

eNARST NEWS

July 2013 | Vol. 56 | Issue 2

NARST

A worldwide organization for improving science teaching and learning through research

A MESSAGE FROM THE PRESIDENT

Lynn Bryan, NARST President

It is a privilege to serve as NARST President. NARST has been my academic home for nearly 20 years, and I feel a deep commitment to seeing our organization grow and prosper in ways that advance science teaching and learning around the world. When I ran for NARST President, I expressed my desire to work on several issues. One of the major commitments I made was to build on the momentum of the last few years to increase the impact of and bring greater visibility to our community's research. NARST, with internationally recognized science educators, scientists, practitioners, and graduate students, is uniquely positioned to be a "go-to" organization for information and guidance about existing and emerging national and international science education policy matters. To move toward this goal, Past-President, Sharon Lynch, and I organized an initiative to provide research-based responses to the Next Generation Science Standards (NGSS). As you will read in this issue of *e-NARST News*, teams of NARST members are developing a suite of position papers to address some of the most salient issues involved in the implementation of the NGSS. The NARST-NGSS initiative is aimed at providing direction for national and local NGSS implementation efforts from a strong and sophisticated research base. More about this initiative may be found on the following page. Furthermore, the NARST-NGSS initiative serves as a pilot for the External Policy and Relations Committee's work on constructing a set of procedures for the development of NARST position papers in general.

Another commitment that I made was to continue enhancing our relationships and initiatives with affiliated organizations and potential affiliated organizations. While NARST has had a strong, long standing relationship with the European Science Education Research Association (ESERA), it was not until recently that a Memorandum of Understanding between NARST and ESERA was finalized. The overarching

purpose of this affiliation is to foster a productive working relationship between NARST and ESERA, as both organizations are interested in policy, practices and research in science education. At the 2013 NARST Annual International Conference, representatives from both the NARST and ESERA leadership met for dinner to discuss ways that our organizations might leverage our diverse dimensions and resources to promote a broader reach of science education research. The process for developing MOUs may be found in the Policy and Procedures Manual on the NARST website under the link "About NARST". My sincere thanks to Randy McGinnis, Sharon Lynch, and Manuela Welzel-Breuer for their roles in bringing the MOU to fruition. NARST now has two MOU's—one with NSTA and one with ESERA. I look forward to forging such partnerships with more like-minded organizations and seeing the impact of our work strengthened from the interchange of ideas and practices.



Standing L to R: Randy McGinnis, Sharon Lynch, Fatih Tasar, and Manuela Welzel-Breuer; Sitting L to R: Sibel Erduran, Robert Evans, and Lynn Bryan

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Finally, I hope to instigate major changes in the electronic communications of the organization. One of the primary means of enhancing communication within the organization and with those external to the organization is through our website and social media. Starting this summer, I would like NARST to embark on a long-term agenda to make information more current and accessible and collaboration more feasible by taking advantage of electronic communication capabilities. To this end, the NARST Board approved a position for a Director of Electronic Communications in October 2012, and a position announcement was posted in February 2013. I am pleased to let you know that Dr. Randy Yerrick, Professor at SUNY Buffalo and longtime NARST member, has accepted this position and will be diligently working with NARST to improve its electronic communications. The major tasks of this position include providing professional electronic communication advice to NARST leadership; serving as a liaison between the leadership team, Potomac Digitek (PODI), and Drohan Management Group (DMG); providing strategic direction for — and development of — NARST's electronic communications capability; ensuring high-quality and consistent standards on the website; and ensuring that the NARST website is current. Randy will begin his position in June 2013.

With the year ahead in mind, I would like to welcome new members of the NARST Board of Directors. Valarie Akerson is our President-elect. In addition, three new members have been elected to the NARST Executive Board: Pauline Chinn, University of Hawaii-Manoa, who will co-chair the Membership and Elections Committee; Jerome Shaw, University of California-Santa Cruz, who will co-chair the Equity and Ethics Committee; and Gillian Roehrig, University of Minnesota, who will co-chair the Publications Committee. In addition, the new NARST International Committee chair is Hsiao-Lin Tuan, National Changhua University of Education. And, I am excited to welcome our first graduate student board member, Jodi Devonshire, from University of Missouri-St. Louis. More from Jodi and the efforts toward enabling the graduate student board member to be a voting member (as opposed to an ex-officio member) of the NARST Executive Board may be found on a later page of this issue. Please remember to vote!

I look forward to working with the NARST board, committees, strands, research interest groups, and the entire membership this coming year to advance our mission of improving science teaching and learning through research. However, the welcoming of new board members means that other board members have rotated off the board. A special thank you for

three years of dedicated service to NARST goes to our outgoing Past President, Randy McGinnis; Stephen Norris who chaired the Research Committee; John Falk who chaired the External Policy and Relations Committee; Xiufeng Liu, who chaired the Awards Committee; and Sibel Erduran, who chaired the International Committee. It was a pleasure to get to know all of the outgoing board members and work with them during my year as President-Elect. I appreciate their commitment to serving the NARST organization.

Awakening Dialogues: Invitation to the 2104 NARST Annual International Conference

The 2014 NARST Annual International Conference will be held in Pittsburgh, PA at the Wyndham Grand Pittsburgh Downtown from March 30–April 2, 2014. The theme of the conference is *Awakening Dialogues: Advancing Science Education Research, Practices, and Policies*. The impetus for this theme originated from a position paper that I wrote with Dr. Mary Atwater many years ago (Bryan & Atwater, 2002). The article was essentially a call for research that aimed to “awaken dialog within science education that exposes and makes explicit longstanding, implicit ‘assumptions, attitudes, beliefs, and practices’ (Cochran-Smith, 2000) that serve to undermine a fair and equitable education” (Bryan & Atwater, 2002, p. 823). The idea of “awakening dialogues” within the science education community provides NARST with an opportunity to have open and honest discussions about some of the most challenging issues in our field that may be limiting our progress. *What do you think are the most salient issues that the global science education research community needs to address over the next few decades? What “elephants in the room” have you encountered— longstanding issues we know exist, but have yet to openly discuss?* The 2014 conference theme, “Awakening Dialogues,” is aimed at tackling these challenging issues and engaging in dialogues that promote opportunities for thinking critically, understanding perspectives, and reframing practices. Engaging in such dialogues should not be construed as an outlet for disparagement of other opinions, but rather a forum to sharpen understandings, frame new inquiries and reframe existing ones—moving science education to the next generation of research, practices, and policies. I invite you to link your proposals for papers, symposia, posters, pre-conference workshops, etc. to ways in which your ideas contribute to new dialogues within our science education community. Look for the call for proposals to go live by July 1, 2013.

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With regard to future conferences, I would like to note that the NARST Executive Board passed a motion at the Spring 2013 Board Meeting that articulates guidelines for the NARST Executive Board and the NARST Executive Director to take into account when searching for future NARST Annual International Conference venues. These guidelines were developed based on the responses from the survey designed by the Ad hoc Committee on Long-Range Conference Planning and administered at the Awards Luncheon of the 2012 NARST Annual International Conference. Please see the January 2013 edition of *e-NARST News* (p. 3) for the results of the survey. The guidelines that were approved include:

1. Be located in a large vibrant urban area where there are many options for dining and cultural activities, and places to walk and run;
2. Be located in the same or a nearby geographic area as the AERA and NSTA Conferences (every other year for each), as has been NARST's custom, and continue to be scheduled during the March-May time frame to coincide with AERA or NSTA;
3. Be held either before or after the NSTA or AERA meetings, doubling the possibilities for booking a suitable venue in any given year;
4. Continue to avoid religious holidays;
5. When circumstances allow, be held outside of the continental USA and Canada; and
6. Consider projected total costs to conference participants (conference registration, room, food, local transportation and incidental costs), in addition to the total cost to the NARST organization.

