International Journal of Science Education

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Edited by John K. Gilbert, University of Reading, UK
Volume 29, 2007, 15 issues per year
Print ISSN 0950-0693 Online ISSN 1464-5289

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Special offer for NARST members
FINAL PROGRAM

NARST Annual International Conference 2007

THEME:
Restructuring Science Education Through Research

April 15-18, 2007  •  Sheraton New Orleans Hotel  •  New Orleans, LA
Acknowledgments

The following members of the Program Committee helped in preparing and editing the 2007 NARST Annual International Conference Program Book

Penny J. Gilmer, President-elect
Jonathan Osborne, President
James Shymansky, Program Committee Co-Chair and Past President
John Tillotson, Executive Director
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SHERATON NEW ORLEANS HOTEL

FLOOR PLANS

3rd Floor
Guidelines for Presenters

General Responsibilities of Presenters at the Meeting
• Go to the designated room early.
• Greet the presider/discussant.
• If you plan to use a computer file in your presentation, put your file on a jump drive in advance, in case you will be using another presenter’s computer for your presentation.
• Check your understanding of the LCD projector and any other audiovisual equipment prior to the session.
• Stay within the designated time limit.
• Invite audience questions.

Session Formats

Related Paper Sets and Paper Sets Grouped by Strand Coordinators
In a paper session, the presider/discussant introduces the speakers, who then present an abbreviated version of their papers. Generally, each paper will be allotted 15 minutes for presentation, followed by 5 minutes of questions, critique, and/or discussion. The discussant and audience will use the remaining time for additional discussion, general review, and suggestions for further research. If the paper is not on the NARST Proceedings 2007 CD distributed at the conference, then a copy of each paper must be disseminated during or immediately following the session.

Symposia
A symposium usually involves a panel of experts or stakeholders who examine a specific theme or issue. The presenters control presentations, discussion, and questioning with the assistance of the presider/discussant. (Presiders/discussants were not assigned unless specifically requested.) Discussion should promote the expression of alternative viewpoints and theoretical positions.

Interactive Poster Sessions
Six to 15 posters will be assigned to one room. Presenters at the interactive poster sessions will be assigned a presentation area within a large room. The session will be chaired by a presider who will give each interactive poster session presenter or team of presenters two minutes to introduce themselves and give a brief description of their paper. Members attending the session will be encouraged to select one or two presentations rather than to “float” randomly among them. The interactive poster sessions will run for 90 minutes.

Work-in-Progress Sessions
This is a new format in which there will be just one presentation with an expert discussant, who has read the paper in advance. The expert discussant will introduce the presenter(s). There will be an opportunity for more discussion of the paper, both
with the expert discussant and others in the audience. If the paper is not on the NARST Proceedings 2007 CD distributed at the conference, then a copy of the paper must be disseminated during or immediately following the session.

**Guidelines for Presiders and Discussants**

We have tried to accommodate most sessions with a presider, whose role is detailed below. For sessions without discussants, we are counting on the presider and presenters to set aside time for discussion so that the audience participants can contribute to a lively discussion of the papers.

**Presider Roles**

- Arrive early at designated room and arrange furniture as per desires of presenters.
- Check and focus LCD projector.
- Check pronunciations of the names of the presenter and their institutions.
- With presenters, make a time plan, retaining the order of presenters in the program.
- Start session promptly.
- Introduce presenters and serve as timekeeper. Alert presenters when they have 5, 3, and 1 minute remaining.
- Facilitate discussion, assuring equitable involvement of audience members. Close session on time.

**Discussant Roles**

- Read papers before the session and have remarks prepared ahead of time.
- Perform presider duties as detailed above, if there is only a discussant for the session
- After the presentation, make brief and cogent remarks on each paper with suggestions for future research.

**Notes on Session Types**

**Related Paper Sets and Paper Sets Grouped by Strand Coordinators**

- Presider and presenters will negotiate the organization of the session before it starts.
- Time should be left at the end for discussant comments and/or audience participation.

**Symposia**

Presentations, discussion, and questions are controlled by the presenters, with the assistance of the presider or discussant, if needed.

**Interactive Poster Sessions**

Six to 15 papers are assigned to one room. If there is a presider, s/he introduces and closes the session. Each first author presents a brief (less than 2 minutes) overview of the research. After the overviews, audience members circulate throughout the room to view posters and interact with presenters. The presider should allow time at the end of the session for large group discussion.
PART A

General Information
Information About NARST

The National Association for Research in Science Teaching was founded in 1928 for the purpose of promoting research in science education at all educational levels and disseminating the findings of this research in such ways as to improve science teaching. The Association is incorporated as a non-profit corporation in the State of Minnesota. The official publication is the Journal of Research in Science Teaching.

NARST encourages the conduct and presentation of the results of a wide variety of investigations in all aspects of science education, including action, historical, philosophical, ethnographic, experimental, and evaluative studies. Reports of empirical research, critical reviews, and theoretical works are encouraged. Some research areas of interest to NARST members include curriculum development and organization, assessment and evaluation, learning theory, teacher education, programs for the talented and handicapped, equity studies, and methods of teaching.

NARST Mission Statement

The National Association for Research in Science Teaching (NARST) is a worldwide organization of professionals committed to the improvement of science teaching and learning through research. Since its inception in 1928, NARST has promoted research in science education and the communication of knowledge generated by the research. The ultimate goal of NARST is to help all learners achieve science literacy. NARST promotes this goal by: 1) encouraging and supporting the application of diverse research methods and theoretical perspectives from multiple disciplines to the investigation of teaching and learning in science; 2) communicating science education research findings to researchers, practitioners, and policy makers; and 3) cooperating with other educational and scientific societies to influence educational policies.

How NARST Keeps Its Members Informed

- Ten issues of the Journal of Research in Science Teaching (JRST). The Journal has been ranked as one of the highest quality educational journals according to studies published by War, Holland and Schramm (American Educational Research Journal) and Guba and Clark (Educational Researcher) for the American Educational Research Association (AERA). These authors identified JRST as clearly the top research journal in science education.

- NARST Annual International Conference Proceedings. An annual proceedings volume is distributed at the annual international conference. This volume includes a compiled list of abstracts (on CD-ROM) for each annual international conference plus copies of accepted papers submitted prior to the conference. Members attending the conference receive a copy on-site and the cost is included in their registration fee.
• **E-NARST News** describing recent developments in research and in the profession. Opportunities to work with prominent people throughout the world on research projects and with affiliated organizations such as the National Science Teachers Association (NSTA), the Association for Science Teacher Education (ASTE), and the American Association for the Advancement of Science (AAAS). Our newsletter is now published online and posted to the NARST website.

• **Website and Listserv**, allowing access to further information about the organization. You may access this site at the following URL http://www.narst.org. There is further information about the Listserv on this site.

### Explanation of Program Session Formats

**Paper Sessions Organized by the Program Committee**

In a paper session, the presider introduces the presenters and monitors the time used for each presentation. All papers will be allotted 15 minutes for presentation, followed by approximately 5 minutes of questions or discussion. The presider and audience will use any time remaining in the session for additional discussion, general review, and suggestions for further research. The overall length of the paper sessions may vary based on the number of papers assigned to that session, but each paper within a particular session will observe the 15-minute presentation guideline. Each presenter is expected to disseminate a paper during or immediately following the session, unless the paper is on the NARST Proceedings 2007 CD, distributed as part of the program.

