

E-NARST NEWS

National Association for Research in Science Teaching

*Organized to improve science
teaching through research*

Carla Zembal-Saul, Editor

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College of Education
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Message from the President Grand Challenges and Great Opportunities in Science Education

Charlene M. Czerniak, NARST President

It is an honor to be your President of NARST. I look forward to serving the members of our international community to address important issues and advance NARST's research mission. As I have become more involved with NARST, I have come to appreciate the time and expertise our members contribute to our organization and our profession. To illustrate this commitment, 934 people attended this year's conference in Baltimore.



Charlene M.
Czerniak, NARST
President

Approximately 25% of the conference attendees were international members, and about 18% of the conference participants were first time attendees. These numbers speak to our growth as a professional community and our worldwide influence.

When I ran as NARST President, I indicated that I thought the most important thing we could do is help current and future educators and policy leaders

improve science teaching and learning through research. With this in mind, I selected as the theme for the 2008 conference the "Impact of Science Education Research on Public Policy." In Baltimore, Peter Fensham delivered an inspiring keynote speech on this theme. He also outlined a number of ways the NARST community could contribute to policy research. You can obtain a copy of his speech and PowerPoint by going to: <http://www.narst.org/annualconference/2008conference.cfm>

The 2009 NARST Annual International Conference will be held in Garden Grove, CA (next to Anaheim, CA) from April 17- 20. Please consider submitting a paper for the 2009 conference by the August 15, 2008 deadline by going to <http://www.narst.org/abstracts09>. I am pleased to announce that we will have a new strand this year that focuses on policy. Co-chaired by Judy Dori from Israel and Sarah Carrier from North Carolina State University, Strand 15 will let NARST members give presentations focused on the important work of impacting policy through research.

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Peter Fensham, Keynote Speaker



*Richard Duschl, NARST
President-Elect*

I encourage you to submit proposals to this new strand, which highlights local, regional, national, or international issues of policy related to science education (e.g., teacher licensure requirements, curriculum adoption, assessment regulations, and funding policy for science education).

The theme for the 2009 conference will be Grand Challenges and Great Opportunities in Science Education. The idea for this theme came from presentations that Richard Duschl (NARST President-Elect) and I heard at the May meeting of the Council of Scientific Society Presidents (CSSP) meeting in Washington, DC. At the CSSP meeting, a number of renowned scientists gave speeches about the most compelling puzzles and questions facing scientists today.

In the 125th Anniversary issue of Science, the American Association for the Advancement of Science (<http://www.sciencemag.org/sciext/125th/>) identified “Grand Challenges and Great Opportunities” facing society over the next quarter-century. In 2001, the National Research Council identified grand challenges in environmental sciences including topics such as climate variability, hydrologic forecasting, land use, and recycling. The National Research Council Committee on Grand Challenges (2005) in the chemical industry identified eight grand challenges related to chemistry for sustainability. The Gates Foundation identified 14 grand challenges for global health including improved childhood vaccines, control of insects that transmit disease, and improved nutri-

“The most important thing we can do is help current and future educators and policy leaders improve science teaching and learning through research.”

tion. In February 2008, Grand Challenges for Engineering identified major scientific challenges including making solar energy economical, providing access to clean water, a secure cyberspace, preventing nuclear terror, and enhanced virtual reality.

The concept of “grand challenges and great opportunities” can help the NARST community think about biggest challenges facing science education. To help us plan the 2009 annual meeting, Richard Duschl and I (program co-chairs) are soliciting input regarding your views about the grand challenges and great opportunities in science education. We encourage you to complete a very brief survey. The results will help us plan the conference, organize symposia, and identify keynote speakers. Please click on the following link <http://tinyurl.com/5lcmjj> which will take you directly to the short survey.

Finally, I would like to welcome our new President-Elect, Richard Duschl, who in the fall will join Penn State University College of Education as the Waterbury Chair in Secondary Education, and our three new NARST board members: Betsy Davis from the University of Michigan, Troy Sadler from the University of Florida, and Phil Scott from the University of Leeds. I look forward to working with you, the strand coordinators, the NARST committees, and the current and new board members to advance NARST’s mission of improving science teaching and learning through research.

Special thanks to our Past President, Penny Gilmer, and outgoing Board members Saouma BouJaoude, Angela Calabrese Barton, Barbara Crawford, and Allan Harrison. They have served NARST well for these past three years.

Collaborating with Scientists and Engineers for Improving Teaching and Learning of Science



A conference
speech delivered
at the 2008
Annual Meeting
Awards Banquet
in Baltimore

*Penny J. Gilmer, President
2007-2008*

This is the end of my fifth continuous year on the NARST Executive Board, with the first three years as the Chair of the Publications Advisory Committee in which I developed our electronic *E-NARST News*. I do not know how many of you read it, but at least we have a record of our history through them. I hope that you find them informative and useful. If you did not know about them, you can download them for free from our NARST Web site. If any of you need a printed copy, just let Robin Turner, Bill Kyle or me know, and we will send you a copy.

Then last year I became the President-elect, and with the switchover to our management company, DMG, I had to develop the on-line submission and review system from ideas I had in my head. The Podi Company did the programming, allowing us to review so many proposals of different types as efficiently as we could.

For this past year I have been your President. We improved the on-line submission system somewhat over the first year's version and will be doing more next year. I worked with Charlene Czerniak and the strand coordinators to form the groupings and the final schedule for you. I hope that you like the new look to our program book. We will be making an electronic survey to distribute to our membership, to get your feedback like we did last year, on this year's conference.

I have learned incredibly from our NARST Board members and leadership team with whom I have worked over these past five years. These NARST members serve our profession of science teacher education and learning. Thank you all!

As I reflected on the speech I would give today at our Awards Banquet, I looked back at my president's statement when I was elected to the Presidential team. Here is part of the statement:

"Should I be elected, I would do my best to work with all of our members worldwide. My last name, Gilmer, in Scottish means "to serve," and I would serve our group well. I am in a phase of my life in which I am giving back to society—society has provided considerably for me. For instance, NARST helped me become a science educator in a profession that I truly love. It helped me become a scholar in education, which, coupled with my scientific expertise, gives me a special opportunity to give back to the Science Education community."