Thank you to Sharon Lynch who chaired the Ad hoc Committee on Long-Range Conference Planning, as well as members of this committee who included Xiufeng Liu, Steve Norris, Sibel Erduran, and Felicia Moore Mensah.

Final Remarks

As we prepare for the next annual meeting, I want to take a moment to reflect on the 2013 Annual International Conference in Puerto Rico. A heartfelt thank you to the many people involved in making the 2013 NARST Annual International Conference such a success. The annual meeting is a tremendous feat to pull off each year, and this year in particular. Thank you to all of those who worked on the front line and behind the scenes to rapidly respond to issues in an effort to make the annual meeting experience as positive as possible for all attendees. It took the collective work of the Executive Director, Bill Kyle; the Program Committee, including Sharon Lynch (Chair), Toni Sondergeld, and the strand coordinators; the Board of Directors; the proposal reviewers; graduate student volunteers; representatives from Drohan Management including Robin Turner, Taylor Entsminger, and Ilene Goldberg; and all of the presenters who chose NARST as an outlet for their scholarship. We had yet another year of record-breaking attendance of 1257. The conference was filled with opportunities to challenge our thinking and advance our individual and collective work—from thought-provoking plenary speakers, standing-room only symposia, and stimulating paper sessions. Then, there was a first ever session convened through Google Hangout in which youth researchers (middle, high school, and post-secondary youth) presented their work from four different projects, from locations spanning thousands of miles and multiple time zones. But it wasn't all work and no play—with the *JRST* 50-year celebration and excursions such as the field trip to El Yunque, there were many opportunities to enjoy the company and camaraderie of colleagues.

In closing, I thank you for your confidence in electing me as your NARST president. I will do my best to communicate with the membership and build relationships that advance our mission to improve science teaching and learning through research. I look forward to seeing you at the 2014 NARST Annual International Conference in Pittsburgh. Please do not hesitate to contact me (labryan@purdue.edu) if you have questions, suggestions, and/or comments.

NARST IMPLEMENTATION RESPONSE TO NGSS: WRITING TEAMS HARD AT WORK

SHARON LYNCH AND LYNN BRYAN

We announced the NARST Implementation Response to NGSS in the Winter 2013 edition of *ENARST News*. We were pleased to see the big turnout to discuss the effort at a presidential symposium at the 2013 NARST Annual International Conference and for the overall positive response to the idea of NARST contributing to policy discussions on the implementation of the NGSS. Given that this symposium was scheduled for the last session on the last day of the conference and had a standing room only audience, it appears that this effort is going to generate interest and substantive discussions.

In April, Sharon Lynch attended a meeting to discuss the rollout of the NGSS at the National Research Council and came away with the three important ideas. First, it was clear that the implementation of the NGSS is going to unfold over a period of several years, given the many components that need to be put into place. In a recent article in *Education Week*, Stephen Pruitt of Achieve and the lead of the NGSS counseled a slow start and patience with the implementation of NGSS, in order to provide ample time for the inevitable changes required by adopting the NGSS. Second, there is a role for NARST and NARST members to play as NGSS implementation efforts advance, especially as scholars who will initiate new research on the implementation of the NGSS, and as scholars who know the current research base. Third, the main issue on everyone's mind is implementation, and this NARST effort is timely and appropriate.

The writing teams are crafting position papers addressing eight topics related to the implementation of the NGSS. Teams consist of the following contributing members, with at least one member per team providing an equity lens:

ACCOUNTABILITY

Sherry Southerland, Chair, Florida State University
John Settlege, University of Connecticut
Nancy Brickhouse, Equity Issues, University of Delaware

ASSESSMENT

Maria Araceli Ruiz-Primo, Chair, University of Colorado, Denver
Lou DiBello, University of Chicago, Illinois
Guillermo Solano-Flores, Equity Issues, University of Colorado, Boulder

CURRICULUM MATERIALS

Janet Carlson, Chair, Biological Sciences Curriculum Study
Betsy Davis, University of Michigan
Cory Buxton, Equity Issues, University of Georgia

ENGINEERING

Senay Purzer, Co-Chair, Purdue University
Tamara Moore, Co-Chair, University of Minnesota
Dale Baker, Equity Issues, Arizona State University
Leema Berland, University of Wisconsin-Madison

EQUITY

Allejandro Gallard, Co-Chair, Georgia Southern University
Felicia Mensah, Co-Chair, Columbia University
Wesley Pitts, Lehman College
Ashley Kaepling, Georgia Southern University

INFORMAL SCIENCE EDUCATION

John Falk, Chair, Oregon State University
Jonathan Osborne, Stanford University
Rena Dorph, University of California, Berkeley

PROFESSIONAL DEVELOPMENT

Eric Banilower, Co-Chair, Horizon Research Inc.
Julie Gess-Newsome, Co-Chair, Willamette University
Carolyn Landel, Independent Education Consultant
Deborah Tippins, Equity Issues, University of Georgia

TEACHER PREPARATION

Mark Windschitl, Chair, Equity Issues, University of Washington
Cindy Passmore, University of California, Davis
Christina Schwarz, Michigan State University

As of June 1, 2013, we are conducting internal reviews of the papers. The next step will be to allow the teams to reflect on the internal reviews, make revisions as perceived necessary, and ready the second drafts for external reviews open to all members of NARST. This will allow an open discussion among members, and an even more thorough review of the papers, as we head down the road to final drafts.

Another effort to step outside of the NARST confines and engage in discussion on NGSS on a national level was the Presidential session at the Annual Conference on the rollout of NGSS organized by Chris Lazzarro of the College Board, with representation from the National Research Council, the Council of State Science Supervisors, and NARST. As a result of this increased collaboration, Lynn Bryan was invited to and will represent NARST at the June meeting of the Council of State Science Supervisors called *Building Capacity for State Science Education*.

We hope that many NARST members will contribute to the reviews of the NARST Position Statements in a way that is COLLABORATIVE, COLLEGIAL, RESPECTFUL AND FRIENDLY. We so much appreciate the contributions of writing team members to this effort and look forward to NARST's engagement in science education.

PRESIDENTIAL ADDRESS



SHARON LYNCH

The following is the text of the address of the 2013 NARST President, Sharon Lynch given in Puerto Rico on April 8, 2013. Please [click HERE](#) for the PowerPoint Presentation that accompanies the text.

Slide 1. Introduction

It is a pleasure to talk to you today about our research on STEM education. The focus of my talk is on inclusive STEM Focused high schools, a relatively new phenomenon in the US.

These schools are springing up all across this country. Their innovative designs hold promise for a new kind of school community and may help to democratize STEM education in the US. That is the thesis of my talk today.

Slide 2. Credits

We call our project OSPri, Opportunity Structures for Preparation and Inspiration. I want to acknowledge our research group, some of whom are in this audience today.

Our study merely reflects the hard work, creativity, and drive of the inclusive STEM-focused school leaders and innovative dedicated teaching staff. They deserve the credit, and we thank them for allowing us to document what their schools are doing, and their visions of STEM education.