**Symposium**

A symposium involves a panel of experts or stakeholders who examines a specific theme or issue. This format does not involve the presentation of individual papers. Therefore, individual papers and authors will not be listed under this format. Rather, the participants are listed as panel members. The proposer controls presentations, discussion, and questioning with the assistance of the presider or discussant (if designated). Discussion should promote the expression of similar or alternative viewpoints and theoretical positions. The proposer of the symposium is expected to disseminate a paper or a summary with references during or immediately following the session, unless a summary of the symposium is on the NARST Proceedings 2007 CD.
Related Paper Set
This category accommodates, in a single session, three to five related research papers reporting several studies that originate from a common base of research. This format also allows for common elements of design or approach to be presented once rather than repetitively. The proposer and authors may determine the specifics of the session once it is accepted. For instance, those involved may opt for a formal presentation style or they may conduct their session in a more informal, discussion-oriented style. The proposer of a multiple paper set is encouraged to submit the name of a discussant for the session. Please confirm a commitment from this individual. An attempt will be made to honor this request unless a scheduling conflict arises. Each presenter is expected to disseminate a paper during or immediately following the session, unless a summary of the symposium is on the NARST Proceedings 2007 CD.

Interactive Poster Sessions Grouped by Strand Coordinators
This format offers presenters the opportunity to display their work graphically in a smaller setting than the traditional poster session format. Displays should fit on the 48”(long) x 36” (high) trifold boards provided and should include a brief abstract in large typescript. Six to 15 posters grouped by strand will be displayed in one room. Each presenter will have 2 minutes to present a brief overview of his or her research. At the conclusion of the brief presentations, audience members will have approximately 30 minutes to circulate throughout the room to view the posters and interact with the presenters. At the conclusion of this time, the audience members will return to their seats for a large group discussion facilitated by the session presider. Each presenter must set up the display prior to the start of the session and then remove it promptly at the end of the session. Each presenter is expected to disseminate a paper during the session, unless a summary of the symposium is on the NARST Proceedings 2007 CD.

Work-in-Progress Sessions
This format allows more interaction for presenters with their assigned expert discussant and others in the audience.
<table>
<thead>
<tr>
<th>STRAND 1</th>
<th>Science Learning: Understanding and Conceptual Change</th>
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<tbody>
<tr>
<td>STRAND 2</td>
<td>Science Learning: Contexts, Characteristics, and Interactions</td>
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<tr>
<td>STRAND 3</td>
<td>Science Teaching—Primary School (Grades preK-6): Characteristics &amp; Strategies</td>
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<td>STRAND 4</td>
<td>Science Teaching—Middle and High School (Grades 5-12): Characteristics &amp; Strategies</td>
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<td>STRAND 5</td>
<td>College Science Teaching and Learning (Grades 13-20)</td>
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<td>STRAND 6</td>
<td>Science Learning in Informal Contexts</td>
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<td>STRAND 7</td>
<td>Pre-service Science Teacher Education</td>
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<td>STRAND 8</td>
<td>In-service Science Teacher Education</td>
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<td>STRAND 9</td>
<td>Reflective Practice</td>
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<td>STRAND 10</td>
<td>Curriculum, Evaluation, and Assessment</td>
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<tr>
<td>STRAND 11</td>
<td>Cultural, Social, and Gender Issues</td>
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<td>STRAND 12</td>
<td>Educational Technology</td>
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<tr>
<td>STRAND 13</td>
<td>History, Philosophy, and Sociology of Science</td>
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<td>STRAND 14</td>
<td>Environmental Education</td>
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A Special Thanks to our Sponsors and Exhibitors

Open University Press
Routledge
Sense Publisher
Springer
We acknowledge John Wiley & Sons our publisher for the *Journal of Research in Science Teaching*
### NARST Leadership Team 2006 - 2007

**Officers and Board of Directors**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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<tr>
<td>President</td>
<td>Jonathan Osborne</td>
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<td>Executive Director</td>
<td>John W. Tillotson</td>
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<td>Research Coordinator</td>
<td>Pamela Fraser-Abder</td>
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<td>President-Elect</td>
<td>Penny J. Gilmer</td>
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<td>Executive Board Members</td>
<td>Fouad Abd-El-Khalick</td>
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<td>Saouma BouJaoude</td>
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<td>Lynn Bryan</td>
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<td>Immediate Past-President</td>
<td>Angela Calabrese-Barton</td>
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<td>Barbara Crawford</td>
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<td>Pamela Fraser-Abder</td>
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<td>E-NARST News Editor</td>
<td>Julie Gess-Newsome</td>
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<td>Allan G. Harrison</td>
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<td></td>
<td>Randy Yerrick</td>
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<td>Dana Zeidler</td>
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### 2008 NARST Annual International Conference

**Baltimore, Maryland**

The Program Chair invites NARST members and others to plan to participate in the 2008 NARST Annual International Conference and especially urges all members to start planning program proposals now during this year’s conference.

**Venue:** Marriott Baltimore Waterfront Hotel, 700 Aliceanna St., Baltimore, MD 21202

**Dates:** Sunday, March 30 – Wednesday, April 2, 2008

**Submission Deadline:** The Program Chair or designate must receive your program proposals for the Annual International Conference in 2008 by August 17, 2007 to be reviewed. The deadline allows sufficient time for processing and evaluating the many proposals. The original call for proposals will

**BACKGROUND**

**INFORMATION: The Baltimore You Know—And Don’t Know**

OK, you all know about the Star Spangled Banner. But where was ice cream invented - and cyberspace? Who built the first railroad on the planet? And the American Civil War - it started here.

Baltimore literally stands at the crossroads of history and innovation—with more incredible firsts than you might imagine. What’s more, our port city retains an international flair, not only around its Inner Harbor, but also throughout its patchwork quilt of surrounding neighborhoods, each with their own individual charm and flavor.

And speaking of flavor, no visit to Baltimore is complete without a taste of our world-renowned Chesapeake Bay cuisine. It’s why we’ve been called “the gastronomic capitol of the universe!”