I hope that I have met your needs. I have done my best.

This leads me to the ideas I would like to discuss with you today. My initial doctorate was in biochemistry, and for 25 years biochemistry was my focus before I became involved in the research in science teaching and learning. Eventually, I decided to work towards a second doctorate in Science Education through Curtin University of Technology, completed in 2004.

The change in my research from biochemistry to science education was really due to a chance circumstance, for which I am very grateful. I had been a faculty member in chemistry and biochemistry doing biochemical research on cell-cell recognition for 14 years before being approached by a science educator, Kenneth Tobin, when he was at my institution, Florida State University. He wanted to see if I could entice other scientists to become involved in grant activities to improve science teacher preparation. For that one year in my life as an Interim Dean of Arts & Sciences, I was in a position to enlist other Arts and Sciences faculty to become involved, not only in developing courses more appropriate for future teachers but also to engage in research in teaching and learning. I myself became involved, and many of those I enlisted in 1991 are still centrally involved in science education.

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Such an involvement for me as an Arts & Sciences faculty member opened up a window for learning a totally different type of research and way of thinking than I had done earlier within the biochemical laboratory. One of the initial ways I learned this entirely new language and educational theory was by serving as the “outside” committee member on the committees of doctoral education students who worked with us on such NSF grants. Initially, I was looking more at the science in their projects, but I became a learner of research in a totally new sphere.

The second way I became involved even more deeply on a personal level of my own teaching was by watching middle school teachers who were part of a teacher enhancement grant called Science FEAT that I had with Angelo Collins. These teachers conducted action research in their own classrooms. They addressed problematic issues in their own teaching. Through learning the literature and asking relevant questions on their research, they could improve the learning environment in their classrooms. These middle school teachers became a model for me in addressing my own teaching of honors general chemistry and biochemistry. I finally got up the nerve to do my first action research in my own classrooms in 1996. I have been involved in such research ever since!

I tell you this because I think we can expand science educators’ sphere of research in teaching and learning by reaching across the divides that separate education, science and engineering. We can do so by involving more scientists and engineers in research with educators in teaching and learning. Not only can they learn like I have from such collaborations, but also science educators will learn from the scientists and engineers as well! I know the power of such collaborations in my own professional career. We need to learn each other’s areas of expertise. We need to learn to collaborate to improve teaching and learning. The teaching of science and engineering will be enhanced by our active involvement.

NARST does have its college-science teaching strand #5, and this strand does include some scientists and engineers as presenters and as learners, but we could have more collaboration. Yesterday I met a physicist, Tim Young, who is here for his first NARST international conference, and he collaborates with NARST member and science educator, Mark Guy from University of North Dakota. Such collaborations as similar to theirs could reach across interna-

tional boundaries as well as within our own countries and campuses. I see such collaborations as important for our profession of science educators with the goal of enhancing the teaching and learning of science.

To do this, we must respect each other’s perspectives and understandings. We come from different cultures and different theoretical perspectives, but we have our humanity in common. In part, these differences in perspectives and understandings may be due to differences in epistemology, a branch of philosophy dealing with the nature of knowledge. Coming from a scientific background, I had

“I think we can expand science educators’ sphere of research in teaching and learning by reaching across the divides that separate education, science and engineering.”

thought that knowledge was out there to be discovered, and scientists were uncovering it. I felt a conflict within myself because for years I have been thinking that knowledge was out there to be discovered. I remember feeling the conflict deeply. I wrestled with new understandings that I learned through my collaborations with science educators and with my reading of the primary literature. I remember reading Guba and Lincoln’s third chapter from 4th Generation Evaluation, and I felt like I had driven into a brick wall in Guba and Lincoln’s analysis of science. However, now with my science education background, I have come to understand that knowledge is a human construction that helps us survive. Therefore, if you want to initiate such collaborations with scientists and engineers, be aware of this epistemological conflict, as you start educational projects and research with each other.

Undergoing such collaborations involves risks to all those involved, as you must learn to understand their language while they learn yours. I remember the feeling in the beginning of the collaboration that I did not understand the concepts, in part, because the educators used some words differently than I had used them in the past. Also some words were totally new to me, even though I have been a great reader for all of my adult life. I enjoyed serving as the outside committee member for this reason, as I could read and reflect on the language used as I learned the edu-

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cational concepts, learning all the while from these doctoral students who had just recently learned them. At least one of these doctoral students from whom I learned the language of education is here today, Hedy Moscovici.

For collaboration, you need to be a learner of each other's conceptions of epistemology, theoretical perspectives and professional expertise. You need the desire to want to learn from each other for the collaboration to be successful and productive in terms of your project and research and to meet your personal and professional needs. The desire to be a learner must be from all sides. You want to develop a culture of learning among the principal individuals in the collaboration, and you model that quest for understanding new aspects of the world to your students. Your actions speak much louder with newcomers experiencing legitimate peripheral participation, as explored in theories of situated cognition.

For collaboration to be successful, you need to have integrity in all your actions, so you are internally consistent to your core set of values. In science and engineering, integrity is central to the planning, collecting and reporting of data. Without integrity in science and engineering, the enterprise could collapse. You depend on each other in a collaboration to be honest in all aspects of the research.

Therefore, I urge you to reach out to scientists and engineers who have a yearning to learn more, to expand their expertise to include education. However, you must be ready to learn as well from them and from the different perspectives that all of you bring to the table. If you are not sure to whom to contact, I suggest you contact the Dean of the College of Arts & Sciences or the Dean of Engineering. They know the faculty members in their college who may be interested in getting involved in education. I wish you a productive collaboration, and hope to see you next year, bringing a colleague from one of these other departments to our annual international conference in 2009. We can learn from these other perspectives and improve science teaching and learning.