Slides 3 -4. Definition of STEM Education

In the US and internationally, STEM is associated with the economic performance. There is a need for improved performance in STEM fields or for more students able to STEM-related work. For example, I recently met the policy director from the State of Maryland at an education meeting. He projects for the top 15 jobs needed by Maryland in the next decade, 12 are STEM related. We all are seeing an intense focus on STEM education from political leaders, business and industry, and philanthropic foundations and NGOs.

The definition reflects that STEM's interdisciplinary nature, how research is actually done in real world settings. An important aspect of the definition is the ties to applications that connect STEM learning in school with the community, and the community with the global economy.

Implicit in the definition is the recognition that STEM literacy is for all. This leads to the goals of our study on inclusive STEM focused high schools.

Slides 5 and 6. Inclusive STEM Focused High Schools

Inclusive STEM-focused high schools are new, most having opened the last 5 to 10 years. There are perhaps 300 in the US. These schools are not the same as selective high schools designed for students who have already demonstrated high achievement or potential in STEM. That type of school has been around for decades. Some NARST colleagues have conducted research on schools for gifted and talented students and their work contributes substantially to a better understanding STEM school models.

However, we are focused on inclusive STEM schools designed for "regular students" who want to concentrate on STEM subjects. They may be local schools or magnet schools. Some are charter schools.

Inclusive STEM schools have open admissions with few or no requirements. Many rely on lottery systems for admission. Their mission is to increase participation of students who have been under-represented in STEM fields. The student groups targeted may include students from families of limited means OR students of color. Some schools focus on students who are the first generation in their families to attend college. These schools are gender balanced, sometimes by design, sometimes simply as a reflection of the lottery system and the applicant pool.

These schools are often born of community efforts. The community can include business and industry, museums and science centers, community colleges and universities. Many have received seed funding from their state or local boards of education, and from foundations.

Slide 7. Importance of our Research Study

We think that our study is important because there are hundreds of STEM schools springing up across the US. President Obama has called for the establishment of 1000 new STEM schools in the next decade. Some states have built inclusive school models into their state level STEM education plans. OH, TX, NC, WA, and TN are examples.

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Yet, there is almost no published research on inclusive STEM focused schools, and their effectiveness has not been established through credible research evidence.

There is no one established model for these schools nor umbrella philosophy or organizational structure. The schools are exciting to study because they are constantly innovating, and extremely flexible. Our OSPrl study is a qualitative study, designed to explore 12 well-established or exemplar ISHSs using in depth case studies.

In addition, I am involved with companion study, called ISTEM, headed by Barbara Means of SRI. ISTEM will shed some light on the effectiveness of ISHSs in one state, NC. If you are curious about this pair of studies, we will be talking about them tomorrow, in a related paper set. These studies and others currently in progress are the beginning of a new program of research in science education that should help the field better understand the opportunity structures provided by inclusive STEM-focused high schools.

Slide 8. Opportunity Structures

I have been curious about the origin of the term, opportunity structure. It apparently was coined by a British sociologist, Kenneth Roberts. At that time, theories about how youth came to take jobs focused on deliberate personal choices or hard work as young people matured. Roberts' research showed that finding a good job relied more on the actual physical and social affordances found in some geographic locations, but not others. According to Roberts, determinants of career included the home, the school; peer groups; and local job opportunities. Roberts later expanded his opportunity structure model to include factors such as distance to work, job qualifications, informal contacts with businesses, ethnicity and gender, and cyclical factors operating within the economy that result in a demand for labor with high skill levels. In other words, it is the opportunity structures present in a young person's immediate environment that determine career choices.

It seemed that this notion of opportunity structures aligns well with the mission of inclusive STEM focused high schools. If their mission is to serve students traditionally underrepresented in STEM fields, then they must create new opportunity structures for their students.

Slide 9. STEM Education Options

For STEM education, the choice may not be "school or work" but "school and work". Experiences in school and outside the walls of the school build STEM knowledge and skills; develop noncognitive factors or 21st Century Skills; and help students to expand their STEM social capital in deliberate ways, guided by the school.

How does this actually work? How do inclusive STEM focused schools build opportunity structures?

Slide 10. Aim of the Study

The aim of our OSPrl study, is to find out. Our research questions ask:

Is there a core set of critical components shared by well-established, promising ISHSs? Are there other critical components that emerge in the course our study? Can we eventually build a model that reflects how exemplar STEM schools achieve their success?

Slide 11. Critical Components

To conduct the case studies, we did not want to wander into the schools blindly, but to be systematic and focused. Through a review of the literature, we identified 10 candidate critical components that seemed crucial to inclusive STEM schools. We designed our site visits around these 10 candidate components, and use surveys, interviews, classroom observations, and focus groups with key players to find evidence for them. The process also allows us to find additional components, not on this list, that are critical to a school model. These emergent themes may be found across school models, and open up our work to new ideas not obvious in our initial review of the literature.

I hope this lists seems logical and not so surprising. If you can't see it, I will provide a link to the OSPrl website at the end of this talk. These slides will be posted on the NARST website, as well.

Slide 12. Components Research

We look to see how and whether the 10 critical components are found in each school's design and implementation, as well as for evidence for enactment in a school's records of student outcomes. We also capture each school's unique context, the school's personality stamp that enables or constrains each component.

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We will have 8 site visits completed by the end of the year. Although it is still early in our study, I wanted to share with you a small notion of what we are finding in inclusive STEM focused high schools. Given the theme of this conference and some deserved skepticism about STEM education and the forms it may take in practice, these school-level accounts should be tantalizing.

Slide 13. Demographics

This slide compares the demographics of three of STEM schools in our study in the top row, with state demographics in the bottom row. The shape of the population in the STEM school mirrors the state population below it, or if it does not, it is because the STEM school has a greater proportion of students underrepresented in STEM. In addition, I note that the numbers of girls attending these schools is about the same as the number of boys.

Slide 14. Test Scores

This slide provides a simple look at student test score outcomes in three STEM schools compared to state-level results on science and math exams. The green caps on the bars show that the averages of STEM schools are consistently higher than state outcomes, in pink below. Recall that these schools have open admissions and a lottery system. These schools might be characterized having a “range of regular students” and yet they exceed state averages.

Slide 15. Other Outcomes

But aside from test scores, students in these three schools also have exceptionally high graduation rates, college admissions rates, and college attendance rates. In two of the three, virtually 100% of the students are admitted to college. Moreover, follow-up data show that 75% of graduates are attending college full time, about double the national average. The third school is rural and has more challenges, but its students are achieving much higher college admissions rates than other schools in the school district and state. These successes are occurring during hard economic times, for students of limited financial means, and who may be from families where no one has ever attended college.

How are these inclusive STEM schools achieving such success with students who have traditionally been underrepresented in STEM? What are the opportunity structures that they build for their students?

Slides 16-17. Explaining Success

The response to this question can be divided into three categories. The first category is “cognitive factors” or how STEM curriculum and instruction programs are designed. First, these schools provide more STEM course work than typical. In one school, they manage 5 years of science and math in four years plus two years each of engineering and technology.

