Session XIb: Joint AETS-NARST Panel** *Hilton 3*  
Co-Chairmen: Burton Voss, University of Michigan  
John Schaff, University of Toledo  
Bell, Paul E., Pennsylvania State University  
Westmeyer, Paul, Florida State University  
Blosser, Patricia, The Ohio State University  
Gallagher, James Joseph, Governors State University  
Gale, Calvin, Michigan Technological University  
Koran, John J., Jr., University of Florida  
Morris, Victor, University of Maryland-Baltimore  
Yager, Robert, University of Iowa  
Townsend, Ronald, Evanston Township High School  
Anderson, Harold, University of Colorado  
Bridgham Robert, Stanford University  
Trowbridge, L. W., University of Northern Colorado
- 12:00 -  
1:30 **Executive Board Meeting** *Parlor F*

**PRESIDENTS OF  
NATIONAL ASSOCIATION FOR RESEARCH IN  
SCIENCE TEACHING**

1928 . . . . .	W. L. Eikenberry	1951 . . . . .	Betty Lockwood
1929 . . . . .	W. L. Eikenberry	1952 . . . . .	Betty Lockwood
1930 . . . . .	W. L. Eikenberry	1953 . . . . .	J. Darrell Barnard
1931 . . . . .	Elliot R. Downing	1954 . . . . .	George G. Mallinson
1932 . . . . .	Elliot R. Downing	1955 . . . . .	Kenneth E. Anderson
1933 . . . . .	Francis D. Curtis	1956 . . . . .	W. C. Van Deventer
1934 . . . . .	Ralph K. Watkins	1957 . . . . .	Waldo W. E. Blanchet
1935 . . . . .	Archer W. Hurd	1958 . . . . .	Nathan S. Washton
1936 . . . . .	Gerald S. Craig	1959 . . . . .	Thomas P. Fraser
1937 . . . . .	Walter G. Whitman	1960 . . . . .	Vaden W. Miles
1938 . . . . .	Honor A. Webb	1961 . . . . .	Clarence H. Boeck
1939 . . . . .	Ralph Powers	1962 . . . . .	Herbert A. Smith
1940 . . . . .	Otis W. Caldwell	1963 . . . . .	Ellsworth S. Obourn
1941 . . . . .	Harry A. Carpenter	1964 . . . . .	Cyrus W. Barnes
1942 . . . . .	G. P. Cahoon	1965 . . . . .	Frederic B. Dutton
1943 . . . . .	Florence G. Billig	1966 . . . . .	Milton O. Pella
1944 . . . . .	Florence G. Billig	1967 . . . . .	H. Craig Sipe
1945 . . . . .	Florence G. Billig	1968 . . . . .	John M. Mason
1946 . . . . .	C. L. Thiele	1969 . . . . .	Joseph D. Novak
1947 . . . . .	Earl R. Glenn	1970 . . . . .	Willard J. Jacobson
1948 . . . . .	Ira C. Davis	1971 . . . . .	Paul D. Hurd
1949 . . . . .	Joe Young West	1972 . . . . .	Frank X. Sutman
1950 . . . . .	N. Eldred Bingham	1973 . . . . .	J. David Lockard

# NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING

## INFORMATION SUMMARY

THE NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING (NARST) was founded for the purpose of promoting research in science education at all educational levels, and for disseminating the findings of this research in such ways as to improve science teaching. NARST is incorporated as a non-profit corporation in the state of Minnesota. The official quarterly publication of the Association is the *Journal of Research in Science Teaching*. The major areas of concern are experimental and analytical research studies (theoretical or applied) encompassing curriculum development and organization, evaluation, learning theory, teacher education, programs for both the talented and under-achievers, and methods of instruction in the sciences. Surveys of current practices, enrollments, and course offerings represent other interests.

NARST meets annually on days just previous to the meetings of the American Education Research Association one year, and on days just previous to the National Science Teachers Association meetings the next year. At these meetings research papers in the areas listed above are presented along with symposia on topics of interest to teachers and educational research workers.

NARST cooperates with the ERIC Science, Mathematics, and Environmental Education Information Analysis Center (SMEAC) located at The Ohio State University to conduct and publish reviews of research in science education at the elementary, secondary, and college levels and to compile and publish the abstracts of papers presented at the annual meeting. The current NARST Research Coordinator is Associate Director for Science Education at the Center.

The constitution of NARST specifies that membership shall be drawn from those active in research in science education and those outstanding in science educational leadership such as teachers, supervisors and curriculum developers. Associate membership is available to students and to all persons who are interested in and want to support the purposes of the organization. Associate members receive all publications and newsletters of the Association but do not have voting privilege. They may, of course, participate fully in all meetings of the Association.