Lastly, I want to thank my husband, Sanford A. Safron, for his patience with all my responsibilities in the past two years, as I served NARST members. Thank you.

NARST 2008 Awards

Dana Zeidler and Phil Scott, Awards Committee Co-Chairs

Distinguished Contribution: Dr. Dorothy Gabel, Indiana University

Throughout her 30-year career Professor Dorothy Gabel has provided exemplary and continuous leadership in science education through high quality research. She has made significant and ongoing contributions to the field of science education as a scholar, mentor, and leader.

Professor Gabel's research epitomizes NARST's motto - improving science teaching through research. Notably, her significant research into how analogies, models, and visualization enhance learning in chemistry has provided a theoretical base for the research of her colleagues.

Professor Gabel's research also has addressed critical issues in teaching and learning science for elementary and middle school students. She has applied her research to solve practical problems in teaching introductory chemistry to non-science majors at her university. She has unselfishly



Dorothy Gabel receiving the NARST Distinguished Contribution Award

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and consistently used her vast knowledge of science education research to improve science education for under-represented students, particularly those in inner city schools.

Professor Gabel has received numerous awards for her exceptional leadership and her contributions to research in science education, especially in chemistry education. Professor Gabel's leadership for research in science education includes service as President of NARST and editorship of the *Handbook of Research on Science Teaching and Learning*.

Professor Gabel's mentoring of many doctoral students has contributed to their continuing success and achievements. Today, many of her former students provide leadership to our field as influential researchers, science teacher educators, and policy makers. Professor Gabel is a most deserving recipient of the 2008 Distinguished Contributions to Science Education through Research Award.

Early Career Research Award: Hsin-Kai Wu, National Taiwan Normal University

The Early Career Research Award recognizes Dr. Hsin-Kai Wu for her outstanding professional accomplishments. Dr. Wu's record of research and publications make her well known and respected as an emerging scholar in science education. Colleagues have described her research as innovative, theoretically grounded, and critical in the area of learning technologies and conceptual understanding. Her scholarly contributions draw from visualization and scientific inscriptions to offer new insights into the study of inquiry in science education. As a recipient of the National Association for Research in Science Teaching Early Career Research Award, she joins her predecessors in setting high standards for future awardees.

**NARST Outstanding Paper Award:
Lana Tockus-Rappoport & Guy Ashkenazi
The Hebrew University of Jerusalem**

Title: "Connecting Levels of Representation: Emergent vs. Submergent Perspective"

**JRST Award: Christine Chin, National Institute of Education
Nanyang Technological University, Singapore**

Article Title: "Teacher Questioning in Science Classrooms: Approaches that Stimulate Productive Thinking"

Citation: *Journal of Research in Science Teaching*, Volume 44, Number 6, 815-843

Outstanding Dissertation Award:

Victor Sampson, Assistant Professor at Florida State University

Title: "The Effects of Collaboration on Argumentation Outcomes"

Institution Awarding Degree: Arizona State University

Advisor: Douglas B. Clark



Hsin-Kai Wu, Recipient of the NARST Early Career Award



Victor Sampson, Recipient of the NARST Dissertation Award

Equity & Ethics Committee

Valarie Akerson, Chair



The Equity and Ethics Committee had a busy NARST 2008 conference! We held a preconference Scholars workshop, a Scholars Session, and worked with the Research Committee to hold a Special Symposium, and held the annual Equity Dinner in Baltimore, organized by Sandy Jones (thanks, Sandy!) and attended by

49 people! We also met with our Ad Hoc Committee on the History and Future of Equity Issues in NARST. We will report on our symposia and committee work below, after we express our gratitude and thanks to our outgoing Chair, Angela Calabrese Barton, for her amazing leadership, insight, and support, and also our committee members, Scott Dantley and Joan Lindgren, for their very hard work on this committee. Our current committee consists of: Heidi Carlone, Maria Rivera, Bryan Brown, Lisa Martan Hansen, Felicia Moore, Jrene Rahm, Sumi Hagiwaras, Michiel vanEijck, Kathy Fadigan, Gayle Buck and Valarie Akerson, Chair (vakerson@indiana.edu). Please feel free to contact members with concerns, questions or suggestions and to get involved in the committee's important work.

Scholars Program and Scholars Session

The Equity and Ethics Committee promotes and supports research from underrepresented groups through several processes, one being through the Scholars Program. Through a competitive review process we were able to fund 15 new Scholars to aid in their NARST attendance this year. These individuals are Jennifer Adams, Janell Catlin, Geary Crofford, Cesar Delgado, Jennifer Forrester, Claudette Giscombe, Cecilia Hernandez, Nam Hwa Kang, Allison Kang, Charlease Kelly-Jackson, Michelle Lee, Miyoun Lim, Patricia Martinez, Stephanie Preston, and Kihyun Ryoo. Congratulations



Equity dinner group

to these scholars, and look for information in November about applying for the 2009 NARST E & E Scholarships on the NARST website.

Our pre-conference workshop invited the above scholars and other participants to attend "Building a community of scholars in NARST: Gaining strength through diversity." This pre-conference workshop was organized and facilitated by E & E Committee Member Maria Rivera Maulucci of Barnard College Columbia University, and featured Felicia Moore, Teachers College Columbia University, and Alejandro Gallard, Florida State University. Facilitators were Bryan Brown, Stanford University, Bhaskar Upadhyay, University of Minnesota, Shawn Holmes, North Carolina State University, Sanghee Choi, University of Houston, and Line Augustin, Graduate Center CUNY. The 32 attendees (6 international members) engaged in discussions on strategies for building a stronger community of scholars in science education. A particular focus was the needs and experiences of scholars of color, with attention paid to what it means to develop a research trajectory and to gain voice in the academy. The conference was structured to allow participants to work in groups that reflect their current place in the academy (i.e., pre-and post-proposal graduate students, early career faculty with 1-2 years, and early career faculty with 3 or

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more years) to allow the workshop to be tailored to the specific needs of participants. The workshop began with an opening keynote by Felicia M. Moore with the theme of “Good Beginnings,” that focused on how scholarship in progress (particularly towards a doctoral dissertation) represents a beginning, and some strategies for making a good beginning. The keynote was followed by small working groups, each headed by two scholars of color, presently active in NARST. The workshop closed with a concluding keynote by Alejandro J. Gallard, who spoke about his international efforts to craft a research agenda focused on equity and excellence, what scholars of color can expect as they seek to author a space in the academy, and how to meet those challenges and opportunities.