In other schools, the goal is to move students quickly through high school and enroll them in college level courses as they complete high school graduation requirements. For instance, in one school, about half of the students graduate from high school having already earned two years of university credits. This is at no cost to students and their families. This is a huge financial savings. It places students from low SES families well on way through college. It shows students that a college diploma both within financial reach and within their grasp as capable young learners. This is a good example of an opportunity structure. The instructional models that are used, vary. Some schools use Project based learning 100% of the time in all courses. Other schools use a more traditional approach that purposely emulates college instruction. No matter the instructional model enacted, both students and teachers have more hours of instruction delivered in more targeted and innovative ways than is typical in many comprehensive high schools.

Slide 18. Non-cognitive Factors

This slide summarizes non-cognitive factors that inclusive STEM high schools help their students develop. They are the behaviors, skills, attitudes, and strategies that are crucial to academic performance, no matter the subject. They include the ways students interact with teachers, other students and the STEM subject matter. They are made relevant by the STEM experiences that they encounter outside the walls of the school, affecting students’ attitudes, motivation, and performance. These non-cognitive skills are transferrable to other aspects of a students’ lives, now and if the future.

One example is oral communication skills and the ability of students to talk about their work in STEM projects and field experiences. Students speak clearly, reflectively, and convincingly to anyone including experts in the field. They rely on evidence to build their arguments. Students and their parents constantly marvel at this developing skill, and the confidence and poise that emerges as if by magic.

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STEM schools use data systems to monitor student performance in ways that are immediate and responsive. The data systems provide specific supports. They help students get on track and stay there. For instance, in one school, if a teacher learns that a student could not do the assigned algebra homework in a 9 AM class, parents are contacted by noon, and the student attends a tutoring session at 3 PM. Students are not allowed to fall behind. Providing students with supports like this builds success, that in turn builds confidence and STEM identities.

Character and values are part of each school's mission. This is hard to describe, but values, habits of mind, or pillars of character, are not mere slogans. The schools emphasize responsibility, honesty, caring for one another and the community. The school is seen as "our house" and students are family. Such values are woven into the fabric of the school. They support individual student success, as students support one another.

Slide 19. Developing Social Capital.

STEM schools intentionally provide students with opportunities that they would not otherwise encounter. Students learn about STEM college majors, jobs and careers, and to work with STEM professionals in meaningful community settings.

Because a big goal is college admission, some schools have college preparation and application programs that would be the envy of any striving middle class parent. The programs are designed for students who are the first in their families to attend college. The goal is to get students into the best college possible. BUT it is students' STEM knowledge and skills that provide the means for them to stay in college and to be successful once they get there.

Slide 20-22. Insights and implications

What are the insights and implications of the OSPri study, as we complete the second year? In summary, new inclusive STEM high schools seem to be doing remarkable things for youth underrepresented in STEM. They are creating STEM opportunity structures to expand students' sense of self efficacy in STEM and build social capital. They rely on families for admission to the school and for cooperation and support throughout high school, especially important for navigating the college selection and admissions process.

They reach out to gather all available community resources to develop opportunities for students, and students get more involved with their communities through projects that develop character and values as well as STEM expertise. This has the effect of creating a new kind of STEM community, much broader and adaptive for students and community members. The community is aware of students' successes and accomplishments and the students come to be viewed as resources in the new STEM community. These schools may be a game changer in education, democratizing STEM for students who have been underrepresented in science, mathematics, engineering and technology. Inclusive STEM-focused schools are test beds for STEM education. They are flexible and innovative. They can help us see what is possible for 21st century schools.

STEM schools may be seen as a means to boost local economies as they reduce inequalities for the families that live there. These are not only twin goods, they are increasingly seen as interdependent. We hope in the next two years to come back to NARST with research results and a model that better describes inclusive STEM schools. It is exciting to see what these innovative new schools are doing and to share this early work with you.

Thank you.

EQUITY AND ETHICS COMMITTEE



FELICIA MOORE MENSAH AND JEROME SHAW

The Equity and Ethics (E&E) Committee provides leadership and guidance to the organization on issues of equity and ethics including, but not limited to, gender, ethnicity, socioeconomic status, disabling conditions, sexual orientations, language, national origin and religion. The Equity and Ethics Committee is excited to update you on some of the highlights from the NARST 2013 annual conference. First, we would like to welcome Jerome Shaw as co-chair of the E&E Committee, and our new committee members—Brian Fortney, Deb Morrison, and Leon Walls. And, we want to thank three members who completed their service as members of the E&E Committee—Matthew Weinstein, Geeta Verma, and Bhaskar Upadhyay.

Committee Sponsored Session Highlights

We had a wonderful time in Puerto Rico! We were able to take advantage of the culture and location and provided several opportunities for networking and professional growth during the conference. There were three E&E Committee Sponsored Sessions, which highlight the work and goals of the E&E Committee.

First, the Pre-Conference Workshop was held for scholars of color and individuals interested in scholarship involving equity and social justice in science education. Workshop participants were able to network with facilitators, representing a spectrum of various career stages and research interests and gained insights from eminent scholars in the field. Similar to past years of the Pre-Conference Workshop, participants discussed current topics, methods of equity, and social justice research, and shared experiences for successful transitions from doctoral student to full professor.

The New Scholars Symposium highlighted our 2012 Basu Scholars in a well-attended poster session entitled, “STEM Education: Social, Cultural, Epistemological, and Pedagogical Issues.” The session ended with an interactive discussion where the Basu Scholars made connections around their research interests. We would like to announce the 2013 Basu Scholars—Shirly Avargil, Julie Brown, Gina Marie Ceylan, Emily Dare, Deb Morrison, and Christopher Wright. These scholars will be invited to attend the Pre-Conference Workshop, and present their work in the New Scholars Symposium for NARST 2014.

The Hedy Moscovici Teacher Education Research Grant was a new initiative of the E&E Committee this year. It acknowledged the work of an emergent scholar from an underrepresented group within the NARST organization, and within the critical time frame of pre-tenure (years 3–6). This was a one-time award to support a project of engagement with issues related to diversity and equity broadly defined in the area of teacher education. The grant acknowledges the work of our late friend and colleague, Hedy Moscovici. The recipient for this grant was Dr. Vanessa Dodo Seriki, University of Houston-Clear Lake, TX for her research project entitled, “Examining the Impact of a Culturally Responsive Science Methods Course on Preservice Teachers’ Culturally Responsive Teaching Self-Efficacy.”

The E&E Committee and the Continental and Diasporic Africa in Science Education Research Interest Group, or the CADASE-RIG, co-sponsored a session to discuss the findings from the Horizon Research Group. Horizon conducted a large-scale study examining the distribution of resources (human and other kinds) across K-12 schools and classrooms nationally. An international panel of science educators provided critique and comment on equity issues relevant to the report.

Finally, the E&E Committee held its annual Equity Dinner at the La Barrachina Restaurant, the birthplace of the (in)famous Piña Colada. The Committee would like to thank Alberto Rodriguez for his hard work in securing a venue for the Equity Dinner. We had almost 100 people in attendance for the dinner.

New and On-going Initiatives

The E&E Committee has an active Google site that we use for planning, working, and keeping historical records for the annual conference. The site has both private (workspace for committee members) and public (friends and volunteers) functions. If you would like to be added to the Google site, contact Deb Morrison or Alicia Trotman, and we thank Deb and Alicia for setting up the site, which made our work as a committee efficient and fun.

