

# NARST Newsletter

Vol. 27(2)

NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING

July 1985

## Your Action Requested

David P. Butts, President, 1985-86

We hear —

Dare we listen?

The Chinese proverb says

I hear and I forget

I see and I remember

I do and I understand.

At our French Lick meeting, we heard four practitioners share with us the questions they hoped would help us search anew — or research. These thirty questions or targets for study were nearly equally divided into four categories.

How to link science with the goals of schooling — What science will help which students accomplish what outcomes valued in schools.

How to link science with students — What science will help which students accomplish that which will have meaning for them while maintaining the integrity of scientific accuracy.

How to link science with teachers — What teacher formation strategies will help teachers accomplish the goals of science, schooling, and students along with how to maintain the professional performance of teachers over time.

How to link science and instruction — What teaching strategy will enhance the impact of student experiences in science that are consistent with both students and schooling objectives.

The four categories are familiar to each of us. We have heard them before. We also know that in science classrooms and in our research studies there is the potential of much data searching for questions.

Our challenge — will we listen? Will we hear and forget — or will we dare to link the data to creative analyses and questions so that *our* (the science education researcher) answers will respond to *their* (the science teachers) questions?

## The State of the Association Presidential Address

The National Association for Research  
in Science Teaching  
French Lick Springs, Indiana  
April 18, 1985

Ertle Thompson, President, 1984-85

The National Association for Research in Science Teaching was founded in 1928 for the purpose of promoting research in science education at all educational levels, and of disseminating the findings of this research in such ways as to improve science teaching. Webster defines research as "diligent, protracted investigation: studious inquiry". Secondly, "research is a systematic investigation of some phenomenon or series of phenomena by the experimental method". Webster also defines research — to search again or anew. The new Roget's Thesaurus defines research — investigate, explore, inquire. To achieve the purposes of the Association we must vigorously explore the frontiers of human knowledge on many fronts. Not only must we pursue through inquiry and investigative experimental methods greater understanding of the nature of knowledge and how learning occurs, we must also explore with equal vigor new channels of dissemination and effective and efficient methods of implementation.

When I assumed the presidency of NARST in New Orleans a year ago, I stated to you three major goals for myself as President for the coming year. These were: (1) clarification of operational procedures and policies for NARST, (2) the development of agenda/calendar of operations, (3) the enhancement of involvement of NARST with NSTA/affiliates and the greater science education community. I feel both confident and pleased to report to the Association membership today that much progress has been made toward the attainment of those goals. Your three Presidents, working cooperatively with the Board, appropriate committees, and the Executive Secretary have made significant achievements relative to goals 1 and 2. It has also been extremely gratifying to me, as President, to observe the positive

responses and recommendations of the more than 50 members who served on the ad hoc committees for interorganizational liaison, and membership services. With the widest possible geographic distribution and also maximum breadth of research interests represented by the committee membership, ideas and recommendations which challenge the Association to bolder leadership in the profession, have been generated. I am confident that this involvement of the membership at large has been the most significant factor in the positive turnaround in our membership. The recommendations from the two ad hoc committees have been presented to the Board for review, deliberation, and future action.

The financial status of the Association is solvent, but certainly there is no operating surplus in the budget. The question of budget priorities is a perennial one with all professional organizations, and NARST is no exception. The Board and the membership must deal with the hard question of financing the operations of the Association. Individuals who serve as officers and board members can no longer be expected to bear the heavy financial burdens for participation in Association affairs. Institutional budgets, for the most part, are even more restrictive. The membership through the Policy Advisory Committee and Financial Advisory Committee must address the issues regarding budget priorities and expenditures, and the question of dues increases, and/or fund raising activities to adequately support the activities of the organization, if we are to be viable and influential.