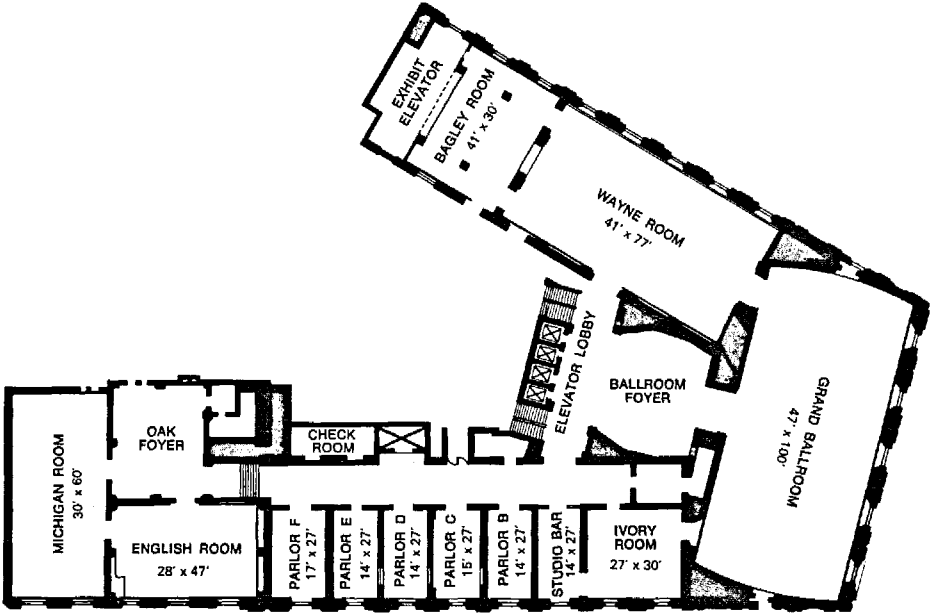
The Association maintains a Placement Information Service which, each year, provides lists of positions available and of personnel seeking employment. Prospective employees and employers are urged to use these lists to arrange contacts and interviews. Placement information is made available by mail early in each calendar year and at the annual meeting.

NARST is affiliated with the American Association for the Advancement of Science (AAAS), and for the past several years has cooperated with the other science teacher organizations in sponsoring programs at their annual meetings.

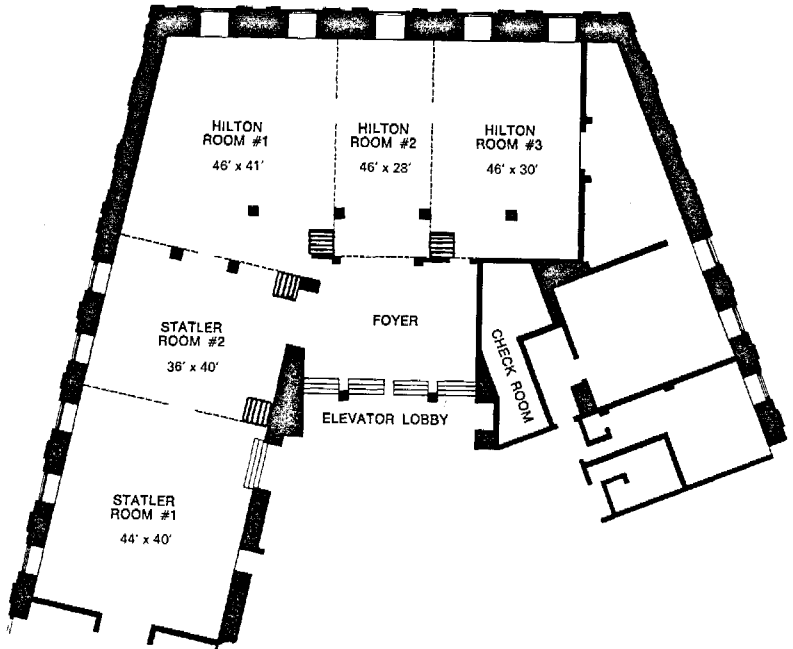
Membership dues are \$15.00 payable at the beginning of each calendar year. Applications for membership, payment of dues, and correspondence related to the business operations of NARST should be mailed to the Secretary-Treasurer.

# THE DETROIT HILTON

## BALLROOM FLOOR



## MEZZANINE FLOOR



## NEWS NOTES

In the space below please give information that will be of interest to NARST members. Tear this page off the Program and leave it at the Registration Desk. It will be given to Dr. Marvin Druger, Coordinator of the NARST Newsletter.

Thank You.