Also of interest to Scholars and other NARST 2008 participants was the E & E Special Colloquium “How Identity and Cultural Frameworks Shape Access To And Appropriation Of Science Literacy,” which shared research papers by 2007 E & E Scholars Shawn Y. Holmes, Sanghee Choi, Crystal S. Gomillion, Edna Tan, and Gillian U. Bayne, and was facilitated by Bryan Brown. Our committee will organize a symposium by 2008 scholars for the 2009 NARST meeting.

Special Symposium: Conceptual Frameworks for Research on Diversity in Science Education

This symposium was co-organized by the Research Committee, and was facilitated by Angela Calabrese Barton. It featured a panel discussion with Bryan Brown, Stanford University, Pauline Chinn, University of Hawaii, Jomo Mutegi, Sankore Institute, and Alberto Rodriguez, SDSU. This standing-room-only session that

went well past its scheduled time focused on conceptualizing research for diversity in Science Education. Panelists provided overviews of conceptual frameworks that could frame equity projects in science education that may push the envelope to develop new theoretical tools and were useful in conceptualizing their research. Each scholar outlined a concept (and theoretical foundations of the concept), discussed the methodological implications of the concept, and provided one example of how the concept has been used in an actual research study. Time was left for discussion among the panelists with participants. This well-attended session was helpful to new researchers who might struggle with appropriate uses of theory and the development of conceptual frameworks, and also established researchers who were looking to expand their theoretical and methodological repertoires. We hope to collaborate again with the Research Committee and other committees in the future to provide more such symposia.

Ad Hoc Committee on the History and Future of Equity Issues in NARST

The Ad Hoc Committee on the History and Future of Equity Issues in NARST met at the annual conference to create goals, plans, and timelines for work toward chronicling and recording NARST equity issues. Members include: Mary Atwater, Nancy Brickhouse, Alberto Rodriguez, Maria Rivera, Jomo Mutegi, Eileen Parsons, Cory Buxton, Leonie Rennie, Kate Scantlebury, Bryan Brown, Okhee Lee, Angela Calabrese Barton, and Valarie Akerson.

External Policy and Relations Committee

Lynn Bryan and Betsy Davis, Co-chairs



Betsy Davis and Lynn Bryan, Co-Chairs of the External Relations & Policy Committee



Jodi Peterson, Director of Legislative Affairs for NSTA

on science education research. These position papers should be based on current and innovative findings and distributed through the Publications Advisory and Research Committees to the membership, policy-makers, and the community-at-large. Note that these position papers may not necessarily reflect a unified position for NARST, but they are meant

instead to add information from various perspectives of science education research. These papers would assist policy-makers and the public-at-large to make more informed decisions.

In addition, to initiate a conversation among the NARST membership about getting involved in science education advocacy, EPRC sponsored a session at the 2008 NARST annual meeting. The session was entitled, “Taking Action--What Can NARST Members Do to Inform Policymakers and the Public-At-Large?” Jodi Peterson, Director of Legislative Affairs for the National Science Teachers Association, addressed a crowd of approximately 20 NARST members. Her slides are available on to NARST members on our website at [<http://www.narst.org/annualconference/2008conference.cfm>].

A second charge of the External Policy and Relations Committee is to foster the development of partnerships and collaborations with appropriate professional organizations and groups concerned with the quality of science teaching and learning. As a step toward fostering more meaningful collaborations with other professional organizations, EPRC organized and hosted a booth at the 2008 annual meeting of the National Science teachers Association. Science teachers, administrators, prospective science education graduate students, and others stopped by the booth to find out about our organization, look through sample research articles written by NARST members, and chat about current science education issues. We would like to thank the many volunteers who took time out of their busy conference schedule to meet, greet, and share information about NARST to members of the NSTA community: Marjorie Bequette, Brenda Capobianco, Carla Johnson, Phyllis Katz, Michelle Klosterman, Catherine Koehler, Michele Lee, Erin Peters, Kate Scantlebury, David Sederberg, and Emily Wischow.

If you are interested in joining EPRC’s efforts to become involved in science education advocacy, or if you would like to work with EPRC to foster the development of collaborations with other professional organizations concerned with the quality of science teaching and learning, please contact Lynn Bryan (labryan@purdue.edu) or Betsy Davis (betsyd@umich.edu).

International Committee

Mei-Hung Chiu, Chair

International Committee Scholarships

Since 2006, we have tripled the number of awardees of International Committee (IC) scholarships with the full support of NARST Board of Directors. This program encourages international graduate students and junior scholars in science education to participate in the NARST conference. This year, the IC members carefully evaluated applications and decided to provide financial support to 15 participants in 2008: Yael Bamberger, Oksana Bartosh, Hye-Eun Chu, Carmit Cohen, Hadas Gelbart, Karim Hamza, Ajda Kahveci, Jing-Wen Lin, Christine McDonald, Rachel Moll, Debby Peck, Lea Segal, Chia-Yu Wang, Hagop Yacoubian, BaoHui Zhang.

Mentoring Program

The International Committee continues the mentoring program for NARST international members that started in 2005-06. The purpose of the mentoring program is to help non-native English speaking members of NARST improve the quality of English of their research manuscripts. This year, we recruited 12 mentors to support 9 mentees. The feedback from mentors and mentees was promising. We hope to continue this program with the active involvement of NARST members.