Now to return to my opening comments regarding definitions of research. There can be little doubt that the greatest success of NARST, as a professional organization, is in the area of promoting quality research and facilitating the communication of those research findings to its members through the annual meeting and the publication of the *Journal of Research in Science Teaching*. Our journal is recognized nationally and internationally as a quality publication reporting scholarly activity. However, if we are to achieve greater impact on science education and provide leadership necessary to improve science teaching in classrooms, we must look to other avenues than JRST. Science teachers just do not read the journal. This provides both challenge and opportunity to the members of NARST for greater cooperative effort with their colleagues in the science departments and teachers K-12 to translate the findings of science education research to application and practice in the classroom settings. I am fully aware that this is probably the most debatable issue among large numbers of our members. However, to me it is analogous to the situation in engineering and engineering education versus pure science as a raging debate in this country over the

past 20 years. It was not until the beginning of the economic crisis of the late '70's and the threat of the formation of a national agency for engineering, the equivalent of the National Science Foundation, that engineering began to receive consideration and funding within the National Science Foundation. Interpretation and application of research knowledge to classroom practice, in the teaching of the sciences, is just as important to the educational well being of students in science as the application of scientific knowledge in engineering to the economic well being of industry.

Another challenge to the Association is that of broadening the horizons, without diminishing standards, to accept to the greatest degree possible the reports of the first research efforts of new members, and to use the annual meeting as a forum for more open, positive discussion and the nurturing of young talent. We have far too many one- or two-year memberships in NARST, after which the members disappear, never to be heard from again. I should think that as members of the Association we would be interested in the question, why? Certainly, the increase in the number of research methods seminars, and workshops, and the symposia dealing with the multiplicity of problems in science education have consistently had high ratings and praise by the evaluators in the past three conventions. Should we be doing more of these types of things at the annual meeting?

All of my discussion to this point has centered on goals, issues, concerns, and activities which are internal to NARST as an organization. These, I think, are far less problematic than dealing with the external problems which have been impressed upon me vigorously throughout my year as President. I referred previously to the fact that we have little or no impact on science teaching in classrooms, other than as individual members working with teachers, because our chief instrument of communication, the JRST, is not perceived by teachers as being readable and applicable. On the much broader front, NARST is not perceived by those agencies of the federal government having primary responsibility for policy decision making, in this country, as being a primary and significant source of information and talent. This perception persists throughout the agencies, despite the fact that many individuals in our Association, some of whom are present in this room today, are held in highest esteem and frequently consulted on policy decisions. The same could be said for state and local education agencies and private industry. Recently through the efforts of Dave Butts as President-elect and myself as President we were able to secure invitations for Association representation and participation in the national

workshop on the implementation of Public Law 98-377 for the support of excellence in mathematics and science education, to be funded through the U.S. Department of Education to the extent of \$100,000,000 per year for 1985 and 1986; and also, the recent national meeting of the Triangle Coalition for Science and Technology Education. The Coalition is a joint council of representatives from business, industry, labor, education, and science and engineering groups that have committed some of their resources to the improvement of science teaching. My concern, as President of NARST, and I think it should be the concern of every member of NARST, is that in these specific instances Dave Butts and I had to seek invitations rather than having the agencies and organizations approach NARST. If we as science education researchers, individually, and collectively as an Association believe in the value of our research and the goals of this organization, we need to work vigorously and aggressively to confront these challenges, and to make the National Association for Research in Science Teaching the leadership organization it deserves to be.

## 1985 Meeting Deemed a Success

**Registrants increased from 210 (1984) to 307 (1985)  
Using discussants increased paper "quality"**

The 1985 meeting at French Lick Springs, Indiana, proved to be a popular meeting site for NARST researchers. Surprisingly, more than 40% of the members registered for the 1985 meeting, perhaps, because past resort settings have gained the reputation as a place which allowed researchers to discuss a variety of topics without the hassles of city settings. (In 1984, NARST met in New Orleans.)

Most people at French Lick informally recommended that NARST continue its policy of occasionally meeting outside of cities even though some transportation problems inevitably occur. In this respect, some people recommended that future resort sites be located closer to the convention cities designated by NSTA and AERA.

The quality of papers and presentations at this year's meeting was higher, according to many attendees. The most frequent speculation given for this "higher" performance was the fact that presenters were required to mail their final drafts to discussants one month before the annual meeting. Thus, presenters were well prepared in advance of the meeting and discussants were in an excellent position to provide sophisticated critiques. Contrary to experiences at other conventions, a survey of discussants uncovered only three incidences where presenters did not forward papers to discussants.