### Future Meeting Dates for NARST, NSTA, and AERA

<table>
<thead>
<tr>
<th>Year</th>
<th>NSTA</th>
<th>Location</th>
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<tr>
<td>2007</td>
<td>NSTA</td>
<td>St. Louis</td>
<td>March 29- April 1</td>
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<td>AERA</td>
<td>Chicago</td>
<td>April 9-13</td>
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<td>New Orleans</td>
<td>April 15-18</td>
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<td>2008</td>
<td>NSTA</td>
<td>Boston</td>
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<td>AERA</td>
<td>New York City</td>
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<td>Baltimore</td>
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<td>NSTA</td>
<td>Indianapolis</td>
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<td>AERA</td>
<td>San Diego</td>
<td>April 13-17</td>
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<td>NARST</td>
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<td>TBA</td>
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<td>2010</td>
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<td>2011</td>
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2006 Strand Coordinators

STRAND 1  Science Learning, Understanding, and Conceptual Change  
Anil Banerjee, Eva Toth

STRAND 2  Science Learning: Contexts, Characteristics, and Interactions  
Troy Sadler, Tracy Hogan

STRAND 3  Science Teaching –Primary School (Grades preK-6)  
Leigh Smith, Mark Guy

STRAND 4  Science Teaching –Secondary School (Grades 5-12)  
Irene Osisioma, Jo Anne Ollerenshaw

STRAND 5  College Science Teaching (Grades 13-20)  
Yevgeniya V. Zastavker, Peter Garik

STRAND 6  Science Learning in Informal Contexts  
Bruce Johnson, Shawn Rowe

STRAND 7  Pre-service Science Teacher Education  
Mark Olson, Rola Khishfe

STRAND 8  In-Service Science Teacher Education  
Kate Popejoy, Patricia Morrell

STRAND 9  Reflective Practice  
Brenda Capobianco, Tamara Nelson

STRAND 10  Curriculum, Evaluation, and Assessment  
Doug Huffman, Kabba Colley, Kimberly Tanner

STRAND 11  Cultural, Social, and Gender Issues  
Heidi Carloni, Cory Buxton, Felicia Moore

STRAND 12  Educational Technology  
Rebecca McNall, Barbara Hug

STRAND 13  History, Philosophy, and Sociology of Science  
Sibel Erduran, Mike Smith, Larry Scharmann

STRAND 14  Environmental Education  
David Zandvliet, Julie Lambert
Program Proposal Reviewers

Program proposals were given blind reviews by a group of assessors, including members of the Program Committee and the following individuals:

Fouad Abd-El-Khalick
Shehadeh Abdo
Issam Abi-El-Mona
Valarie Ackerson
April Adams
Kathleen Allspaw
Leila Amiri
Aidin Amirshokoohi
Len Annetta
Scott Ashmann
Mary Atwater
Ron Atwood
Barbara Austin
Carlos Ayala
Meymet Aydeniz
Linda Baggett la Velle
Meena Balgopal
Martin Balinsky
Miriam Barak
Abhijeet Bardapurkar
Danielle Barker
Marianne Barnes
Sarah Barrett
Gillian Bayne
Glenda Bell
Sumita Bhattacharyya
Julie Bianchini
Kathie Black
Alan Blakely
Meg Blanchard
Karen Bledsoe
Jason Blickenstaff
William Bobrowsky
SueAnn Bottoms
Saouma BouJaoude
Jonathan Bozerman
Carol Brandt
Leah A Bricker
Jayme Bruno
Stein Brunvand
Lynn Bryan
Gayle Buck
Barbara C. Buckley
Wilbert Butler
Kim Byoung-Sug
Kathy Cabe Trundle
Stephen Cain
Mustafa Çakir
Brendan Callahan
Pamela Cantrell
Brenda Capobianco
Sarah Carrier
James Carroll
Jennifer Cartier
Janell Catlin
Ann Cavallo
May Cheng
Michele Cheyne
Pauline Chinn
Jung-II Cho
Alicia Christensen
Tanya Cleveland
Kabba Colley
Neporcha Cone
Lindsey Conner
Michelle Cook
Sue Courson
Beth Covitt
Bronwen Cowie
Amy Cox-Peterson
Jon Craven
Barbara Crawford
Frank Crawley
Zoubeida Dagher
Danielle Dani
Bob Danielowich
Nancy Davis
Betsy Davis
Cesar Delgado
Vickie Deneroff
Hasan Deniz
Thomas J. Diana
Warren Dibiase
Justin Dillon
Norie Dimeo-Ediger
Erin Dokter
Erin Dolan
Nancy Donaldson
Joel D. Donna
Lisa Donnelly
Jessica Donnelly
Sharon Dotger
Connie Doyle
Don Duggan-Haas
Richard Duschl
David Eichinger
Mark Enfield
Virginia Epps
Fernando Espinoza
Maria Evagorou
Allan Feldman
Martha Fewell
Fernando Figueroa
Michelle Fleming
Steve Fletcher
Steven Fletcher
Larry Flick
Leslie Flynn
Jay Fogelman
Sufian Forawi
Cory Forbes
Danielle J. Ford
Michael Ford
Brian Fortney
Rachel E. Foster
Samantha Fowler
Barry Fraser
Frederick W. Freking
Saundra Frerichs
Eric Fretz
Patricia J. Friedrichsen
Peter Garik
Andrea Gay
Magnia George
Nicole Gillespie
Penny J. Gilmer
Cassondra Giombetti
Merton Glass
Elizabeth Gonzalez
Angelia Griffin
Andrew Grillo-Hill
Bruma Irene Grinberg
Dean Grosshandler
Fred Groves
Suzanne Reeve
Giuliano Reis
Gail Richmond
Judith Ridgway
Joseph Riley
Gillian Roehrig
Elizabeth Roland
Charles J. Rop
Carol A. Ross
Frances M. Rowe
Olga Rowe
Anita Roychoudhury
David Rudge
Melody Russell
Jon Saderholm
Kim Sadler
Troy Sadler
Ale Salinas
Salleh Sallimah Mohd.
Mary Sande
Cody Sandifer
Alexandra Santau-Sodhi
Kathryn Scantlebury
Adele Schepige
Amy Schiebel
Rebecca Schneider
David Schuster
Renee Schwartz
John Settlage
Ajay Sharma
Rachel Sheffield
Ji Shen
Daniel P Shepardson
Sonya Sherrod
Namsoo Shin
Melissa Shirley
Jim Shymansky
Marcelle Siegel
David A. Slykhuis
Christine Smith
Julie Smithe
Lori Smolleck
Sherry Southerland
Scott Sowell
Sam Spiegel
Karen Spuck
Donna Sterling
Nora Stevens
Martin Storksdieck
William Straits
Karen Sullenger
Dennis Sunal
Sherry Sutherland
Piyush Swami
Elena Takaki
Vicente Talanquer
Valerie Talma
Edna Tan
Kimberly Tanner
Fatih Tasar
Peter Taylor
Tom Thompson
John Tillotson
Briana Timmerman
Luis Tinoca
Regina Toolin
Heather Toomey Zimmerman
Eva Toth
Nancy Trautmann
Crystall Travis
David Treagust
Tom Tretter
Deborah J. Trumbull
Chi-Yan Tsui
Blakely K. Tsurusaki
Steven Forbes Tuckey
Lutfullah Turkmen
Sedat Ucar
Bhasker Upadhyay
Leslie Upson Bradbury
Sibel Uysal
Jan Van Driel
Bina Vanmali
Meta Van Sickle
Gary Varrella
Richard Vath
Jesus Vazquez-Abad
Geeta Verma
Hsingchi Von Bergmann
Camille Wainwright
Bruce Waldrip
Mario Watkins
Bill Watson
Starlin D. Weaver
Molly Weinburgh
Tarin Weiss
Sandra West
Kevin White
Mary Whitfield
Nathan Wood
Sheldon C. Woods
Ann Wright
Hsin-kai Wu
Buket Yakmaci Guzel
Anat Yarden
Monica J Young
Shu Mey Yu
Molly Yunker
David Zandvliet
Carolyn A. Zanta
Dana Zeidler
Carla Zembal-Saul
Esther Zirbel
### Past Presidents