During the fall, the E&E Committee will make plans for NARST 2014 and will work on the NARST Code of Ethics, an initiative started a couple of years ago. We welcome all NARST members to support the many activities and initiatives of the Equity and Ethics Committee. If you have suggestions or want to become more involved in the work of the E&E Committee, please contact us, fm2140@tc.columbia.edu, or jmlshaw@mac.com, or one of the E&E Committee members.

Chair/Co-Chair: Felicia Moore Mensah and Jerome Shaw



Members:

Rola Khishfe
Regina Wragg,
Deborah Roberts-Harris
Seema Rivera
Irene Osisioma
Jacqueline Samuel
Cassie Quigley
Brian Fortney
Deb Morrison
Leon Walls

INTERNATIONAL COMMITTEE NEWS

HSIAO-LIN TUAN

The NARST International Committee awarded 31 scholarships to doctoral and early career researchers from Bangladesh, Chile, China, Cyprus, Israel, Lebanon, South Africa, South Korea, Sweden, and Turkey. Congratulations to Yossy Machluf, Georgios Olympou, Elizabeth Mavhung, Sedef Cambazoglu, Mustafa Topcu, Anna Jobber, Seda Cavus, Aysegul Tarkin, Nihal Ozturk, Busra Tuncay, Idit Adler, Harika Aslan, Aylin Cam, Gamze Cetinkaya, Cheng Liu, Yoonsook Chung, Ceylan Cigdemoglu, Hafizur Rahman, JiMun, OraKahana, Claudia Vergara, Eunjin Kim, Hilal Yanis, Sevgi Ipekcioglu, Jale Ercan, Nirit Alon, Sevgi Aydin, Keren Mintz, Betul Demirdogen, Sahar Alameh, and Msimanga Audrey. We also want to congratulate Rekha Koul who received the Linking Science Educators Program (LSEP) award, and Ryan Nixon who received a NARST Ph.D. School Scholarship.



The annual conference in Puerto Rico included a research presentation from Professor William Kyle, the first recipient of the LSEP award. Dr. Kyle and his team members from Norway and Malawi presented their interesting research integrating face-to-face and virtual presentations allowing the audience to hear from international members from around the world.

This year, NARST approved a memorandum of understanding with the European Science Education Research Association (ESERA) that provides for each organization to present at the annual conferences. For example, the International Committee organized a session at the NARST conference led by members of ESERA. The session was chaired by Manuela Welzel-Breuer, ESERA President, and Sibel Erduran, with Ken Tobin as the discussant. At the annual ESERA meeting in September, Sibel Erduran will lead a symposium and a group of NARST members will present their research.

Finally, we would like to acknowledge the efforts and time of the committee members. Thank you to Issam Hafez Abi-El-Mona (Rowan University), Deniz Peker (Virginia Tech) and Ismail Marulcu (Boston College) for their contributions during their term as members, and welcome to new committee members, May May Hung Cheng (Hong Kong Institute of Education), Marissa Rollnick (Witwatersrand University), and Alandeon Oliveira (State University of New York). We especially extend our appreciation to Sibel Eduran. As the International Coordinator, she established the NARST Ph.D. School Scholarships to encourage doctoral students to broaden their international experiences.



PUBLICATION ADVISORY COMMITTEE

CAROLYN WALLACE AND GILLIAN ROEHRIG

The Publications Advisory Committee (PAC) had a very productive year. The Chair, Carolyn Wallace, wishes to thank the outgoing members for their substantial contributions and welcomes her new Co-Chair, Gillian Roehrig, and new members, Amelia Gotwals, Julie Bianchini and Gayle Buck.

Teacher/Practitioner Scholarships

The PAC was pleased to award 15 scholarships to teachers to support their travel and participation in the conference in Puerto Rico. These individuals and their mentors included:

Teacher	Mentor
Michael Clinchot	n/a
Erin Hashimoto Martell	n/a
Haven Daniels	n/a
Alice Cottaar	n/a
Natasha Johnson	Mary Atwater
Flora Ayulet	Irasema Ortega
Christi Browne	Ann Rivet
Nirita-Lavie Alon	Tali Tal
Dan Malone	Kathy Malone
Linda Tugurian	Sarah Carrier
Lynn Gilbert	Meena Balgopal
Suzanne Reeve	Andrew Shouse
Francine Wizner	Alan Oliveira
Galit Hagay	Ayelet Baram-Tsabari
Bill Palmer	Andrew Shouse

Selection of JRST Articles for the NSTA Reading List

PAC members worked diligently to identify the five articles from JRST 2012 that were most applicable to classroom teachers for inclusion in the summer NSTA reading list. These articles are being provided to teachers free of charge. The five articles most valuable for teachers are:

Jin, H., & Anderson, C. W. (2012). A learning progression for energy in socio-ecological systems. *Journal of Research in Science Teaching*, 49 (9), 1149-1180.

Berland, L. K. & Hammer, D. (2012). Framing for scientific argumentation. *Journal of Research in Science Teaching*, 49, 1, 68-94.

Mallya, A., Moore, F. M., Contento, I. R., Koch, P. A., & Calabrese Barton, A. (2012). Extending science beyond the classroom door: learning from students' experiences with the *Choice, Control and Change (C3)* curriculum. *Journal of Research in Science Teaching*, 49 (2), 244-269.

Noble, T., Suarez, C., Rosebery, A., O'Conner, M. C., Warren, B., & Hudicourt-Barnes, J. (2012). "I never thought of it as freezing": how students answer questions on large-scale science tests and what they know about science. *Journal of Research in Science Teaching*, 49 (6), 778-803.

Suriel, R. L., & Atwater, M. M. (2012). From the contribution to the action approach: white teachers' experiences influencing the development of multicultural science curricula. *Journal of Research in Science Teaching*, 49 (10), 1271-1295.

MEMBERSHIP AND ELECTIONS COMMITTEE

BRYAN BROWN AND PAULINE CHINN CO-CHAIRS

As a non-profit organization designed to promote and sustain excellence in science education research, NARST has maintained a tradition of self-governance. As an association, our identity is deeply connected to our capacity to communicate who we are and what we do. As a result, those charged with the responsibility of leading NARST become vitally important to helping the organization meet and define its goals.

Given this challenge, the selection of NARST leaders becomes a vital component of the organization's progress. So the question remains, who leads NARST? The answer is a simple and resounding; you! Every year the Membership and Elections committee has the responsibility of seeking and selecting NARST's new leadership. As a committee, we want NARST members to understand that we welcome all NARST members to nominate themselves and their colleagues to positions of leadership. Our goal is to identify high quality leaders who represent intellectual, cultural, academic, and ideological diversity that makes NARST such a unique organization. Therefore, in the weeks and months that follow, please pay close attention to NARST's call form nominations and nominate yourself or your colleagues that you think are best suited to lead NARST in the future.

MEMBERSHIP AND ELECTIONS COMMITTEE

Bryan A. Brown (Co-Chair)	Stanford University
Sharon Lynch (Co-Chair)	University of Washington
Pauline Chin	University of Hawaii
Eileen R. Carlton Parsons	The University of North Carolina
Yehudit Judy Dori	Technion – Israel Institute of Technology
Mike Smith	Mercer University
Takumi Sato	Michigan State University
Dale Baker	Arizona State University
Christopher Wright	University of Tennessee
Sonya Martin	Seoul National University
Toni Sondergeld	Bowling Green State
Catherine Hoehler	Southern Connecticut State University
Jodi Devonshire	University of Missouri, St. Louis
Marcelle Siegel	University of Missouri



Special Bylaws Change Election

We would also like to bring your attention to a special election that will occur during the 2013-2014 academic year. The NARST board voted to approve a potential change in the bylaws of the organization. This bylaws change would allow for a graduate student board representative who would serve on the board with full voting rights. In order for this change to be approved we will need well over a majority of the membership of NARST to participate in a special election. Given our growing membership of nearly 1,400 members we will need over 700 NARST members to participate in this vote in order for the change to be approved.