Finally, NARST and its program committee were grateful to the science educators at the University of Cincinnati who contributed perhaps more to the success of this meeting than any other local arrangement committee in the history of NARST, as noted in the financial report.

## Winners of the 1985 Awards

**The Best Article published in Research Journal  
Two Best Papers presented at annual meeting  
Three Practical Application Awards**

The awards committees are proud to announce the winners of each contest.

The JRST award committee, chaired by Michael Padilla, announces the winner of the 1985 JRST Award — best article appearing in Volume 21 (1984) of the *Journal of Research in Science Teaching*.

"Management and Organization in Science Classrooms"

Julie P. Sanford

University of Texas at Austin

The NARST award committee, chaired by Linda DeTure, announces the winners of the 1985 NARST Outstanding Paper Awards — best paper presented at the 1984 annual meeting of NARST. This year, two papers received the award because of a tie vote from committee members.

"Forgetting Versus Savings: The Many Facets of Long-Term Retention"

Hanna J. Arzi  
Stone Hall,  
Cornell University  
Ithaca, NY 14853

Ruth Ben-Zvi and Uri Ganiel  
Dept. of Science Teaching  
Weizmann Institute of Science  
Rehovot, Israel

and

"Analyzing Relationships Among Modes of Cognitive Reasoning and Integrated Science Process Skills"

Russell H. Yeany, Kueh Chin Yap, and Michael J. Padilla

Department of Science Education, University of Georgia  
Athens, Georgia 30602

The winners of the Practical Application Award Papers — best applied papers presented at the 1984 annual meeting went to six people.

"Effects of Laboratory Activities and Written Simulations on the Acquisition of Graphing Skills by Eight Grade Students"

Dan L. McKenzie

College of Education, University of South Carolina  
Columbia, S.C. 29208

Michael J. Padilla  
 Department of Science Education, University of Georgia  
 Athens, Georgia 30602

"Effects of Lab Instruction Emphasizing Process Skills  
 on Achievement of Students Having Different Cognitive  
 Development Levels"

Margaret Walkosz  
 Division of Biological Sciences, University of Georgia  
 Athens, Georgia 30602

Russell H. Yeany  
 Department of Science Education, University of Georgia  
 Athens, Georgia 30602

"The Impact of Microcomputer Simulations on the  
 Achievement and Attitude of High School Physical Science  
 Student"

Kevin C. Wise  
 933 Shimkin Hall, Science Education,  
 New York University  
 New York, NY 10003

James R. Okey  
 Department of Science Education, University of Georgia  
 Athens, Georgia 30602

## Outstanding Paper and Practical Application Award

**An invitation to submit your 1985 NARST paper  
 to awards committee  
 Submission Deadline: September 11**

Each year at the annual meeting of the Association, the NARST Awards Committee recognizes persons whose papers, presented at the meeting the preceding year, are judged to be outstanding for their contributions to science education research or for practical applications of research to classroom practice.

The NARST Awards Committee invites all persons who presented papers at the 1985 meeting in French Lick to submit ten (10) copies of the complete paper and an abstract (a copy of the abstract should accompany each paper) for consideration for the Outstanding Paper Award. These awards will be presented at the next NARST meeting in San Francisco.

Papers are judged on (1) significance of problem investigated, (2) conceptual background, (3) research approach, (4) methodology, (5) significance of outcomes, (6) conclusions, (7) communication of information, (8) overall uniqueness. For the practical applications award, there is a ninth category: evidence of practical applications for practitioners.

Please send, by September 11, 1985, the ten (10) copies of your paper and abstract and a stamped self-addressed post card (which will be returned to you upon receipt of your papers) to:

Patricia E. Blosser  
 ERIC Clearinghouse for Science, Mathematics,  
 and Environmental Education  
 1200 Chambers Road, Rm. 310  
 Columbus, OH 43212

Please include a cover sheet containing the following information: Name, address with zip code, telephone numbers and designate — outstanding award *or* practical application award.