International Committee Meeting at NARST 2008

About 25 participants (including International Committee members, scholarship awardees, international members) attended the IC meeting at annual conference of NARST 2008 on March 31. During the meeting, I reported the activities that were conducted for the past few months, recognized and thanked members who helped conduct IC activities, presented scholarship awardees, introduced new members, and announced a new program called Linking Science Educators Program. Special thanks to Saouma BouJaoude, former Chair of the IC, for his great support during the past year. Justin Dillon, Chair of ESERA, also attended the meeting to share his thoughts about developing active interactions between NARST, ESERA, and the IC. He invited participants to attend the special arrangement of ESERA-seminar at NARST. The committee invited NARST international



International Committee Meeting at NARST 2008

members who will attend the upcoming NARST conference to join the International Committee meeting. It is a good opportunity to contribute to shaping our vision.

NARST International Seminar

The International Committee sponsored a session titled, Reforms in science education in different countries. The presenters were David Treagust (Curtin University, Perth Australia), Uri Zoller (Faculty of Science & Science Education – Chemistry, Haifa University, Israel), Christine Chin, Kim-Chwee Daniel Tan, & Thiam-Seng Koh (National Institute of Education, Nanyang Technological University, Singapore), Rachel Mamlok-Naaman and Avi Hofstein (Department of Science Teaching, The Weizmann Institute of Science, Israel), and Gilberto Alfaro-Varela (Costa Rica). The wide range of backgrounds and nationalities provided rich discussion among members of the audience.

ESERA Session at NARST 2008

The NARST International Committee continues its efforts to strengthen the relationships with international science education research organizations, such as European Science Education Research Association (ESERA). In accordance with the main theme of our annual meeting, the title of the ESERA seminar was set as, The Impact of Science Education Research on Public Policy. The presenters were Mei-Hung Chiu (Chair, NARST International Committee), Franz Bogner, Jan Sølberg, Andrée Tiberghien, Charlene M. Czerniak (President of NARST), Albert Zeyer, Manuela Welzel (ESERA Secretary), and Justin Dillon, (ESERA President).

Launching Linking Science Educators Program

The Linking Science Educators (LSEP) program, initiated by International Committee of NARST, is a new initiative designed to contribute to the improvement of science educators in countries interested in science education reform. The program supports representatives from countries that are either economically disadvantaged (e.g., UNDP Human Development Index 0.80 or below) or educationally disadvantaged countries (e.g., low financial support towards science education with respect to their gross national product for education), who are interested in implementing new ideas on science education reform in their countries. The LSEP program supports the resource expert's round-trip economy airfare, while the host country provides the cost for the resource person's stay and for the conference/ workshop/seminar. We hope the Linking Science Education Program can serve the following purposes: bring science educators to countries that need educational support for implementing innovative ideas in science education reform; encourage NARST members to contribute their expertise and experiences in theory and practice to different regions and countries; demonstrate the commitment of NARST to improving science education research in different cultures, to share responsibilities for improving scientific literacy of global citizens in the 21st century; and promote active interaction among science education associations. I strongly encourage you to pass this information to people who might need the LSEP for their science education reform. Related information can be found at <http://www.narst.org/news/index.cfm>.

International Committee seminar at Conference of Asian Science Education (CASE)

Approximately 500 participants from more than 17 countries presented 146 papers and 62 posters at CASE, hosted by National Kaohsiung Normal University, February 20-22, in Taiwan. The Committee was honored to invite Glen Aikenhead as the discussant for the NARST IC session. Presenters included Chorng-Jee Guo, Mei-Hung Chiu (from Taiwan), Masakata Ogawa (from Japan), Jinwoong Song (from Korea), and Chi-Yan Tsui (from Hong Kong). They discussed Impacts and Challenges of TIMSS, PISA, and National Studies on Science Learning in Asia. Interactions among audience members and presenters were inspiring.

In order to introduce functions of NARST and collaborate with associations in Asia, the IC organized a meeting with international participants at CASE. Presenters included Hsiao-Lin Tuan (Earlier Career Research Award Committee, Co-Chair), Hsiao-Ching She (Journal of Research in Science Teaching Award Committee, Co-Chair), and Chun-Yen Chang (former member of the IC). Mei-Hung Chiu provided an overview of NARST, in particular, the functions, services, scholarships, and programs that the IC provides. Hsiao-Lin Tuan and Hsiao-Ching She explained the standards and processes for reviewing applicants for awards. Chun-Yen Chang shared his experiences as a formal member of the IC.



NARST International Committee session at CASE (From left to right, Jinwoong Song, Chorng-Jee Guo, Mei-Hung Chiu, Glen Aikenhead, Masakata Ogawa Chi-Yan Tsui)

Publications Advisory Committee

Carla Zembal-Saul, Chair

The Publications Advisory Committee (PAC) sponsored two sessions at the 2008 annual meeting of NARST. Randy McGinnis and Angelo Collins, Co-Editors of *JRST*, led a session on publishing in the journal. The second PAC session was titled, *How Can we Translate and Communicate our Science Education Research to Practice (RTP)?* This session was well attended (40-50 people). Barbara Crawford presided over the session and presentations by panel members Sandra Abell, Julie Luft, Bill Holliday, and Carla Zembal-Saul generated enthusiastic discussion of possible avenues for fostering RTP connections.

Thank you to our committee members and special guests for their active participation and substantial contributions during two meetings at the 2008 conference.

Barbra Crawford (08)

Cornell University

Bill McComas (08)

University of Southern California

Hedy Moscovici (09)

California State University, Dominguez Hills

René Schwartz (10)

Western Michigan University

Len Annetta (11)

North Carolina State University

J. Randy McGinnis, JRST Co-Ed

Angelo Collins, JRST Co-Ed

At our first meeting, Fouad Abd El Khalick updated the PAC on the activities of the Ad Hoc Committee on the History of Science Education. Randy McGinnis presented the slate of proposed additions to the JRST editorial board and described the selection process. The committee unanimously approved the slate. During the second



PAC sponsored session on research to practice

meeting, the PAC reviewed and discussed recommendations for RTP connections generated by participants at the committee-sponsored session. The need to coordinate more closely with the External Policy and Research Committees was recognized. We will begin to compile a matrix of goals, activities, roles and responsibilities, etc. to facilitate conversation among the committees.