As a result, the membership and elections committee is inviting you all to promote participation in this upcoming election. We invite you to e-mail your colleagues, students, and friends to encourage them to vote when the special election is announced.

In closing, the members of the membership and elections committee invite you all to lead in a number of ways. First, if there are issues our concerns that you have about NARST please do not hesitate to e-mail our committee co-chairs Bryan Brown (brbrown@stanford.edu) or Sharon Lynch (slynch@gwu.edu) to engage in discourse about ways we can improve NARST. Second, we invite you all to join in leadership positions in a number of ways. We encourage you to sign up to work as a reviewer, strand coordinator, or to run for an elected position in the organization. Third, we truly encourage you all to participate in voting this year. If we are to improve the organization, we need the input and participation of all of our constituencies. We truly encourage you to join in improving the quality of our organization.

IN MEMORIAM: PINCHAS (PINI) TAMIR, 1928-2012



Pinchas Tamir – Pini for his family, colleagues, and students – died at his home in Jerusalem, September 16th, 2012 – the day of Rosh Hashana, the beginning of a new year according to the Jewish calendar. Pini was a leading scholar during more than 3 decades of full academic work, less prolific in recent years due to gradually losing his long and courageous battle against Parkinson's disease that had first attacked him at the height of his career. Pini's work focused simultaneously on research and practice, and while it was carried out mainly in the context of high school biology in Israel, its impact crossed disciplinary and geographic boundaries. Perhaps the prime example is the specially-designed methods for the evaluation of inquiry-oriented learning in biology that were cleverly introduced into the governmental matriculation examination and into routine instruction in Israel, thus harnessing the power of high-stakes tests to actual change in the spirit of intended reform goals. These methods, particularly those assessing laboratory and project work, were way ahead of their time when they were first created in the 1970s. They spread overseas and made significant contributions to the quality of laboratory-based learning across school science and to the development of performance assessments beyond science education.

To understand Pini's academic career path, one should have a look at the preceding 15 years of high school teaching, and go back in time even earlier to decisions taken as a teenager. Born in Tel Aviv in 1928, after being already enrolled in an academic high school, Pini requested to be transferred to the rural Pardes Hanna Agricultural High School that was known for quality agriculture education along with high academic achievement. Immediately following graduation in 1945, he volunteered for the Jewish Brigade that had been part of the British army in World War II, and was deployed to Egypt and to Italy. Pini resumed his interest in agriculture and completed a Master's degree at The Hebrew University in 1951. Subsequently, he returned to his chosen

rural high school as a teacher of biology and horticulture, and manager of the fruit farm – an occupation closely linked to his Master's thesis in which he invented an improved dressing for healing pruning wounds (Tamir, 1953). Despite the dictate of the matriculation examinations and the prevailing traditional teaching, Pini instilled innovations into his classrooms, such as student-centered laboratory work and project-based learning (long before the establishment of the acronym PBL), and initiated teacher collaborations within his school and between schools.

A turning point occurred in 1964, when Pini was selected to the first group of 25 teachers within the team that embarked on the adaptation of the "Yellow" version of BSCS to the Israeli context. This was the beginning of the reform in biology education in Israel in which Pini's academic R & D and leadership in subsequent years played an invaluable role toward sustainable long-term success. Pini's academic journey started in 1966 when a scholarship enabled him to travel with his family to the USA to study at Cornell University. Completing a PhD in science education in 1968, he returned to his Alma Mater, The Hebrew University of Jerusalem – his academic home base ever since. In parallel to assuming a university appointment, Pini resumed his early commitment to the high school biology reform with a change in status: from teacher team member to project leader. Under Pini's leadership, the balance of reform efforts shifted from material production to implementation – not self-evident in curricular projects at that time. This was part of a holistic approach that viewed curriculum development, implementation, teacher professional learning, and student assessments as one interactive, long-term, and coherent process en route to achieving intended goals of inquiry-oriented meaningful learning. All phases of this work were based on, or driven by, research, and generated new research with conclusions that were fed back into practice, in the spirit of what would be now labeled "design research." Pini's long-term research program, carried out with his colleagues and students, addressed all aspects of high school biology, with special interest in long-lasting learning (which was featured in his PhD thesis, Tamir, 1969) and in the school laboratory. It yielded an incredible amount of publications, just a few examples are the pioneering articles on the laboratory (Tamir, 1974, 1977, 1989) and the much cited review on laboratory instruction (Lazarowitz & Tamir, 1994). While primarily intended to push forward a comprehensive reform of biology education in Israel, the work in school biology also served as a platform for research-based pioneering contributions well beyond.

Pini was a curious lifelong learner, intrigued by new ideas even when they were not directly linked to the core of his research, as can be exemplified by his persistent study of cognitive preferences for almost 2 decades and AERA's prestigious Palmer O. Johnson Award for one of the resulting papers (Tamir, 1975). And any short list of Pini's writings should include the chapter on research on teaching in the natural sciences in AERA's *Second Handbook of Research on Teaching* (Shulman & Tamir, 1973). Its roots date back to 1969, when Lee Shulman who spent a sabbatical at The Hebrew University was impressed by a newly appointed staff member and subsequently invited him to coauthor a paper. The result was synergic collaboration and a seminal review that offered the first post-1960s structure for the growing knowledge in science education, with insights that are valid to date.

Pini was a globe trotter, visiting research centers and attending conferences around the world. Through these many travels his work became known, he received feedback and learned, he always shared ideas, and he was happy to contribute to colleagues. Pini's career path shows the benefits of long-term work that intertwines research and practice, and that excellent work in science education has no borders – neither disciplinary nor geographical. NARST recognized Pinchas Tamir's lifetime achievements in 1992 by the Distinguished Contribution to Science Education Through Research Award; he was the first non-American recipient of this prestigious honor.

Submitted by:

Hanna J. Arzi, Independent Scholar,
Tel Aviv, Israel

Avi Hofstein, The Weizmann Institute of Science,
Rehovot, Israel

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PAC Committee Members

Co-Chairs: Carolyn Wallace, Indiana State University; Gillian Roehrig, University of Minnesota

Members:

- Gili Ad-Marbach, University of Maryland
- Julia Plummer, Pennsylvania State University
- Danielle Ford, University of Delaware
- David Long, George Mason University
- Daniel Meyer, Illinois Institute of Technology
- Anat Yarden, Weizmann Institute
- Julie Bianchini, University of California, Santa Barbara
- Gayle Buck, Indiana University
- Amelia Gotwals, Michigan State University

Graduate Student Members:

- Kimberly Barss, State University of NY, Albany
- Bryan Nichols, University of S. Florida, Lakeland

JRST Co-Editors:

- Angela Calabrese Barton, Michigan State University
- Joseph Krajcik, Michigan State University

JRST Assistant Editor:

- Bob Geier, Michigan State University

NEWS FROM NSTA



Kate Scantlebury
NSTA Representative to NARST

NSTA's 2013 area conferences are in Portland, October 24–26, 2013; Charlotte, November 7–9, 2013; and Denver, December 12–14, 2013. The 2014 annual conference is scheduled for April 3–6 in Boston. NSTA's summer congress is being held in Puerto Rico, July 17–20, 2013. The theme for the congress is "Building and Sustaining Teacher Leaders in Science, Standards, and Literacy." The congress agenda and documents are accessible at <http://www.nsta.org/pdfs/2013CongressAgenda.pdf>.