## Officers and Committee Members for 1985-1986

### EXECUTIVE SECRETARY

William G. Holliday  
 NARST-EDCI  
 University of Calgary  
 Calgary, Alberta  
 Canada T2N 1N4

### PRESIDENT

David P. Butts  
 Department of Science Education  
 University of Georgia  
 Athens, GA 30602

### PRESIDENT-ELECT

James Barufaldi  
 Science Education Center  
 The University of Texas at Austin  
 Austin, TX 78712

### IMMEDIATE PAST PRESIDENT

Ertle Thompson  
 Ruffner Hall  
 University of Virginia  
 Charlottesville, VA 22903

### EXECUTIVE BOARD MEMBERS

Glen Aikenhead (1986)  
 Faculty of Education  
 University of Saskatchewan  
 Saskatoon, Saskatchewan  
 Canada S7N 0W0

Patricia E. Blosser (1987)  
 Science & Mathematics Education  
 Ohio State University  
 Columbus, OH 43210-1172

Jane Bowyer (1988)  
 School of Education  
 Mills College  
 Oakland, CA 94613

Marcia C. Linn (1986)  
Lawrence Hall of Science  
University of California  
Berkeley, CA 94720

Michael J. Padilla (1987)  
Department of Science Education  
University of Georgia  
Athens, GA 30602

Gerald Skoog (1986)  
National Science Teachers Association  
1742 Connecticut Avenue, N.W.  
Washington, D.C. 20009

John Staver (1988)  
School of Education  
University of Illinois at Chicago  
Chicago, IL 60655

**EDITOR JOURNAL OF RESEARCH IN SCIENCE TEACHING**

Russell H. Yeany (1989)  
Department of Science Education  
University of Georgia  
Athens, GA 30602

**RESEARCH COORDINATOR**

Rodney L. Doran (1986)  
553 Blady Hall  
SUNY at Buffalo  
Amherst, NY 14260

**FINANCIAL ADVISORY COMMITTEE**

**Chairman:**

Marcia C. Linn (1986)  
Lawrence Hall of Science  
University of California  
Berkeley, CA 94720

**Members:**

Dorothy Gabel (1986)  
School of Education  
Indiana University  
Bloomington, IN 47405

H. Seymour Fowler (1986)  
Science Education  
University of Pennsylvania  
University Park, PA 16803

Jerry G. Horn  
School of Education  
Kansas State University  
Manhattan, KS 66506

William G. Holliday (ex officio)  
NARST-EDCI  
University of Calgary  
Calgary, Alberta, Canada T2N 1N4

**COMMITTEE CHARGE**

The financial advisory committee is responsible for considering the annual budget prepared by the executive secretary, approve program expenses, approve publication costs and new ventures, offer advice and recommendations to the executive board regarding all financial

affairs of the Association, and conduct an annual audit of the financial accounts of the Association.

The members include a chairman (three-year term), three members (with three-year rotating terms), and the executive secretary (ex-officio),

**PUBLICATIONS ADVISORY COMMITTEE**

**Chairman:**

Glen Aikenhead (1986)  
Faculty of Education  
University of Saskatchewan  
Saskatoon, Saskatchewan  
Canada S7N 0W0

**Members:**

William H. Leonard (1987)  
219A Peabody Hall  
Louisiana State University  
Baton Rouge, LA 70803

Donald W. McCurdy (1986)  
Education  
University of Nebraska  
Lincoln, NE 68505

Dan L. McKenzie (1988)  
Department of Instruction & Teacher Education  
University of South Carolina  
Columbia, SC 29200

Russell Yeany (ex-officio)  
Department of Science Education  
University of Georgia  
Athens, GA 30602

William G. Holliday (ex officio)  
NARST-EDCI  
University of Calgary  
Calgary, Alberta  
Canada T2N 1N4

**COMMITTEE CHARGE**

The publication advisory committee is responsible for establishing policy concerning the newsletter, the journal, and special publication ventures of the Association; reviewing arrangements with editors of publications; and suggesting changes in yearly publication practices to the executive board.

The members include a chairman (three-year term), three members (with three-year rotating terms), and the editor (ex-officio).

