

# NARST Newsletter

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NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING

November 1984

## President's Message

Good news! For the first time in recent years the NARST membership is increasing. We have now topped the 600 mark, and are continuing to grow. One of our major problems with membership in recent years has been that we have recruited almost as many new members each year as in past years; however, we have been losing more members than we recruited. Hopefully, 1984 marks the beginning of a new era, where we will not only recruit new members, but retain our old members as well. To accomplish the goals of NARST, (the promotion of research in science education and the dissemination of the findings of this research in such ways as to improve science teaching), we need to broaden the base of the operation of NARST as a professional association. The association needs to involve as active participants the maximum number of members of the science education community. We need to respond to the questions and concerns of classroom teachers with solutions based on research findings. We need to broaden and enhance services to our members and the science education community.

To help accomplish the above goals, I, as President, have appointed four ad hoc committees with specific charges. I have intentionally selected large committees representing a broad range of experience, interest, professional affiliations, and geographic distribution. First, is an ad hoc Membership/Services Committee, chaired by Gerald Abegg, charged; to investigate ways in which NARST may improve its services to and increase services for the membership, and also to encourage colleagues to become members and active participants in NARST. Second, the ad hoc Interorganizational Liaison Committee, chaired by Burt Voss, is to explore ways to improve and enhance the promotion of research and the dissemination of research findings, to improve science

teaching through greater involvement with other professional associations, e.g., all the affiliates of NSTA and the many professional societies which constitute the science education community. Third, an ad hoc committee on International Concerns chaired by Patricia Blosser, to examine how NARST can better respond to international issues in science education. Four, an ad hoc committee on publicity, chaired by James Shymansky, to explore advertising of NARST in publications requiring fees, and also to seek corporate donors for support of NARST. If you have suggestions or recommendations which will aid in the work of any of these committees, please submit your suggestions to the committee chairs.

There is considerable interest and excitement among our membership in the area of research applications and classroom practices. Bonnie Brunkhorst and Dorothy Gable have been working diligently with the NSTA Board of Directors and the regional meetings of NSTA to promote more active participation of classroom teachers with researchers for science education classroom teachers with researchers for science education projects. Ron Good continues to pursue his interest in developing a research base for science texts and instructional materials evaluation. If you are interested, contact Ron at Florida State University.

Following the "Fiasco" of the "no-show" from NSF for our Symposium in New Orleans, I paid a visit to the staff of the Science Education Directorate in Washington. We had a candid, but friendly, discussion during which I conveyed what I perceived to be the unanimous reaction of the NARST members present. I received an apology from Walter Gillespie, Deputy Assistant Director of the Directorate for Science and Engineering Education. Walt was unaware that the people scheduled to represent NSF were no shows, and he gave me his personal assurance that such would not happen again. He asked

that I convey to the membership of NARST his personal apology and his desire that NSF be provided another opportunity in the future. I know that several members of NARST contacted staff members at NSF, and more importantly, contacted their respective Congressmen. I personally consider those actions not only appropriate, but the privilege, the duty, and the responsibility of each of us as citizens and professional leaders.



Ertle Thompson

### 1985 Meeting at French Lick

The 1985 NARST annual meeting will be held April 15-18 at the French Lick Springs Tennis and Golf Resort in Southern Indiana - a 3 hour drive from the Cincinnati airport and a 1 1/4 hour drive from the Louisville airport. The local arrangement committee from the University of Cincinnati encourages you to make your travel arrangements through them and promises you:

1. low air fares using either or both airports during your travels;
2. a host at the Louisville airport and at French Lick Springs assisting you with deluxe ground transportation including free refreshments and free bar service on April 14 (Sunday) or April 15 (Monday) to French Lick Springs and on April 18 (Thursday) to the Cincinnati or Louisville airports, or to the NSTA hotels in Cincinnati;
3. low daily hotel rates covering room, breakfast, dinner including taxes and gratuities, and free use of special recreational facilities for \$52.50 (double occupancy), \$80.80 (single occupancy) or \$39.50 (triple occupancy for students). (Further, the luncheon and awards banquet held on April 16 will only cost an additional \$9.70);
4. and a good time at this beautiful resort, meeting friends, acquiring new acquaintances, and sharing ideas about improving science teaching - through research.

If you have not received the registration-information packet by December 31, write or phone us.

### Announcements

Ms. Essie C. Beck, a specialist in New Orleans (P.O. Box 130, Gretna, LA 70054-0130), and a chairperson of the 1984 local committee for NARST, encourages researchers to involve themselves in the 1985 (December 12-14) NSTA area convention.

Drs. Julia Clark of New York University and Robert James of Kansas State University moved to Texas A & M University.

Dr. Emmett Wright of the University of Maryland moved to Kansas State University.

### 1985 Dues Invoice

Please place one of the enclosed invoices and a cheque into the enclosed envelope and mail these materials before January 15, 1985. Your receipt will be mailed to you with the next newsletter.

Please note the fact that the dues and fees of NARST have not increased during the last four years, but that NARST has increased its services to members. Your tax deductible payments are a valuable investment in the only major association organized to improve science teaching - through research. Encourage a colleague to join NARST.