A new description of the committee responsibilities (see below) was drafted and submitted for inclusion in the NARST Policy and Procedures document.

Publications Advisory Committee

The membership consists of a Chair (elected Board Member) and nine additional members appointed by the NARST President-elect with three rotating off each year. JRST Editor(s), Directors of other NARST publication efforts, along with the NSTA Director of Research and the NARST President and Executive Director serve as Ex-officio members. The President-elect appoints a Board member to serve as Co-Chair during the last year of the Chair's tenure on the Board. The Co-Chair will succeed to the Chair's position upon the Chair's retirement from the Board.

This committee serves in an advisory capacity for all NARST-sponsored publications, including JRST, position papers, research-to-practice documents, and the NARST



Outgoing PAC Chair, Barbara Crawford, and Carla Zembal-Saul

Welcome!
Your commitment
to serving NARST through
participation on the
PAC is appreciated.

web site. The Chair is Editor for E-NARST News, a publication that is produced twice each year for NARST membership and serves as a historical document of the activities of the organization. The Committee coordinates publication efforts with the External Policy and Relations and Research Committees. Overseeing the content of the NARST web site also is included in the responsibilities of the Committee.

Given the nature of the responsibilities of the committee, we requested 6 additional members to manage the increased workload associated with new publications initiatives. These new members of the PAC are:

Katherine McNeill (09)
Boston College

Tamara Nelson (09)
Washington State University, Vancouver

Kate Popejoy (11)
University of North Carolina, Charlotte

Gill Roehrig (11)
University of Minnesota

Kathy Roth (10)
Lesson Lab

Tali Tal (10)
Technion – Isreal Institute of Technology

Special thanks to Barbara Crawford, the outgoing PAC chair and editor of e-NARST News. Under her leadership, the PAC launched the new NARST web site and e-NARST News benefited from an updated look and format. The most recent edition of e-NARST News, January 2008, 51(1), had 19 pages of content, including NARST news and announcements, articles from the president and executive director, committee reports, and information about the 2008 conference. e-NARST News is available on the NARST web site and serves as an effective chronicle of the activities of the organization.

Finally, the new NARST web site was launched one year ago. We continue to seek input from the membership regarding content and suggestions for improvements. Please email Carla Zembal-Saul (czem@psu.edu) with your ideas and comments about the web site, as well as your input on other PAC initiatives.

Research Committee

*Randy Yerrick & Troy Sadler,
Co-Chairs*



Randy Yerrick, Research Committee Co-Chair

The NARST Research Committee is charged with providing leadership in research for the NARST membership, including special topic pre-sessions and workshops at the Annual Meeting, research reviews, and research-oriented professional development tailored to the needs of the membership. We are pleased to welcome Troy Sadler as the new Co-Chair for the Research

Committee and two new members to the committee – Gavin Fulmer and Dale Baker. Due to the increase of responsibilities of the Research Committee and the central role it plays in the organization, the NARST President will also be adding additional members soon. We think these new additions will add great depth and insight to the directions our committee should go to better serve the membership.

The NARST Research Committee is charged by the By-Laws to monitor, edit, or propose research strands for the Board. In the current political context we assessed a needed strand for research was that of policy. So, beginning with this Fall's proposals, NARST will be accepting proposals for a Policy Strand for the annual meeting. It is a first for NARST and we look forward to many interesting discussions and papers in Garden Grove next spring.

You may be aware of the increased interest of the NARST Board to work with NSTA as a close Affiliate of their organization. The NARST Research Committee has made collaboration with NSTA a top priority in an attempt to more widely disseminate pertinent classroom research as well as meet NSTA's requests for guidance on "evidence-based" research implicit in today's Federal funding announcements. NSTA has reorganized their Council and Affiliate structure and currently NARST sits on the Leadership Team for the Affiliates of NSTA, advising the NSTA Council on matters to be addressed to the NSTA Board. In an interest to facilitate better collaborations among and between members of NARST and NSTA, the Research Committee has attended many NSTA Board meetings and joint sessions and participated in dozens of hours of face-to-face planning meetings with NSTA and other Affiliates like ASTE. As a result, NSTA has re-



*Session sponsored by
the Research Committee*

requested advice on their Annual Congress hosted this summer where one of their break-out sessions for the day will be entirely devoted to research concerns. The Research Committee is working with session planners to select appropriate and rigorous research, summarize important findings, and explore a variety of ways to give science teachers access to the power of practice informed by research. Long-time NARST member Julie Luft has also recently been appointed to NSTA's post of Research Director and we look forward to helping her in her new role in any way we can. Congratulations Julie!

As a reminder, the Research Committee will be receiving and reviewing proposals for special Research Committee Sponsored Workshops and Research Sessions. We received great feedback from the recent workshops led by Kathleen Roth and Patricia Simmons. Our sponsored session was well attended, likely due to the collaboration between the committee members, presenters, and the Equity and Ethics Committee. With a new spirit of collaboration the Equity and Ethics Committee and Research Committee sponsored a two-part professional development event discussing diversity and equity issues in science education. Part One was a pre-conference workshop to build a community of scholars and share and discuss specific strategies for developing a research trajectory in the academy. Part Two was an invited session where a panel of experts discussed progress in the field since the AAAS (1989) call of science for "all Americans" two decades ago. Promising strategies were examined for teachers and researchers addressing equity in science classrooms and the attendance in both was standing room only. We will be working closely with the Program Committee for next year addressing issues of scheduling, venue, and format as some errors in the planning led to some concerns raised by the membership.

As always, the Research Committee welcomes the comments, criticisms and suggestions of NARST members. If you or someone you know has a comment or question, please feel free to contact us at ryerrick@buffalo.edu or tsadler@coe.ufl.edu.