**POLICY ADVISORY COMMITTEE**

**Chairman:**

Ertle Thompson (1986)  
Ruffner Hall  
University of Virginia  
Charlottesville, VA 22903

**Members:**

James P. Barufaldi (1987)  
Science Education Center  
University of Texas at Austin  
Austin, TX 78712

Ronald G. Good (1986)  
Science Education  
Florida State University  
Tallahassee, FL 32306

Ann C. Howe (1987)  
Department of Science and  
Mathematics Education  
North Carolina State University  
Raleigh, NC 27650

William G. Holliday (ex officio)  
NARST-EDCI  
University of Calgary  
Calgary, Alberta  
Canada T2N 1N4

**COMMITTEE CHARGE**

The policy advisory committee is responsible for annually reviewing the bylaws, changes in structure or orientation of the Association, and reviewing of new activities or ventures of the Association.

**REPRESENTATIVES TO ADVISORY BOARD**

**Investigations in Science Education**

Glen Aikenhead (1986)  
Faculty of Education  
University of Saskatchewan  
Saskatoon, Saskatchewan  
Canada S7N 0W0

Susan M. Johnson (1988)  
Ball State University  
Muncie, IN 47304

David R. Stronck (1987)  
Faculty of Education  
University of Victoria  
Victoria, B.C.  
Canada V8W 2Y2

**REPRESENTATIVE TO AMERICAN ASSOCIATION FOR ADVANCEMENT OF SCIENCE**

J. David Lockard (1986)  
The International Clearinghouse  
University of Maryland  
College Park, MD 29742

**ARCHIVIST**

Paul H. Joslin  
Reading-Learning Center  
Drake University  
Des Moines, IA 50311

**PROGRAM COMMITTEE**

**Chairman:**

James P. Barufaldi (1986)  
University of Texas at Austin  
Science Education Center  
Austin, TX 78712

**Members:**

F. Gerald Dillashaw (1987)  
College of Education  
Bradley University  
Peoria, IL 61625

Rodney L. Doran (1986)  
553 Baldy Hall  
SUNY at Buffalo  
Amherst, NY 14260

Thomas R. Koballa, Jr. (1987)  
Science Education Center  
University of Texas at Austin  
Austin, TX 78712

Edmund A. Marek (1986)  
323 Physical Science Building  
University of Oklahoma  
Norman, OK 73019

Joseph P. Riley  
Department of Science Education  
University of Georgia  
Athens, GA 30602

Robert D. Sherwood (1986)  
Education  
Vanderbilt University  
Nashville, TN 37203

Emmett L. Wright (1986)  
Education  
Kansas State University  
Manhattan, KS 66502

William G. Holliday (ex-officio)  
NARST-EDCI  
University of Calgary  
Calgary, Alberta  
Canada T2N 1N4

**COMMITTEE CHARGE**

The program committee is responsible for establishing the theme and format for the annual meeting, arranging for special speakers and symposia, and evaluating abstracts for contributed papers, and the evaluation of annual meetings. (A local arrangement committee may be established, if desired.)

The membership of this committee consists of the president-elect as chairman, six members on two year rotating terms and as ex-officio members, the research coordinator and the executive secretary.

**RESEARCH COMMITTEE**

**Chairman:**

Rodney L. Doran (1986)  
553 Baldy Hall  
SUNY at Buffalo  
Amherst, NY 14260

**Members:**

Jane Bowyer (1988)  
Education  
Mills College  
Oakland, CA 94613

Roger T. Johnson (1986)  
150 Pillsbury Drive, S.E., 202 Pattee Hall  
University of Minnesota  
Minneapolis, MN 55455

Joseph D. Novak (1987)  
103 Stone Hall  
Cornell University  
Ithaca, NY 14853

William Holliday (ex-officio)  
NARST-EDCI  
The University of Calgary  
Calgary, Alberta  
Canada T2N 1N4

**COMMITTEE CHARGE**

The research committee is responsible for preparing yearly reviews of research in science education, working closely with the ERIC Center at The Ohio State University and recommending needed areas of research, research symposia, and training programs.