NARST's Publications Advisory Committee identified five "good research worth reading" articles for NSTA's Summer Reading program for teachers. For a list of the five articles most applicable to teachers, please see the Publications Advisory Committee column in this issue. We encourage NARST members to submit articles about their research to NSTA's journals. Information on preparing and submitting manuscripts can be found at <http://www.nsta.org/publications/journals.aspx>.

GRADUATE STUDENT REPRESENTATIVE: JODI DEVONSHIRE



As the newly elected position of graduate representative, I'd like to introduce myself to the NARST members and share some information with you. If you attended the recently concluded 2013 NARST Annual International Conference and the Awards Luncheon in Puerto Rico, you heard the announcement regarding the appointment of the first Graduate Student Representative on the NARST Board. In this position, I have a unique opportunity to bring forward graduate student concerns, ideas, issues and thoughts to the NARST Board of Directors.

Please feel free to email me anytime at jodidevonshire@gmail.com with your thoughts on how the NARST community can better serve our NARST graduate students.

Unlike many organizations, NARST graduate students are full members with full voting rights and privileges. Graduate students comprise about 30 percent of the NARST population. In accordance with the current NARST Bylaws, "the Board is comprised of 13 members who are elected by the members of the Association. The elected members of the Board include: 3 elected Officers (President-elect, President, and Immediate Past-president), 9 elected Directors-at-large, and 1 elected International Coordinator. All elected members of the Board have full voting rights." My current position is an ex-officio member meaning I do not have voting rights. At the April 2013 Board Meeting, the Board unanimously approved a motion from the Membership and Elections Committee to change the Bylaws as follows: "the Board is comprised of 14 members who are elected by the members of the Association. The elected members of the Board include: 3 elected Officers (President-elect, President, and Immediate Past-president), 9 elected Directors-at-large, 1 elected Graduate Student Representative, and 1 elected International Coordinator. All elected members of the Board have full voting rights." This would allow for the addition of an elected Graduate Student Representative, changing the Board from 13 elected members to 14 elected members, which would include a Graduate Student Representative with full voting rights.

Article IX of the Bylaws focuses upon the Amendment of Bylaws. It states "any changes and/or amendments to the Bylaws will be submitted to the Board. Upon approval by the Board, the proposed changes and/or amendments will be submitted to the membership for approval. If a majority of the membership votes in favor of the changes and/or amendments, then they shall be incorporated into the Bylaws and become effective immediately."

Thus, the recent Board action allows the entire NARST membership to vote whether to change the Bylaws to increase the numbers of voting members from 13 to 14, while specifying that the increase in voting members will be the elected Graduate Student Representative.

The NARST Bylaws require the majority of the ENTIRE membership to vote in favor of the change. In the coming weeks, please watch for more announcements regarding this important vote, which will be held online. We must have as many members as possible vote in order to meet the required majority vote. Be on the lookout for more voting information and please encourage your NARST friends and colleagues to get out the vote!

RESEARCH COMMITTEE

MARIA VARELAS

Research Interest Groups (RIGs) provide a structure within NARST that allows members with particular research interests that are not captured within the existing strand structure to come together and work toward common interests and commitments. Currently, NARST has three RIGs—*Continental and Diasporic Africa in Science Education* (CADASE RIG), *Engineering Education* (ENE-RIG), and *Latino/a RIG* (LARIG). Below the Chairs offer updates about their RIGs.

Continental and Diasporic Africa in Science Education (CADASE) RIG

During the first year of the CADASE RIG, the Steering Committee of nine members met regularly to craft a mission statement and set plans in place for the organization. CADASE mailed a newsletter to its members prior to the 2013 NARST conference. The following CADASE RIG events occurred at the 2013 NARST conference in Puerto Rico: *CADASE RIG meeting*, which was very well attended (over 60 attendees); *Symposium—Unequal Distribution of Resources for K-12 Science Instruction: Data from a Major National Study*, which included a presentation of major findings from this study and a lively and fruitful discussion about the study and its findings; and a *CADASE Response to Unequal Distribution of Resources for K-12 Science Instruction: Data from a Major National Study Symposium*, with six panelists who looked at the study from various perspectives.

The 2013-2014 CADASE Steering Committee presently has 13 members with Jomo Mutegi continuing as the Chair of the Steering Committee and Mary M. Atwater continuing as the Chair of CADASE. CADASE members approved at its 2013 business meeting that the CADASE Steering Committee pursue the publication of a special issue of a journal based on issues pertinent to the education of Black children and member interests. The working title of the special issue is presently *Science Education and the African Diaspora: A Critical Global Perspective*. In addition, CADASE Steering Committee is working on a budget to submit to the NARST Executive Board, and is determining its activities for the 2014 NARST conference in Pittsburg. CADASE now has 71 members.

Chair: Maria Varelas

Members:

Joy Barnes-Johnson	Irasema Ortega
Shari Britner	Celeste Pea
Hye-Eun Chu	Senay Purzer
Sarah Haines	Kate Scantlebury (Ex officio)
Deborah Hanuscin (Ex officio)	Jessica Thompson
Richard Lamb	Julianne Wenner
Irene Neuman	



Mary Atwater



Jomo Mutegi

Engineering Education (ENE) RIG

ENE-RIG was approved by the NARST Executive Board in October 2012. The new *Framework for K-12 Science Education* and the subsequent *Next Generation Science Standards* put a significant emphasis on the integration of engineering and science. These changes in policy require urgent attention to research in curriculum development, teacher professional development, student learning, and policy implementation. ENE-RIG's mission is to promote research in engineering education and support the dissemination of research in engineering education and design that is relevant to science education.

ENE-RIG has successfully held its first meeting in Puerto Rico with the participation of 46 NARST members. The general objectives of the RIG were reviewed, as well as the future direction and events. Five board members were nominated and elected at this meeting.

Chair: Senay Purzer, Purdue University

Chair-Elect: Christine (Chris) Schnittka,
Auburn University

Member-at-Large: Cathy LaChapelle,
Boston Museum of Science

Member-at-Large: Marie-Claire Shanahan,
University of Alberta

Member-at-Large: Niva Wengrowicz, Technion

ENE-RIG currently has 55 members. Future activities will include paper sets focusing on engineering, and panels and symposia with invited guest speakers. ENE-RIG's next board meeting is scheduled for Fall 2013. For questions and additional information, please contact Senay Purzer at spurzer@purdue.edu.



Senay Purzer

Latino/a RIG (LARIG)



Regina Suriel

We are incredibly excited to share the great news! LARIG met for the first time during our international NARST meeting in Puerto Rico. LARIG focuses on advocating and supporting scholarly research on the social, cultural, and institutional factors that impact science achievement in the Latin@ (or Latina/o) community. During our meeting, we elected the Executive Committee that will oversee LARIG's goals. Regina Suriel at Valdosta State University is serving as Chair. Sara Tolbert at Arizona State University is serving as Secretary. Alberto J. Rodriguez at Purdue University is serving as Events Coordinator.