From the Editors of the *Journal of Research in Science Teaching (JRST)*

J. Randy McGinnis and Angelo Collins



We are pleased to announce the appointment of the following new Editorial Board Members to the JRST Editorial Board (term, spring 2008 to spring 2011):

International Institutional Affiliations

Dr. Michael Bowen

Mount Saint Vincent University, Halifax,
NS Canada

Dr. Gregory P. Thomas

The University of Alberta,
Edmonton AB Canada

Dr. Georgio Tsaparis

University of Athens, Athens, Greece

Dr. Anat Yarden

The Weizmann Institute of Science,
Rehovot, Israel

National (USA) Institutional Affiliations

Dr. William John Boone

Miami University, Oxford, OH

Dr. Malcolm B. Butler

University of South Florida, St. Petersburg, FL

Dr. Deborah L. Hanuscin

University of Missouri, Columbia, MO

Dr. Martina Nieswandt

Illinois Institute of Technology, IL

Dr. Ann E. Rivet

Teachers College Columbia University, NY

Dr. Michael U. Smith

Emory University, Atlanta, GA

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These new Editorial Board members represent a wide range of diversity present in the NARST community (including: international institutional affiliation, national (USA) institutional affiliation, science content expertise, methodological expertise, gender, race/ethnicity, and rank). They all responded voluntarily to a call for new JRST Editorial Board Members that the editors made in the E-NARST News and on the NARST All Members Listserv. While not all who applied could be appointed this year due to an issue with qualifications (prior experience reviewing for and publication

in the journal were stated prerequisites) and/or limitation in the number of spaces available for new Editorial Board members, we would like to thank all those who responded to the call. Our next call for Editorial Board Members will come out in early 2009. Applications from international members are especially welcomed.

We are also pleased to announce the appointment of a new Associate Editor to the JRST Editorial Board (term, spring 2008- December 2009).

Dr. Cory Buxton, University of Georgia, USA

Call for Papers

Special Issue on PISA in the *Journal of Research in Science Teaching*

*Guest Editors: Rodger Bybee, Peter Fensham,
and Robert Laurie*

Proposed Focus

International assessments contribute to a greater understanding of science education around the world by helping participating countries understand the need to improve policies, programs, and practices in science teaching. In 2006, science was the primary domain for the Programme for International Student Assessment (PISA). Compared to the school curriculum orientation of Trends in International Math and Science Study (TIMSS), PISA provides a unique and complementary perspective focusing on the application of knowledge to science and technology problems in life situations. The orientation of PISA is one of scientific literacy, a theme of great importance to the science education community.

The theme for this special issue of JRST will be SCIENTIFIC LITERACY AND CONTEXTS IN PISA SCIENCE. The science contexts emphasized in PISA 2006 were: health, natural resources, environment, hazards, and frontiers of science and technology. Each of these contexts included personal, social, and global dimensions. In addition, PISA 2006 included items that explored students' understanding of knowledge about science (i.e., nature of science) and interest

in science, support of scientific inquiry, and responsibility towards resources and environments. These themes are timely and important for jurisdictions considering curricular reforms.

Possible Topics

Examples of specific topics for inclusion in the special JRST issue include: context-based science education; authentic assessment; higher order learning in science; gender and context; student interest and context; level of student achievement and context; comparisons of scientific literacy and countries' curricular emphasis; and, students' understanding and support of scientific inquiry.

Timeline

Manuscript Submission deadline: **October 15, 2008**

Reviews returned: **January 15, 2009**

Revisions due: **March 1, 2009**

Expected Publication: **September, 2009**

Submission Guidelines

Submission of manuscripts should follow the publication guidelines for the Journal of Research in Science Teaching and be submitted electronically to Manuscript Central. Select "Special Issue" option and identify the special theme as "PISA." Manuscripts selected after competitive, peer-reviewed process, will be published.

Inquiries concerning this special issue should be directed to Rodger Bybee (rbybee@bscs.org)

Call for Award Nominations

NARST Distinguished Contribution to Science Education through Research Award Nominees

The National Association for Research in Science Teaching seeks to improve science education through research. To this end, the Association desires to recognize and reward individuals who have made significant contributions to science education through research. Contributions may be of several types, including but not limited to empirical, philosophical or historical research, evaluative studies, policy-related research, and studies reflecting new techniques to be applied in research.

The recipient of the Award should have contributed over a period of at least 20 years since the award of his or her doctorate and should be at the pinnacle of his/her career. This award is the highest recognition NARST can bestow for contributions to science education through exemplary, high quality research.

Nominations are due not later than 30 August 2008 to ktobin@gc.cuny.edu.

All members are encouraged to consider nominating a colleague for this award. Self-nominations are not permitted.

Please note that the award will be made to an individual who over a period of at least 20 years has:

- a) made a continuing contribution to science education through research;
- b) provided notable leadership in science education through research; and
- c) had substantial impact on science education through research.

All that is necessary to start the nomination process is for a NARST member to send a name or names with no more than a one-page letter supporting the nomination of the person.

Please send the names of nominees to Kenneth Tobin (co-chair with David Treagust) at ktobin@gc.cuny.edu.

NARST Early Career Research Award: Submission Invitation

The NARST Early Career Research Award acknowledges contributions to science education through research by individuals during the five years immediately following receipt of the doctoral degree. To qualify for the award this year, the nominee must have received the doctoral degree on or after January 1, 2003. All NARST members are encouraged to consider nominating an eligible and deserving early career member.

Nominations for the award must be accompanied by the following supporting material:

- a) A letter of nomination which discusses the nominee's impact on the field;
- b) The nominee's vita;
- c) A two-page summary of the nominee's research interests, prepared by the nominee;
- d) Three of the nominee's best papers; and
- e) Two additional letters of support to be sent separately.

Nomination materials should be received by the Committee Chair, Larry Flick (FlickL@science.oregon-state.edu) no later than November 15, 2008.