The membership of this committee consists of chairman and three members with two year rotating terms. The executive secretary is an ex-officio member of the committee.

**ELECTION COMMITTEE**

**Chairman:**

Ertle Thompson (1986)  
Ruffner Hall  
University of Virginia  
Charlottesville, VA 22903

**Members:**

Robert W. Howe (1986)  
ERIC Center  
Ohio State University  
Columbus, OH 43210

David Lockard (1986)  
The International Clearinghouse  
University of Maryland  
College Park, MD 29742

**COMMITTEE CHARGE**

The nomination committee is responsible for establishing the slate of officers for each election four months prior to the date of the annual meeting, making arrangements for preparation and distribution of ballots three months prior to the date of the annual meeting, tabulating election results, notify candidates of the outcome of the election a month prior to their assuming office, announcing election results at the annual meeting, and arrange for installation of new officers and transfer of the responsibilities of the executive board for the Association.

The membership of this committee shall consist of the immediate past president as chairman and two members with one year terms.

**AWARDS COMMITTEE**

**AWARDS STEERING COMMITTEE:**

**Chairman:**

Michael J. Padilla (1988)  
Department of Science Education  
University of Georgia  
Athens, GA 30602

**Members:**

Patricia E. Blosser (1988)  
ERIC Center  
Ohio State University  
Columbus, OH 43210

John W. Butzow (1986)  
136 Jackson Street  
Indiana, PA 15701

James D. Ellis (1986)  
Bio Science Curriculum Study  
Colorado College  
Colorado Springs, CO 80903

Joy S. Lindbeck (1987)  
362 Keith Avenue  
Akron, OH 44313

Peter A. Rubba, JR. (1987)  
Room 160 Chambers Building  
Pennsylvania State University  
University Park, PA 16802

John R. Staver (1988)  
School of Education  
University of Illinois at Chicago  
Chicago, IL 60655

William G. Holliday (ex officio)  
NARST-EDCI  
University of Calgary  
Calgary, Alberta  
Canada T2N 1N4

**AWARDS SUB-COMMITTEES**

**A. JRST AWARD**

**Chairman:**

John R. Staver (1988)  
School of Education  
University of Illinois at Chicago  
Chicago, IL 60655

**Members:**

J. Hugh Baird (1986)  
Box 72 McKay  
Brigham Young University  
Provo, UT 34602

John W. Butzow (1986)  
Education  
Indiana University of Pennsylvania  
Indiana, PA 15701

Eugene L. Chiappetta (1987)  
Education  
University of Houston  
Houston, TX 77004

Claudia B. Douglass (1987)  
 Department of Biology  
 Central Michigan University  
 Mt. Pleasant, MI 48859

James D. Ellis (1986)  
 Bio Sciences Curriculum Study  
 Colorado College  
 Colorado Springs, CO 80903

Willis J. Horak (1987)  
 College of Education  
 University of Arizona  
 Tucson, AZ 85721

Joy S. Lindbeck (1987)  
 Education  
 University of Akron  
 Akron, OH 44304

Larry E. Schafer (1986)  
 Education  
 Syracuse University  
 Syracuse, NY 13210

Barbara M. Strawitz (1986)  
 Curriculum and Supervision  
 Louisiana State University  
 Baton Rouge, LA 70803

Lynn Talton (1987)  
 South Carolina Department of Education  
 Columbia, SC 29205

## B. NARST AWARDS

### Chairman:

Patricia E. Blosser (1987)  
 Science and Mathematics Education  
 The Ohio State University  
 Columbus, OH 43210-1172

### Members:

Dale R. Baker (1986)  
 133 MBH  
 University of Utah  
 Salt Lake City, UT 84112

Joel E. Bass (1986)  
 Sam Houston State University  
 Huntsville, TX 77340

Lowell Bethel (1987)  
 Science Education Center  
 University of Texas at Austin  
 Austin, TX 78712

Linda Crow (1986)  
 Houston Community College System  
 Houston, TX 77007

William B. McIlwaine (1987)  
 Millersville State College  
 Millersville, PA 17551

Peter A. Rubba, Jr. (1987)  
 Room 160 Chambers Building  
 Pennsylvania State University  
 University Park, PA 16802

J. Nathan Swift (1986)  
 Secondary Education Department  
 SUNY-Oswego  
 Oswego, NY 13126

Richard L. Williams (1987)  
 Faculty of Education  
 University of Victoria  
 Victoria, British Columbia  
 Canada V8W 2Y2

## COMMITTEE CHARGE

The awards steering committee is responsible for recommending policy for the establishment of awards for the Association including the nature of the awards. The criteria for the awards and the award's selection process.