<table>
<thead>
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<td>W. L. Eikenberry</td>
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<td>Walter G. Whitman</td>
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<td>Robert E. Yager</td>
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<td>Hanor A. Webb</td>
<td>1976</td>
<td>Ronald D. Anderson</td>
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<td>Otis W. Caldwell</td>
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<td>Harry A. Carpenter</td>
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<td>G. P. Cahoone</td>
<td>1980</td>
<td>John W. Renner</td>
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<td>Florence G. Billig</td>
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<td>1984</td>
<td>Ann C. Howe</td>
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<td>1947</td>
<td>Earl R. Glenn</td>
<td>1985</td>
<td>Ertle Thompson</td>
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<td>1948</td>
<td>Ira C. Davis</td>
<td>1986</td>
<td>David P. Butts</td>
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<tr>
<td>1949</td>
<td>Joe Young West</td>
<td>1987</td>
<td>James P. Barufaldi</td>
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<tr>
<td>1950</td>
<td>N. Eldred Bingham</td>
<td>1988</td>
<td>Linda DeTure</td>
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<tr>
<td>1951</td>
<td>Betty Lockwood</td>
<td>1989</td>
<td>Patricia Blosser</td>
</tr>
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<td>1952</td>
<td>Betty Lockwood</td>
<td>1990</td>
<td>William G. Holliday</td>
</tr>
<tr>
<td>1953</td>
<td>J. Darrell Barnard</td>
<td>1991</td>
<td>Jane Butler Kahle</td>
</tr>
<tr>
<td>1955</td>
<td>Kenneth E. Anderson</td>
<td>1993</td>
<td>Emmett L. Wright</td>
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<tr>
<td>1956</td>
<td>W. C. Van Deventer</td>
<td>1994</td>
<td>Kenneth G. Tobin</td>
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<tr>
<td>1957</td>
<td>Waldo W. Blanchet</td>
<td>1995</td>
<td>Dorothy L. Gabel</td>
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<tr>
<td>1958</td>
<td>Nathan S. Washton</td>
<td>1996</td>
<td>Barry J. Fraser</td>
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<tr>
<td>1959</td>
<td>Thomas P. Fraser</td>
<td>1997</td>
<td>Thomas R. Koballa, Jr.</td>
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<td>1960</td>
<td>Vaden W. Miles</td>
<td>1998</td>
<td>Audrey B. Champagne</td>
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<td>1961</td>
<td>Clarence H. Boeck</td>
<td>1999</td>
<td>Joseph S. Krajcik</td>
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<td>1962</td>
<td>Herbert A. Smith</td>
<td>2000</td>
<td>David F. Treagust</td>
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<td>1963</td>
<td>Ellsworth S. Obourn</td>
<td>2001</td>
<td>Sandra K. Abell</td>
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<td>1964</td>
<td>Cyrus W. Barnes</td>
<td>2002</td>
<td>Norman G. Lederman</td>
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<td>1965</td>
<td>Frederic B. Dutton</td>
<td>2003</td>
<td>Cheryl L. Mason</td>
</tr>
<tr>
<td>1966</td>
<td>Milton P. Pella</td>
<td>2004</td>
<td>Andy (Charles) Anderson</td>
</tr>
<tr>
<td>1967</td>
<td>H. Craig Sipe</td>
<td>2005</td>
<td>John R. Staver</td>
</tr>
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<td></td>
<td></td>
<td>2006</td>
<td>James Shymansky</td>
</tr>
</tbody>
</table>
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J. Nathan Swift
Pinchas Tamir
Burton E. Voss
Russell H. Yeany
Paul Black
Ronald Good
NARST Award Winners

Distinguished Contributions to Science Education Through Research

This award is presented at the Annual International Conference but is bestowed only when a superior candidate is identified. It is given to recognize an individual who, through research over an extended period of time, has made outstanding and continuing contributions, provided notable leadership, and made a substantial impact in the area of science education.

<table>
<thead>
<tr>
<th>Year</th>
<th>Awardee</th>
<th>Year</th>
<th>Awardee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>Anton E. Lawson</td>
<td>1997</td>
<td>Rosalind Driver</td>
</tr>
<tr>
<td>1987</td>
<td>Paul DeHart Hurd</td>
<td>1998</td>
<td>James J. Gallagher</td>
</tr>
<tr>
<td>1988</td>
<td>John W. Renner</td>
<td>1999</td>
<td>Peter J. Fensham</td>
</tr>
<tr>
<td>1989</td>
<td>Willard Jacobson</td>
<td>2000</td>
<td>Jane Butler Kahle</td>
</tr>
<tr>
<td>1991</td>
<td>Robert L. Shrigley</td>
<td>2002</td>
<td>Audrey B. Champagne</td>
</tr>
<tr>
<td>1992</td>
<td>Pinchas Tamir</td>
<td>2003</td>
<td>Barry J. Fraser</td>
</tr>
<tr>
<td>1994</td>
<td>Marcia C. Linn</td>
<td>2005</td>
<td>Paul Black</td>
</tr>
<tr>
<td>1995</td>
<td>Wayne W. Welch</td>
<td>2006</td>
<td>David Treagust</td>
</tr>
<tr>
<td>1996</td>
<td>Carl F. Berger</td>
<td></td>
<td></td>
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</table>

JRSS Award

The JRSS Award is given annually to the article published in the Journal of Research in Science Teaching that is judged to be the most significant for that year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Awardee</th>
<th>Year</th>
<th>Awardee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>Marcia C. Linn and Herbert C. Thier</td>
<td>1993</td>
<td>Nancy R. Romance and Michael R. Vitale</td>
</tr>
<tr>
<td></td>
<td>(tie) Linda R. DeTure</td>
<td>1998</td>
<td>Julie Bianchini</td>
</tr>
<tr>
<td>1982</td>
<td>Robert G. Good and Harold J. Fletcher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(tie) F. David Boulanger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>Jack A. Easley, Jr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Awardee</td>
<td>Year</td>
<td>Awardee</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------</td>
<td>------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1975</td>
<td>John J. Koran</td>
<td>1991</td>
<td>Nancy R. Romance and Michael Vitale</td>
</tr>
<tr>
<td>1977</td>
<td>no award</td>
<td>1993</td>
<td>Wolff-Michael Roth</td>
</tr>
<tr>
<td>1978</td>
<td>Rita Peterson</td>
<td>1994</td>
<td>Wolff-Michael Roth and Michael Bowen</td>
</tr>
<tr>
<td>1979</td>
<td>Linda R. DeTure</td>
<td>1995</td>
<td>Wolff-Michael Roth</td>
</tr>
<tr>
<td>1981</td>
<td>William Capie, Kenneth G. Tobin, and Margaret Boswell</td>
<td>1997</td>
<td>no award</td>
</tr>
<tr>
<td>1982</td>
<td>F. Gerald Dillashaw and James R. Okey</td>
<td>1998</td>
<td>Wolff-Michael Roth, Reinders Duit, Michael Komorek, and Jens Wilbers</td>
</tr>
<tr>
<td>(tie)</td>
<td>Russell H. Yeany, Kueh Chin Yap, and Michael J. Padilla</td>
<td>2002</td>
<td>Carolyn Wallace Keys</td>
</tr>
<tr>
<td>1986</td>
<td>Barry J. Fraser, Herbert J. Walberg, and Wayne W. Welch</td>
<td>2003</td>
<td>Eun-Mi Yang</td>
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<td></td>
<td></td>
<td>2004</td>
<td>Brian Hand and Liesl Hohenshell</td>
</tr>
</tbody>
</table>