All nomination packages and materials should be sent electronically in PDF format.

Note: Each candidate is reviewed independently by eight committee members. If you are interested in seeing the rating sheet that is used in this process, please request it directly from the Chair of the committee.

NARST Outstanding Doctoral Research Award

The NARST Outstanding Doctoral Research Award Selection Committee invites all current NARST members who completed a dissertation within the 15 months prior to September 15, 2008 to submit an expanded ten-page abstract (in PDF format) to the committee for consideration for the 2009 NARST Outstanding Doctoral Research Award. Submissions are sought from as wide a field of candidates as possible, inclusive of gender, age, and ethnicity.

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Judging will occur in two rounds. The first round of judging will be based on the ten-page abstract. From these, a small group of applicants will be asked to submit one copy (in PDF format) of the complete dissertation. The final decision of the committee will be based on the complete dissertation. All applicants will be notified of their status after the first round of judging is completed in early November. The recipient will be announced at the awards luncheon at the 2009 annual meeting in Garden Grove, California.

The committee welcomes doctoral dissertations from all research perspectives. The ten-page abstract should be structured to describe clearly the following: (1) purpose or objectives of the study; (2) conceptual/theoretical framework; (3) research approach/methods; (4) data sources and methods of analysis; (5) findings or results; (6) conclusions and implications; and (7) significance of the study. It is suggested that nominees model their abstracts after conference proposals submitted for NARST: Abstracts should foreground rationale, methods, and results.

Judging in both rounds (for abstracts and dissertations) will be based on the following three central questions: (1) Is the research question(s) being asked of importance to the community of science educators? (2) Is the research approach and its implementation thorough and appropriate for the research question(s) asked? And (3) Are the results and conclusions appropriate for the context of the study? Specific criteria considered in relation to these questions include: The significance of the research problem/area; conceptual/theoretical background; thoroughness of the research approach and methods; identification of conclusions/outcomes and their implications for science education; clarity and coherence of communication; and overall originality or creativity. In the past successful applicants have been those who were able to make a case for the significance of their study to the sci-

ence education community as a whole and/or who convinced the reviewers of the originality of the questions asked or methods employed.

Submission Procedure: An all-electronic submission process will be used. Persons wishing to be considered for the award should submit an e-mail with the following three attachments (in PDF format): (1) one file containing a ten-page, double-spaced abstract (margins limited to one inch all around using 12 cpi font); (2) one file containing a five-page abbreviated bibliography; (3) one file containing a cover sheet which includes the author's name, address where they can be reached through December 2008, e-mail address, telephone and fax numbers, title of the study, the name and address of the institution where the dissertation was completed, a list of the members of the dissertation committee, and the date the dissertation was passed.

This cover sheet should be signed by the major advisor/professor/supervisor or chair of the dissertation committee. An electronic signature is acceptable. Alternatively, the dissertation supervisor/director can send an e-mail to the Chair of the Outstanding Doctoral Research Award Selection Committee endorsing the application and attesting to the accuracy of the information provided in the application. (Note: The title of the study should appear on the first page of the abstract, but the author's name and other identifying information should appear **ONLY** on the cover sheet.)

An email with all three attachments must be received by Deborah J. Tippins at dtippins@uga.edu no later than September 15, 2008. We regret that the committee will be unable to consider incomplete or late applications. Questions regarding this award should be e-mailed to the Chair of the Committee: Deborah J. Tippins at dtippins@uga.edu.

Call for New JRST Editor for 2010-2014

The National Association for Research in Science Teaching is searching for the new Editor of the Journal of Research in Science Teaching for 2010 - 2014. Applications will be welcomed either by individuals for the position of sole Editor or for the position of Co-Editors. JRST is a leading international journal and as such applications are encouraged from international members. The position provides the person(s) chosen, as well as the host institution(s), with international visibility in the area of science education. The JRST Editor provides the world's science educators with the organization's broad views and goals as illustrated by published manuscripts. By providing editorials, the Journal can and should assume a leadership role in science education, as well as influence policy and practice.

Upon approval by the NARST Board of Directors, the new JRST Editor(s) will begin working with the current Editors for transition purposes during the calendar year 2009. Full responsibilities as Editor will be from January 2010 through December 2014, with the Editor(s) on the cover of JRST 2011 – 2015. The first issue for which the new Editor is fully responsible (January 2011) would be due to the publisher, Wiley - Blackwell, three months in advance of the publication date.

On July 9, 2008 the Position Announcement was released on the NARST web site as well as in a listserv message to all NARST members. The full announcement describes the responsibilities of the position, the NARST commitments, and the application process.

Interested persons are encouraged to discuss the nature of this position informally with the current Editors (Randy McGinnis and Angelo Collins; jrst@umd.edu) and / or NARST Executive Director Bill Kyle (bill_kyle@umsl.edu). A letter of intention is due by August 10, 2008 to Penny J. Gilmer, Search Chair, (gilmer@chem.fsu.edu) in which the rationale for seeking the position is described in detail. The complete proposal for JRST Editor is due September 12, 2008. The proposal should be submitted to Penny J. Gilmer in a single Adobe document (.pdf)

file. Finalists may be invited to attend a portion of the NARST Board of Directors meeting (October 17 to 19, 2008) in Reston, Virginia (USA) for the purpose of interviewing for the position. Applicants are expected to be available to travel to Reston, VA, USA at NARST expense during these dates.

Please visit the NARST web site for complete details regarding the JRST Editor search.

Funding Opportunities

The Institute of Education Sciences is now accepting applications for its Mathematics and Science Education Research Program. The program funds research and development to improve mathematics and science education for students from kindergarten through grade 12. The deadline for applications is October 2, 2008. For more information email Christina Chhin at Christina.Chhin@ed.gov. For information on math and science research for students with disabilities or at risk for disabilities, email Robert Ochsendorf at Robert.Ochsendorf@ed.gov. Interested applicants can also visit <http://ies.ed.gov/funding/> for more information about funding opportunities.