### 1985 Election of NARST Officers

Please complete the enclosed ballot identifying the candidates for the 1985 election.

### President-Elect

**James Barufaldi**  
University of Texas at Austin

James P. Barufaldi is Professor of Science Education and Director of the Science Education Center at The University of Texas at Austin. He received a bachelor's degree in the biological sciences from Marietta College (Ohio), a master's degree in biology and education from Kent State University and a Ph.D. in Science Education from the University of Maryland. Barufaldi has directed numerous federally funded projects at the Science Education Center such as the NSF Chautauqua - Type Short Courses for College Teachers (Western Circuit), the U.S. Department of Education project, General Science Content Improvement Program and the NSF - Pre-College Teacher Development in Science Project for Teachers. He has also directed more than 25 dissertations, master reports and theses in science education.

Barufaldi has served on the board of NARST and for two years chaired the NARST Teaching Awards Committee which established criteria for the selection of exemplary articles in *JRST*. He has been active in NARST since 1971 and had presented many research papers at the NARST's annual conferences and had articles published in *JRST*.

Barufaldi has served as president of the Association for the Education of Teachers in Science and served on the board of NSTA. He was a contributing author of the AETS yearbook, *Science Teacher Education: Vantage - 1976*. Barufaldi was a consultant for the Biological Sciences Curriculum Study (BSCS) and was writer for the BSCS - *Elementary School Sciences Program*, the BSCS - *Me in the Future* program, and wrote materials for the BSCS - Center for Education in Human and Medical Genetics. He is co-author of the 1984 D.C. Heath *Elementary School Science Program* and served as editor of the special issue, *Science and Mathematics in Early Childhood Education*, published by the School Science and Mathematics Association. He has presented research papers at NARST, NSTA, and AERA.

Barufaldi was the recipient of the Outstanding Service Award of the Science Teachers' Association of Texas for his "outstanding contributions to science education". He is author and/or co-author of more than 50 articles and book reviews, and has presented more than 150 workshops in science education. His special area of interest is anxiety toward science and concerns about teaching science among pre- and inservice teachers.

**Anton E. Lawson**  
Arizona State University

Anton E. Lawson, M.S. in marine ecology, University of Oregon 1970; Ph.D. in science education, University of Oklahoma 1973; post-doctoral research, Purdue University 1973-74; research educator, University of California, Berkeley 1974-77; Assistant Professor, Arizona State University 1977-79; Associate Professor, Arizona State University, Department of Zoology 1979-present.

Member NARST Executive Board 1978-81; member *JRST* Editorial Board 1980-84; member AETS Editorial Board 1979-83; member NABT Publications Review Panel 1977-81; member *ISE* Advisory Board; Associate Editor of *School Science and Mathematics* 1981-present; Editor of 1979 AETS Yearbook *The Psychology of Teaching for Thinking and Creativity*.

Received *JRST* award for the "Outstanding Research Contribution to the *Journal of Research in Science Teaching*", volume 13; received the 1981 AETS "Outstanding Science Education of the Year Award"; received seven federal and state grants for research, teacher training and curriculum development.

Directed numerous teacher training workshops on science teaching and the development of reasoning throughout the United States, in Canada, and Europe; delivered over 40 invited addresses including the 1979 Obourn Keynote Lecture to the joint NSTA and NARST annual conventions and a 1979 general session address to NARST convention.

Over 100 publications including 27 in the *Journal of Research in Science Teaching*, others in journals such as *The American Biology Teacher*, *Journal of Chemical Education*, *American Journal of Physics*, *Physics Today*, *Journal of College Science Teaching*, *Science Education*, *School Science and Mathematics*, *Today's Education*, *The Educational Forum*, *Harvard Educational Review*, *Review of Education Research*, *Child Development*, *Journal of Experimental Child Psychology*, *Journal of Psychology*, *Language and Speech*, *Perceptual and Motor Skills*.

Research interests include the development of scientific reasoning abilities including conceptual development, problem solving and creativity. Most recent efforts include a theoretical attempt to apply nerve modeling principles to scientific reasoning patterns.

## Board Members-At-Large

**Jane Bowyer**  
Mills College, Oakland, CA

Jane Bowyer is currently Associate Professor of Education, Director of Teacher Credential Programs, and Chair of the Division of Educational Services at Mills College, Oakland, California. She received her Ph.D. and M.A. in science education from the University of California, Berkeley, and Her B.A. in education at Miami University in Oxford, Ohio. Dr. Bowyer co-authored numerous publications for the *Science Curriculum Improvement Study*. Most recently she co-authored a college textbook, *Science and Society: A Source Book for Elementary and Junior High School Teachers* and a book for science teachers, *Activities for Teaching About Science and Society*, with D. Butts, R. Bybee and R. Peterson. Dr. Bowyer's current research interests are in the area of applying teacher effectiveness findings to preservice and inservice science teacher education. She publishes in science education research journals, is a regular contributor at the annual meetings of NARST and served on the editorial board of *JRST*. Dr. Bowyer has received grants from the National Science Foundation to disseminate and evaluate staff development activities in Northern California relating Piaget's developmental stages to science teaching. Dr. Bowyer is actively involved in NSTA, NARST, AAAS and AERA. She is also a member of the California Roundtable's Math/Science Task Force, chaired by Dr. Glenn Seaborg, for the purpose of addressing the current teacher shortage crisis. Dr. Bowyer has given invited talks to NSTA and twice received the NARST award for the Outstanding Research Paper that has Applications for Classroom Teaching. Dr. Bowyer was awarded a Fulbright Senior Research Fellowship in 1982-83. Her research focused on the adaptation and evaluation of a science curriculum for the handicapped and was carried out at the Institute for Science Education (I.P.N.) at the University of Kiel, Germany.