The awards steering committee consists of the chairman and six members on three year rotating terms. Additional subcommittee members may be appointed on a two year basis as needed for the review/selection process. The executive secretary is an ex officio member of this committee.

## 1984 Financial Report

### A. Direct Support, Revenue and Reserves \$45,650\*

1. Membership Dues	\$27,605
491 regular	
70 student	
53 outside North America	
4 emeritus — special	
2. Registration Fees	\$ 7,077
3. Journal Royalties	\$ 1,635
4. Miscellaneous Income	\$ 920
5. Local Donation	\$ 2,104
6. Carryover Funds from 1983	\$ 4,086
7. Dallas-Hilton Banquet	\$ 1,650
8. Revenue deferred	\$ 573

### B. Expenditures (accounting categories used by The University of Calgary) \$39,965

1. Clerical & Stnographic	\$ 758.30
2. Materials	\$ 84.23
3. Courier Service	\$ 55.47
4. Office Supplies & Printing	\$ 4,736.25
5. Books & Periodicals (& awards)	\$12,696.52
6. Postage	\$ 2,990.19
7. Telephone	\$ 3,778.05
8. Travel (& meetings)	\$14,563.92
9. Entertainment	\$ 249.53
10. Legal & Audit Fees	\$ 52.49
11. Unspent Balance (not an expenditure)	\$ 5,685.00

\*Amounts quoted in U.S. funds.

### C. Certification

Members of the board of directors have been presented with statements of certification regarding the accuracy of the general revenues and specific expenditures described above. These statements were certified by the Business Officer, Controller's Office, University of Calgary and by the executive secretary of NARST. Revenues and expenditures of NARST are processed through the Controller's Office in accordance with accounting procedures authorized by the Canadian Province of Alberta. Detailed accounts and original copies of all financial documents are available at the Controller's Office for inspection by persons authorized by the board of directors of NARST.

### D. Recent Contributions to NARST

Members of NARST contributed about 50% of the funds required to support the Association, and registrants at French Lick Springs meeting contributed about 20% of the funds required to support the annual meeting. For example, the University of Cincinnati, through the efforts of Drs. Glenn Markle, Ted Fowler and Piyush Swami, contributed about \$10,000 toward the success of our 1985 meeting.

In addition, The University of Georgia, through David Butts (president), Russell Yeany (editor of *JRST*), and Michael Padilla (board member) continue to contribute unusually large amounts of support to NARST. NARST remain grateful to their college of education.

The University of Calgary appreciates the recognition received from NARST and is grateful for the opportunity to help NARST in its efforts to improve science teaching — through research.

## First Call for Proposals — 1986

### GENERAL INFORMATION

The 1986 annual meeting will be held in San Francisco from noon, March 28 to noon, March 31. (NARST will not meet on Easter morning, March 30.) This meeting will overlap with NSTA's convention (March 26-29), as requested by some NARST members. NARST will hold its meeting in the new and luxurious Hotel Meridien located between Union Square and (across the street from) The Moscone Convention Center (home of NSTA's meeting and exhibit facilities). Since this medium-size hotel will also accommodate some NSTA members and since NARST members will receive a rate reduction of about 46%, NARST attendees are encouraged to make reservations upon receipt of their hotel forms (November 1985, NARST newsletter). NARST cannot guarantee the availability of room accommodations, especially with the recent increased popularity of NARST annual meetings (1984 — 210 registrants, 1985 — 307 registrants).