Our yearly goals were discussed and delineated. Our plans for this upcoming year include:

1. Establishing a strong national and international network of colleagues to discuss and share research on Latin@ education issues. An online forum will be put in place to facilitate these discussions.
2. Making more visible the Latino academic experience by promoting discussions regarding Latin@ issues throughout the NARST conference, beginning with keynote speakers and cascading to small group workshops.
3. Conducting alternative and actively participatory forums during the annual meeting, inclusive of multiple voices, which raise awareness/consciousness about Latin@ issues in education. Numerous LARIG members volunteered to head subcommittees overseeing different components of our plan. We are thrilled to make prominent a dialogue regarding Latin@ issues in education and look forward to sharing our successes and challenges in the months ahead.

NARST AWARDS COMMITTEE

PATRICIA FRIEDRICHSEN, AWARDS COMMITTEE CHAIR

NARST 2013 Awards

The following awards were presented at the NARST 2013 Annual International Conference in Rio Grande, Puerto Rico, April 8, 2013.

Distinguished Contribution to Science Education Through Research Award

Dale Baker, Arizona State University



Dale Rose Baker is an outstanding figure in science education. She was a pioneer in investigating gender equity issues in the 1990s and continues to be a leading researcher in this field. Her work on gender in science and science education has changed not only the field of equity research but also the way the science education community views this issue. Dr. Baker's work on gender equity was innovative in that she went beyond comparing the dispositions of males and females, and sought to challenge the normative male view of what mattered in science and science education. Her major article, "Letting Girls Speak About Science" (1995) published in *JRST*, was a significant contribution on this theme. Dr. Baker's outstanding leadership in the field of gender equity is a product not just of the quality of her scholarly work; she has also been deeply engaged in fighting actively for her beliefs. For instance, due to her continuing leadership, the NARST Equity Strand has developed a strong and well-respected group within the organization. Dr. Baker has also been recognized as a Fellow of the American Association for the Advancement of Science (AAAS) and as a Fellow of the American Educational Research Association (AERA). While she has been influential in the United States, her work has also been well received internationally.

In brief, Dale Baker has made distinguished and continuing contributions to science education research through her publications, her presentations, as well as her personal engagement when supervising and advising colleagues. Notable leadership includes outstanding scholarly leadership and personal leadership through her open, enthusiastic, and generous mentoring and her work as co-editor of *JRST* from 2002–2005. Finally, *substantial impact* on science education research is shown by the use and value placed on her published scholarly work.

Dale Rose Baker is therefore a most deserving recipient of the 2013 NARST Distinguished Contributions Through Research Award.

Early Career Research Award

Alandeom W. Oliveira, State University of New York at Albany

The NARST Early Career Research Award recognizes Dr. Alandeom Oliveira for his outstanding professional accomplishments. Dr. Oliveira's record of research is exceptional, making him highly respected as an emerging scholar in science education. Dr. Oliveira's work is innovative and has brought a new perspective on science classroom discourse to our field. His research on discourse patterns within science teaching has had a major influence on research and practice, and is marked by highly collaborative partnerships. Dr. Oliveira contextualizes his scholarly contributions within theoretical frameworks including socio-cognitive theory and socio-cultural analytic frameworks. At the same time, Dr. Oliveira works in classrooms with teachers, helping them to analyze their own discourse patterns during science teaching, and supporting them to improve their practice. Dr. Oliveira is an early career scholar who has created an outstanding program of research that addresses important issues in science education reform. As a recipient of the Early Career Research Award of NARST: A Worldwide Organization for Improving Teaching and Learning Through Research, Dr. Oliveira joins his predecessors in setting high standards for future awardees.





JRST Award

Edys S. Quellmalz, WestEd
Michael J. Timms, Australian Council for Educational Research
Matt D. Silbergliitt, WestEd
Barbara C. Buckley, WestEd

Citation:

Quellmalz, E. S., Timms, M. J., Silbergliitt, M. D., & Buckley, B. C. (2012).

Science assessments for all:
Integrating simulations into balanced state science assessment systems.
Journal of Research in Science Teaching, 49 (3), 363–393.



NARST Outstanding Doctoral Research Award

Lori Fulton, University of Hawaii at Manoa

Dissertation title:

Writing in science: influences of professional development on teachers' practices, beliefs, and student performance

Institution awarding degree: University of Nevada, Las Vegas

Advisor: Jian Wang



Outstanding Paper Award at NARST 2012

Ed Lyon, Arizona State University

Article title:

From evaluation to instructional support: changes in secondary science preservice teachers' assessment expertise

CALL FOR 2014 AWARD NOMINATIONS

Nominees are invited for the following NARST 2014 awards that will be presented at the awards luncheon at the 2014 NARST Annual International Conference in Pittsburgh, PA.

NARST 2014

Distinguished Contribution Through Research Award

NARST seeks to improve science education through research. To this end, the Association desires to recognize and reward individuals who have made significant contributions to, provided leadership in, and had impact on science education through research. 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. This award is the highest recognition NARST can bestow for contributions to science education through exemplary, high quality research.

Nominations for the 2014 Award are due no later than July 31, 2013 to the address below.

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

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 with a letter (of no more than two-pages) supporting the nomination of the person.

Please send the names of nominees **no later than July 31, 2013** to Charles (Andy) Anderson (Chair) at andya@msu.edu AND Gail Jones (Co-Chair) at gail_jones@ncsu.edu.

Charles (Andy) Anderson (Chair)

Gail Jones (Co-Chair)

NARST 2014 Early Career Research Award

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, 2008. All NARST members are encouraged to consider nominating an eligible and deserving early career member. Self-nominations are not accepted.

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

- a) A letter of nomination that 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. The supporting letters need to discuss the context and significance of the nominee's scholarship so that the accomplishments shown on the nominee's vita may be better understood.

Nomination materials should be received by the Committee Chair, Carol Stuessy, at c-stuessy@tamu.edu no later than **November 15, 2013**.

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 Co-Chairs of the Committee.

Carol Stuessy (Chair) c-stuessy@tamu.edu

Bill Cobern (Co-Chair) bill.cobern@wmich.edu

NARST 2014 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, 2013 to submit an expanded ten-page abstract to the committee for consideration for the 2014 NARST Outstanding Doctoral Research Award. Submissions are to be sought from as wide a field of candidates as possible to be inclusive of gender, age and ethnicity.

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 finalists will be asked to submit one unbound copy 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 committee welcomes doctoral dissertations from all research perspectives. The ten-page abstract should be structured to describe clearly the following:

- (1) the purpose or objectives of the study;
- (2) conceptual/theoretical framework;
- (3) research approach/method;
- (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 abstract 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 question 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)?
- (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 able to make a case for the significance of their study to the science education community as a whole; and/or who convinced the reviewers of the originality of the questions asked or methods employed.

Submission Procedure: Persons wishing to be considered for the award must submit an e-mail with the following attachments (*in PDF format*):

- (1) one file containing a ten-page, double-spaced abstract (margins are limited to 1 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 2013, 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. The 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 e-mail with all three attachments, including advisor's signature, must be received by Meg Blanchard at meg_blanchard@ncsu.edu no later than September 15, 2013. 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: Meg Blanchard, meg_blanchard@ncsu.edu

Meg Blanchard (Chair)

Tamara Holmlund Nelson (Co-Chair)