The Outstanding Paper Award is given annually for the paper or research report presented at the Annual International Conference that is judged to have the greatest significance and potential in the field of science education.
1987 Robert D. Sherwood  Joel Kuipers,
1988 Barry J. Fraser and  Curtis Pyke and
    Kenneth G. Tobin  Michael Szseze
1989 James J. Gallagher and  2005 Chi Yan Sui,
    Armando Contreras  David Treagust and
1990 Patricia L. Hauslein,  Michael Szseze
    Ronald G. Good, and
    Catherine Cummins  2006 Leema Kuhn and
Outstanding Doctoral Dissertation Award

This award was established in 1992 to be given annually for the doctoral dissertation judged to have the greatest significance in the field of science education.

<table>
<thead>
<tr>
<th>Year</th>
<th>Awardee</th>
<th>Major Professor</th>
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<tr>
<td>1992</td>
<td>René Stofflett</td>
<td>Dale R. Baker</td>
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<tr>
<td>1993</td>
<td>Julie Gess-Newsome</td>
<td>Norman G. Lederman</td>
</tr>
<tr>
<td>1994</td>
<td>Carolyn W. Keys</td>
<td>Burton E. Voss</td>
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<td>1995</td>
<td>Jerome M. Shaw</td>
<td>Edward Haertel</td>
</tr>
<tr>
<td>1996</td>
<td>Christine M. Cunningham</td>
<td>William L. Carlsen</td>
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<td>1997</td>
<td>Jane O. Larson</td>
<td>Ronald D. Anderson</td>
</tr>
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<td>1998</td>
<td>Kathleen Hogan</td>
<td>Bonnie K. Nastasi</td>
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<td>1999</td>
<td>Fouad Abd-El-Khalick</td>
<td>Norman G. Lederman</td>
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<td>2000</td>
<td>Danielle Joan Ford</td>
<td>Annemarie S. Palinscar</td>
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<tr>
<td>2001</td>
<td>Iris Tabak</td>
<td>Brian Reiser</td>
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<td>2002</td>
<td>Mark Girod</td>
<td>David Wong</td>
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<td>2003</td>
<td>Hsin-Kai Wu</td>
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<td>2004</td>
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<td>2005</td>
<td>Thomas Trettier</td>
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<td>2006</td>
<td>Stacy Olitsky</td>
<td>Kenneth Tobin</td>
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Outstanding Master’s Thesis Award

This award was established in 1995 to be given annually for the Master’s Thesis judged to have the greatest significance in the field of science education. It was last awarded in 2002.

<table>
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<th>Year</th>
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<td>1995</td>
<td>Moreen K. Travis</td>
<td>Carol L. Stuessy</td>
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<td>1996</td>
<td>Lawrence T. Escalada</td>
<td>Dean A. Zollman</td>
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<td>1997</td>
<td>C. Theresa Forsythe</td>
<td>Jeffrey W. Bloom</td>
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<td>1998</td>
<td>Renée D. Boyce</td>
<td>Glenn Clark</td>
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<td>1999</td>
<td>Andrew B. T. Gilbert</td>
<td>Randy K. Yerrick</td>
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<td>2000</td>
<td>Rola Fouad Khishfe</td>
<td>Fouad Abd-El-Khalick</td>
</tr>
<tr>
<td>2002</td>
<td>Laura Elizabeth Slocum</td>
<td>Marcy Hamby Towns</td>
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</tbody>
</table>
Early Career Research Award

The Early Career Research Award is given annually to the early researcher who demonstrates the greatest potential to make outstanding and continuing contributions to educational research. The recipient will have received his/her doctoral degree within five years of receiving the award.

<table>
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<th>Year</th>
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<tr>
<td>1993</td>
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<td>Nancy B. Songer</td>
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<td>1996</td>
<td>Mary B. Nakhleh</td>
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<td>1997</td>
<td>Peter C. Taylor</td>
</tr>
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<td>1998</td>
<td>J. Randy McGinnis</td>
</tr>
</tbody>
</table>
| 1999 | Craig W. Bowen   
       | Gregory J. Kelly |

Classroom Applications Award

The Classroom Applications Award was established in 1979. The award was given annually to authors whose papers were presented at the previous Annual Meeting and judged to be outstanding in terms of emphasizing classroom application of research in science education. The award was last presented in 1991.

<table>
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<tr>
<td>1980</td>
<td>Livingston S. Schneider and John W. Renner</td>
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<td>(Five Equal Awards)</td>
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<tr>
<td></td>
<td>Heidi Kass and Allan Griffiths</td>
</tr>
<tr>
<td></td>
<td>Ramona Saunders and Russell H. Yeany</td>
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<tr>
<td></td>
<td>Joe Long, James R. Okey, and Russell H. Yeany</td>
</tr>
<tr>
<td></td>
<td>M. James Kozlow and Arthur L. White</td>
</tr>
<tr>
<td>1981</td>
<td>Dorothy L. Gabel, Robert D. Sherwood, and Larry G. Enochs</td>
</tr>
<tr>
<td></td>
<td>(Four Equal Awards)</td>
</tr>
<tr>
<td></td>
<td>Wayne Welch, Ronald D. Anderson, and Harold Pratt</td>
</tr>
<tr>
<td></td>
<td>Mary Ellen Quinn and Carolyn Kessler</td>
</tr>
<tr>
<td></td>
<td>P. Ann Miller and Russell H. Yeany</td>
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<tr>
<td>1982</td>
<td>Louise L. Gann and Seymour Fowler</td>
</tr>
<tr>
<td></td>
<td>(Four Equal Awards)</td>
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<tr>
<td></td>
<td>Dorothy L. Gabel and Robert D. Sherwood</td>
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<td></td>
<td>Thomas L. Russell</td>
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<td>Joseph C. Cotham</td>
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<tr>
<td>1983</td>
<td>Robert D. Sherwood, Larry G. Enochs, and Dorothy L. Gabel</td>
</tr>
<tr>
<td></td>
<td>(Four Equal Awards)</td>
</tr>
<tr>
<td>1984</td>
<td>Mary Westerback, Clemencia Gonzales, and Louis H. Primavera</td>
</tr>
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<td></td>
<td>(Four Equal Awards)</td>
</tr>
<tr>
<td></td>
<td>Kenneth G. Tobin</td>
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<td></td>
<td>Hanna J. Arzi, Ruth Ben-Zvi, and Uri Daniel</td>
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<td></td>
<td>Charles Porter and Russell H. Yeany</td>
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<td>1985</td>
<td>Dan L. McKenzie and Michael J. Padilla</td>
</tr>
<tr>
<td></td>
<td>(Three Equal Awards)</td>
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<tr>
<td></td>
<td>Margaret Walkosz and Russell H. Yeany</td>
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<td></td>
<td>Kevin C. Wise and James R. Okey</td>
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</tbody>
</table>
1986 (Four Equal Awards) Sarath Chandran, David F. Treagust, and Kenneth G. Tobin
Darrell L. Fisher and Barry J. Fraser
Dorothy L. Gabel, Stanley L. Helgeson, Joseph D. Novak,
John Butzow, and V. K. Samuel
Linda Cronin, Meghan Tweist, and Michael J. Padilla