NARST encourages the presentation of a wide variety of scholarly papers reporting investigations in all aspects of science education. Historical, philosophical, ethnographic, and evaluative studies as well as reports of empirical research and critical reviews are welcomed. Moreover, NARST's 1986 program committee encourages scholarly presentations focusing on the translation of research studies into classroom practices.

An individual may present only one paper but may be listed as co-author of another paper and may also participate in a symposium or as a presider or discussant. For participants unfamiliar with the format and atmosphere at NARST meetings, presenters are strongly encouraged to stimulate discussion. Audiences at NARST meetings want to be active and not passive spectators. All presenters must be registered at the NARST meeting. Overhead projectors and screens will be provided at no charge.

If you have any questions, please contact James Barufaldi (515-471-7354), program chairperson, or William Holliday (403-274-7485), executive secretary.

NARST members and others who wish to make presentations at the meeting may submit proposals in any of the following formats:

1. **CONTRIBUTED PAPER.** Generally, brief 10 to 15-minute reports of research which are grouped by the program committee into three or four per session. Discussants are usually assigned to these sessions and presenters will provide discussants with a copy of the paper before the annual meeting, received not later than February 28, 1986.
2. **PAPER SET.** Several related papers originating from a common base of research are presented in one session. This format accommodates from three to five papers that may divide a single report which represents a major research effort. This format allows for common elements of design or approach to be presented only once rather than be repeated by each presenter.
3. **SYMPOSIUM.** A symposium should focus on a specific issue or topic of some importance and present a variety of perspectives. It should provide for interaction among participants with diverse points of view. Proposals should be submitted as a package, listing participants by name on the cover sheet. The summary should include a statement of each presentation, containing such information about the background and interests of each participant as may be relevant. Names on the proposals, however, should be omitted.
4. **RESEARCH METHODS WORKSHOP.** These sessions are designed to enable NARST members to acquire new research skills or update old ones. These one-or two-hour sessions are planned for intensive involvement by those in attendance, and presenters are expected to provide resources for study and discussion.
5. **POSTER SESSION.** Informal presentations that allow for discussion with the researcher. A display of graphic materials should be incorporated.

**MATERIALS TO BE SUBMITTED**

1. Two copies of completed Cover Sheet.
2. Six copies of a double-spaced summary, including bibliography, of not more than 6 pages in length. Omit names of author(s). The summary should ordinarily include:
  - a. purpose of study;
  - b. theoretical basis for study;
  - c. procedure of study;
  - d. results or conclusions of study;
  - e. implications for teaching science.
3. Six copies of an abstract of 300-500 words to appear in ERIC Abstracts. Omit name(s) of author(s). Bibliographic references are not appropriate in the abstract.
4. Two 3" x 5" index cards containing typed name, address, and telephone number of author and title of paper.

The above items are to be sent to:

James Barufaldi  
Science Education Center  
The University of Texas at Austin  
Austin, TX 78712

Deadline (proposals received): October 11, 1985.

**REVIEW OF PROPOSALS**

Anonymous review of proposals will be done by two or more members of the program committee. Criteria will include items a-e above. Notification of the decision by the program committee will be made mailed by December 31, 1985.

**ADVANCE PROGRAM**

An Advance Program, and conference registration and hotel reservation forms, will be mailed to all NARST members in the late fall.

**COVER SHEET****1986 NARST ANNUAL MEETING — HOTEL MERIDIEN, SAN FRANCISCO**

(Please type requested information)

1. TITLE OF PAPER OR SYMPOSIUM \_\_\_\_\_  
\_\_\_\_\_

2. FIRST AUTHOR PRESENTING PAPER

Name \_\_\_\_\_ Phone \_\_\_\_\_

Institution \_\_\_\_\_

Address (including zip or postal code) \_\_\_\_\_  
\_\_\_\_\_

3. NAME AND INSTITUTIONAL ADDRESS OF CO-AUTHOR(S), AND, IF APPROPRIATE,  
SUB-TITLES

\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. SIGNATURE \_\_\_\_\_

5. SPECIAL INSTRUCTIONS OR COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PLEASE NOTE — If accepted, your session will appear in the program as you have listed it above. Have you included the essential information above?

Thank you for your interest in improving science teaching — through research.