**Robert L. Shrigley**  
The Pennsylvania State University

Dr. Robert L. Shrigley is a Professor in Education and Coordinator of the Graduate Program in Curriculum and Instruction at The Pennsylvania State University. He has taught in the elementary schools of Ohio for ten years and he was a Science Advisor for the Ohio University - USAID Project at Kano Teachers College at Kano, Nigeria. At Penn State he teaches graduate and undergraduate courses in Science Education. Since January, he has been a Visiting Scholar in Science Education at the University of Texas in Austin.

Professor Shrigley has published in the *Journal of Research in Science Teaching*, *School Science and Mathematics*, *Science Education*, *Science and Children* and other journals. He has served on the editorial board of *JRST* and presently reviews manuscripts for SSMA. He is listed in *American Men and Women of Science* and *Who's Who in the East*. He was instrumental in designing *Investigative Science in Elementary Education*, a printed and videotaped resource for elementary teachers sponsored by the Pennsylvania Department of Education.

Dr. Shrigley's research has focused on the science attitudes of elementary school teachers. His research is based on the literature of the social psychologist, specifically Hovland's persua-

sive communication model designed in the 1950's as a part of the Yale University Communication Project.

Transferring to science education the persuasion model has lead to the development of the credible characteristics of elementary science methods instructors and the public school science supervisors. Also critical has been the methodical development of a rational communications. To date, experiments testing the modification of science attitudes for preservice elementary school teachers have produced consistent and significant pre-post treatment effects using brief, oral and written communications. He has also developed and published several Likert attitude scales.

**John R. Staver**  
**The University of Illinois at Chicago**

B.S. (1968) Indiana University, M.S. (1973) Purdue University, Ed.D. (1978) Indiana University. Seven years experience as a high school chemistry teacher and six years of experience as a science educator and researcher. Taught and conducted research three years at DePaul University, Chicago, IL (1978-1981). Presently assistant professor of education and natural science at the University of Illinois at Chicago. Teaching responsibilities include secondary and elementary science methods, research methods, freshman chemistry, and doctor of arts chemistry courses. Articles published in *JRST*, *Science Education*, *Journal of Educational Psychology*, *School Science and Mathematics*, and *Science Teacher*. Edited the 1982 AETS Yearbook; co-authored Scott, Foresman Science. NARST activities include placement committee (1978-1981), JRST awards committee (1983-1986), regular presenter at NARST meetings. Won JRST award (1979). Research interests include methodology of reasoning assessment, effects of reasoning on science achievement, factors that affect reasoning in learning situations, and problem solving.

**Victor L. Willson**  
**Texas A & M University**

My undergraduate major was mathematics, and I did the coursework for the BA in physics, also completing six hours of graduate work in theoretical physics. I received a BA cum laude in 1968 from the University of Colorado.

My Ph.D. (1973) is in Educational Research with primary emphasis in statistics, mathematical sociology, and psychometrics. This preparation gave me extremely broad yet intensive training in most research methods used in the behavioral sciences. I am experienced in classical experimental design, evaluation research, sociological and anthropological research and econometrics. As a graduate student fellow in the Laboratory of Educational Research I consulted on research design and analysis with almost every College in the University of Colorado, including medical research, engineering studies, and environmental design. As an educational psychologist I continue that role at Texas A & M and am currently the coordinator of the Research Assistance Laboratory, which functions to assist researchers from across campus with research design, analyses, and interpretation questions.

My science education background effectively began with a two year Associate Directorship of Wayne Welch's NSF Project at the University of Minnesota in 1973-1975 on the evaluation of comprehensive science education projects. I wrote several papers examining effects of NSF institutes and also developed an interest in science attitude/achievement research which persists to date. I began attending NARST Annual Meetings in 1974 and regularly present and assist at them. I have served on the editorial board of JRST since 1983 and helped with the 1983 program.

I worked with Norris Harms on the 1976 NAEP Assessment in science, helping to develop exercises in the interdisciplinary science area. During my 4 years at the University of South Dakota I worked with several NSF projects in science education.

At Texas A & M I participated in the five member committee which formed a new MA in Science Education and am recognized as a member of the graduate faculty for science education. I hope to teach philosophy of science courses in the future.

My research interests currently focus on science attitudes -achievement relationships; post-Piagetian cognitive psychology and its impact on science teaching; new research techniques, especially applications to science education research, and computer-managed learning in science and mathematics. I have begun several long-term research agendas related to these areas. At this time I have published about 50 research papers, two books, and a dozen major evaluation reports.