1987 Dorothy L. Gabel, V. K. Samuel, Stanley L. Helgeson,
Saundra McGuire, Joseph D. Novak, and John Butzow

1988 Uri Zoller and Benn Chaim

1989 James D. Ellis and Paul J. Kuerbis

1990 Dale R. Baker, Michael D. Piburn, and Dale S. Niederhauser

1991 David F. Jackson, Billie Jean Edwards, and Carl F. Berger

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# Program At A Glance

<table>
<thead>
<tr>
<th>Sunday, April 15th</th>
<th>Event</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 - 11:30 am</td>
<td>Workshops</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td></td>
<td>Use of Concept Maps for Improving Resch., Teaching &amp; Learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applications of Rasch Measurement in Science Education Scholars from Underrepresented Groups and the Academy</td>
<td></td>
</tr>
<tr>
<td>12:30 – 2 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>2 – 2:30 pm</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:30 – 4 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>4:15 – 5:45 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>6 - 7 pm</td>
<td>Mentor - Mentee Nexus</td>
<td></td>
</tr>
<tr>
<td>7 - 9 pm</td>
<td>Presidential/Welcome reception</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monday, April 16th</th>
<th>Event</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 - 8:15 am</td>
<td>Committee meetings</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>8:30 - 10 am</td>
<td>Plenary session</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>10:15 – 11:45 am</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>11:45 - 12:30 pm</td>
<td>Lunch on your own</td>
<td></td>
</tr>
<tr>
<td>12:30 – 2 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>2 – 2:30 pm</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:30 – 4 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>4:15 – 5:45 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>Evening</td>
<td>off-site social or on your own</td>
<td></td>
</tr>
<tr>
<td>6 – 7 pm</td>
<td>Graduate Student and Junior Faculty Early Career Discussion</td>
<td></td>
</tr>
<tr>
<td>6 - 8 pm</td>
<td>JRST mtg and dinner</td>
<td></td>
</tr>
<tr>
<td>6 - 8 pm</td>
<td>EJSE Reception</td>
<td></td>
</tr>
<tr>
<td>7 - 9 pm</td>
<td>Equity dinner - off site</td>
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<table>
<thead>
<tr>
<th>Tuesday, April 17th</th>
<th>Event</th>
<th>Room</th>
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<tbody>
<tr>
<td>7 – 8:15 am</td>
<td>Committee meetings</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>8:30 – 10 am</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>10 – 10:30 am</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:30 – 12 noon</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>12 – 12:30 pm</td>
<td>Lunch on your own</td>
<td></td>
</tr>
<tr>
<td>1 – 2:30 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>2:30 – 3 pm</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3 – 4:30 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>4:45 – 6:15 pm</td>
<td>Concurrent Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>6 – 6:45 pm</td>
<td>New Researcher Orientation</td>
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<tr>
<td>6:30 – 7:30 pm</td>
<td>NARST Business mtg</td>
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<tr>
<td>8 – 12 pm</td>
<td>FARSE social</td>
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<tr>
<th>Wednesday, April 18th</th>
<th>Event</th>
<th>Room</th>
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<tbody>
<tr>
<td>7 – 8:15 am</td>
<td>Strand mtg w/ coordinators &amp; WIP Sessions</td>
<td></td>
</tr>
<tr>
<td>8:30 – 10 am</td>
<td>General session</td>
<td></td>
</tr>
<tr>
<td>10:15 – 11:45 am</td>
<td>Plenary Sessions</td>
<td>Listed within full schedule</td>
</tr>
<tr>
<td>12 – 2 pm</td>
<td>Awards luncheon</td>
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# Strand rooms assignments

## 3rd Floor

<table>
<thead>
<tr>
<th>Room</th>
<th>Strand #</th>
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</thead>
<tbody>
<tr>
<td>Napoleon A1</td>
<td>6</td>
</tr>
<tr>
<td>Napoleon A2</td>
<td>14</td>
</tr>
<tr>
<td>Napoleon A3</td>
<td>13</td>
</tr>
<tr>
<td>Napoleon B1</td>
<td>1</td>
</tr>
<tr>
<td>Napoleon B2</td>
<td>4</td>
</tr>
<tr>
<td>Napoleon B3</td>
<td>2</td>
</tr>
<tr>
<td>Borgne</td>
<td>7</td>
</tr>
<tr>
<td>Maurepas</td>
<td>12</td>
</tr>
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</table>

## 4th Floor

<table>
<thead>
<tr>
<th>Room</th>
<th>Strand #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayside A</td>
<td>11</td>
</tr>
<tr>
<td>Bayside B</td>
<td>3</td>
</tr>
<tr>
<td>Bayside C</td>
<td>10</td>
</tr>
<tr>
<td>Gallier A/B</td>
<td>9</td>
</tr>
<tr>
<td>Edgewood A/B</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>Oak Alley</td>
<td>8</td>
</tr>
<tr>
<td>Nottoway</td>
<td>5</td>
</tr>
<tr>
<td>Southdown</td>
<td>TBD</td>
</tr>
</tbody>
</table>

## 5th Floor

<table>
<thead>
<tr>
<th>Room</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Couteau</td>
<td>Committee – and Presidential – sponsored sessions</td>
</tr>
<tr>
<td>Grand Chenier</td>
<td>Board Meetings</td>
</tr>
<tr>
<td></td>
<td>Some Strand #10 sessions, and one committee-sponsored session</td>
</tr>
</tbody>
</table>
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Science, Learning, Identity
Sociocultural and Cultural-Historical Perspectives
Wolff-Michael Roth and Kenneth Tobin (Eds.)

The Culture of Science Education
Its History in Person
Kenneth Tobin and Wolff-Michael Roth

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A Handbook
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Sunday, April 15th

8:30 – 11:30 am
Pre-conference Workshops

Group: Research Committee-sponsored: Applications of Rasch Measurement in Science Education (group 143)
Oak Alley
S-764-1644-1641-1671
Applications of Rasch Measurement in Science Education
Xiufeng Liu
William J. Boone
All attendees to this workshop need to have paid and pre-registered.

Group: Equity and Ethics Committee-sponsored Pre-conference Workshop: Scholars from Underrepresented Groups and the Academy (group 180)
Nottoway
Preconference Workshop:
Presider: Maria Rivera Maulucci
Mary Atwater and Pauline Chinn are the keynote presenters and the others serve on the panel.

i. S-2001-510-507-89: Scholars From Underrepresented Groups and the Academy
Mary Atwater
Pauline Chinn
Eileen Parsons
Maria Rivera Maulucci
Felicia Moore
Scott Dantley
Bhaskar Upadhyay

This workshop is free and open to all members of the NARST community. We particularly encourage anyone who is a member of or mentors scholars from underrepresented groups to attend. All equity scholarship awardees should attend this pre-conference workshop.

Group: Research Committee-sponsored Preconference Workshop: The Use of Concept Maps for Improving Research, Teaching, and Learning (group 142)
Grand Couteau
S-765-1646-1643-1673
The Use of Concept Maps for Improving Research, Teaching, and Learning
Joseph D Novak
Alberto Canas
All attendees to this workshop need to have paid and pre-registered.
12:30 – 2 pm

Concurrent Sessions

**Group: Strand: 1 Symposium: Enhancing Student Learning in Chemistry (group 4)**
**Napoleon B1**
*Strand Coordinator-Invited Symposium:*
*Presider: Anil Banerjee*

   Anil Banerjee

ii. P-273-1617-1616-1646: Paper #2 The Impact of a Series of Predict-Observe-Explain Tasks on Thai University Students’ Understanding of Concepts in Electrochemistry
   David Treagust
   Nookorn Pathommapas
   Chi-Yan Tsui

    Penny J. Gilmer
    Jennifer Cirillo

   Catherine Milne
   Jan Plass
   Bruce Homer
   Trace Jordan
   Slava Kalyuga

**Group: Strand: 1 Transfer of Learning (group 170)**
**Edgewood A/B**
*Strand Coordinator Organized Paper Set:*
*Presider: Sufian Forawi*

i. P-781-1683-1680-1710: Assessing College Students Transfer of Learning from Calculus to Physics Using Non-Traditional Problems
   Lili Cui

ii. P-782-1685-1682-1712: Consolidating Traditional and Contemporary Perspectives of Transfer of Learning: A Framework and Implications
N. Sanjay Rebello

**Group: Strand: 2 Bridging Classroom Practices: Traditional and Argumentative Discourse (group 85)**

**Napoleon B3**

**Related Paper Set:**

**Presider: Eric Dolan**

i. P-718-1522-1521-1552: Paper #1 Bridging Classroom Practices: Traditional and Argumentative Discourse
   Leema G. Kuhn
   Brian J. Reiser
   Discussant: Jonathan Osborne

ii. P-718-1523-1522-1553: Paper #2 The Role of the Teacher in Supporting Students in Writing Scientific Explanations
   Katherine L. McNeill

   Philip Bell
   Leah A. Bricker

   Cynthia M. Passmore

**Group: Strand: 3 Student Inquiry (group 42)**

**Bayside B**

**Strand Coordinator Organized Paper Set:**

**Presider: Mark Enfield**

i. P-230-531-530-567: Discourse Surrounding the Use of Planetarium Software in an Early Childhood Science Classroom
   Sally M. Hobson
   Kathy C. Trundle

ii. P-717-1489-1488-1519: Implementing a Science-Based Interdisciplinary Curriculum in the Second Grade: A Community of Practice in Action
   Meredith Park Rogers
   Sandra Abell

iii. P-348-1094-1093-1127: An Exemplary Approach to Natural Sciences Education in Preschool: Reggio Emilia
   Hatice Z. Inan
   Kathy C. Trundle
   Rebecca Kantor
   Patricia Martinez
   Brenda Bannan-Ritland
   John Y. Baek

Group: Strand: 4 Curriculum issues (group 58)
Napoleon B2
Strand Coordinator Organized Paper Set:
Presider: Mercy Bandele

i. P-206-1345-1344-1376: Educative Curriculum Materials to Support the Teaching of Modern Genetics
   Nonye M. Alozie
   Joseph S. Krajcik

ii. P-103-1318-1317-1349: The Roles of Curriculum Materials in a Teacher’s Instructional Decision Making Process
    Eunmi Lee
    Daniel C. Edelson

iii. P-394-826-825-860: A Model Predicting Student Outcomes in Middle School Science Classrooms Implementing a “Highly Rated” Science Curriculum Unit: Characteristics of Implementation in Treatment and Comparison Conditions
     Sharon J. Lynch
     Carol L. O’Donnell
     Elizabeth Hatchuel
     Vasuki Rethinam
     William Watson

iv. P-539-995-994-1028: Making Connections in a Project-Based Curriculum
    Heather J. Johnson
    Daniel C. Edelson

Group: Strand: 5 Life Science Instructional Practice (group 99)
Nottoway
Strand Coordinator Organized Paper Set:
Presider: Kefyn Catley

i. P-219-360-359-396: “Writing Science” in an Inquiry-Based Undergraduate Biology Laboratory for Non-Science Majors
   Ratna Narayan
ii. P-381-1544-1543-1574: Examining Life Science Professors’ Views of Learning and How That Affects Their Teaching
Kristen L. Hutchins
Patricia M. Friedrichsen

iii. P-73-129-128-165: A Faculty Team Works to Develop Concept Inventory Monitoring the Effects of Implementing New Teaching Approaches and Curriculum Reform
Gili Marbach-Ad
Volker Briken
Kenneth Frauwirth
Brenda Fredericksen
Lian-Yong Gao
Steven W. Hutcheson
Sam W. Joseph
David M. Mosser
Kevin S. McIver
Bryn Boots Quimby
Patty Shields
Wenxia Song
Daniel C. Stein
Robert Yuan
Ann C. Smith

Megan E. Thomas

Napoleon A1
Strand Coordinator Organized Paper Set:
Presider: James Kisiel

i. P-197-550-549-586: Connecting Science Field Trips to Classroom Learning
Kimberly A. Lebak

ii. P-485-881-880-915: Discourse Practices in Science Center Programs for Schools
Patricia M. Rowell
Joan M. Chambers

iii. P-450-990-989-1023: Are They Really Talking With Each Other?: In-Depth Analyses of Dialogue Events on Socio-Scientific Issues for Adults at ISIs
Ellen L. McCallie
Group: Strand: 7 Alternative Certification of Science Teachers: Findings from the NSF-funded STEM ACT conference (group 112)

Borgne

Symposium:
S-48-468-467-504: The Alternative Certification of Science Teachers: Findings From the NSF-Funded STEM ACT Conference
Joseph B. Berger
Ted Britton
Allan Feldman
Jodie A. Galosy
Anita Greenwood
Morton M. Sternheim

Group: Strand: 8 Reconceptualizing the Structure of Professional Development: Integrating Content, Pedagogy and Practice Through Middle School and University Partnerships (group 5)

Oak Alley

Related Paper Set:

i. P-652-1331-1330-1362: Paper #1 Re-Conceptualizing the Structure of Professional Development: Integrating Content, Pedagogy and Practice Through Middle School and University Partnerships
Jonathan E. Singer
Randy M. La Cross
Robert Feller

ii. P-652-1308-1307-1339: Paper #2 Impacts of Reform-Based Curricula and Pedagogy on Student Achievement in Middle School Science Classrooms
Lisa Ruth

iii. P-652-1314-1313-1345: Paper #3 Impact of a High School Teacher Professional Development Model on Teachers’ Views of Science and Science Teaching
Christine R. Lotter
Robert Feller

iv. P-652-1316-1315-1347: Paper #4 Chemistry Teachers’ Emerging Expertise in Inquiry Teaching:
Greg Rushton
Group: Strand: 10 Elementary Science Reform - Curriculum, Evaluation & Assessment (group 1)

Bayside C

Strand Coordinator Organized Paper Set:
Presider: Kabba Colley

i. P-509-1429-1428-1460: Teachers’ Perceptions of the New Science Curriculum Reforms: Lessons From Elementary School Teachers From One School District in South Africa
   Bongani D. Bantwini
   Barbara Hug

ii. P-43-88-87-124: How Teachers Modify the Full Option Science System (FOSS) Curriculum in Urban and Suburban Schools
   Piyush Swami
   Tori M. Livingston
   Karin I. Mendoza

    Douglas Huffman
    Anita Lundy

   Jerome M Shaw
   Sam O Nagashima

Group: Strand: 11 Sociocultural Issues in Science Education: Preservice, Inservice, and Professional Development (group 80)

Bayside A

Symposium:
Presider: Regin L. Suriel

P-761-1637-1634-1664: Sociocultural Issues in Science Education: Preservice, Inservice, and Professional Development
   Tonjua B. Freeman
   Regina L. Suriel
   Jessie R. Draper
   Mary M. Atwater
   Malcolm B. Butler
Group: Strand: 12 Enhancing Science Learning with Computer Simulations, Modeling, and Games (group 37)
Maurepas
Strand Coordinator Organized Paper Set:

Lara K. Smetana
Randy L. Bell

Martin Riopel
Patrice Potvin
Gilles Raîche
Steve Masson
Frédéric Fournier

Norman Thomson
Panwilai Chomchid
Sutthida Chamrat

iv. P-530-972-971-1005: The Kids Got Game: Using Quest Atlantis, a 3D Virtual Computer Game, to Develop
Janice L. Anderson
Michael Barnett
Heidi Sardina

Group: Strand: 13 Views of the Nature of Science from Biology, Philosophy /Theology, Pre-service Instruction, International Perspectives, Scientists, and a (Kansas) Classroom Teacher (group 151)
Napoleon A3
Strand Coordinator Invited Symposium:
Presider: Michael U. Smith
S-774-1669-1666-1696: Views of the Nature of Science from Biology, Philosophy /Theology, Pre-Service Instruction, International Perspectives, Scientists, and a (Kansas) Classroom Teacher
Lawrence Scharmann
Michael U. Smith
Jonathan Osborne
George Griffith
Group: Strand: 14 Teacher Development for Environmental Education (group 120)
Napoleon A2
Strand Coordinator Organized Paper Set:
Presider: David Zandvliet

i. P-748-1591-1590-1620: Preservice Teachers’ Ideas on the Theory of Global Warming
   Julie L Lambert
   George DeBoer

ii. P-425-751-750-785: Action Research as a Means for Preparing to Teach Outdoors
    Tali Tal
    Orly Morag

iii. P-321-555-554-591: Pre-Service Teachers’ Intended Emphasis on Teaching
     Environmental Issues
     Elvan Alp
     Esme Hacieminoglu
     Hamide Ertepinar

iv. P-480-1251-1250-1282: A Case Study of the Development of Environmental
   Action Projects from the Framework of Participatory Action Research Within Two
   Middle School Classrooms
   Kim E. Charmatz

Group: Workshop: Writing an Effective Grant Proposal (group 153)
Grand Couteau
Workshop:
Writing an Effective Grant Proposal
   Nancy Pelaez
   Eileen Lewis

2:30 – 4 pm
Concurrent Sessions

Group: Strand: 1 Science Learning I (group 27)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Ron Atwood

i. P-716-1520-1519-1550: Students’ Learning of Measurement Concepts and Skills
   Through a Hands-On Science Curriculum
   Tingho Huang
   Jennifer L. Cartier
P-461-827-826-861: What’s the Science Behind It? Students’ Models of Motion in a Design-for-Science Classroom  
Mary J. Leonard

Emine Adadan  
Karen E. Irving  
Kathy C. Trundle

P-371-1568-1567-1597: Analyzing Discourse Functions in Student Research Reports to Assess What Students Gain Through Research Experiences  
Roman Taraban  
Amy Pietan  
Russell Myers

Group: Strand: 2 The Science Classroom Environment (group 89)  
Napoleon B3

Strand Coordinator Organized Paper Set:

P-473-858-857-892: Factors That Influence Question Rejection in Two Urban Middle School Science Classrooms  
Meghan P Groome

P-90-860-859-894: Consistency of Moral Sensitivity Across Varying Socioscientific Issues  
Samantha R. Fowler  
Leila Amiri

P-268-613-612-649: The Driving Question Board: A Tool to Support Inquiry-Based Learning  
Ayelet Weizman  
David Fortus

P-458-1052-1051-1085: Taiwanese and German Students’ Attitude Towards Science and the Nature of Science - What Can We Learn From a Comparative Perspective?  
Birgit J Neuhaus  
Wen-Hua Chang
Group: Strand: 4 Curriculum Reform (group 59)
Napoleon B2
Strand Coordinator Organized Paper Set:
Presider: Sherry S. Herron

i. P-463-928-927-961: The Creation of a Pedagogy of Promise: Examples of Educational Excellence in High-Stakes Science Classrooms
   Cherie A. McCollough

   Jennifer S. Coble

iii. P-324-1598-1597-1627: Lesson-Planning Strategies of Reform-Based and Non-Reform Based First Year Science Teachers
    Sarah R. Hick

    In-Young Cho

Nottoway
Symposium:
Presider: Sherri Brown

S-331-1135-1134-1167: Scientists Learning Science: A Collaborative Partnership Between Science Doctoral Students and K-8 Science Teachers
   Martin G. Balinsky
   Nancy Davis
   Penny J. Gilmer
   D. Ellen Granger

Group: Strand: 6 Working with Teachers in Informal Science (group 48)
Napoleon A1
Strand Coordinator Organized Paper Set:
Presider: Ellen McCallie

i. P-438-804-803-838: Proposing a Pedagogy for Science Museum Education
   Heather C. King
   Lynn U. Tran
ii. P-497-906-905-939: Enhancing Teaching and Learning in Science Through Scientists in School Outreach
   Erminia G. Pedretti
   Lindsay Baker
   Isha De Coito
   Marie-Claire Shanahan

iii. P-703-1452-1451-1483: Changes in Biology Teachers' Attitudes and Behavior Toward Informal Learning Sites: An Urban Case Study
    Elizabeth C. Babcock
    Judith S. Lederman
    Norman G. Lederman

iv. P-481-1641-1638-1668: Parental Involvement in a Home-School Science Initiative as a Predictor of Positive Attitudes About Science Education
   Cynthia A. Lundeen
   Sibel Kaya

Group: Strand: 7 Professional Identity and Community Learning (group 114) Borgne

Strand Coordinator Organized Paper Set:

   Richard H. Kozoll

i. P-64-490-489-526: A Case Study of a Pre-Service Chemistry Teacher’s Pedagogical Content Knowledge Development: From a Methods Course to Field Experiences
   Chatree Faikhamta
   Vantipa Roadrangka
   Judy Moreland
   Richard K. Coll

    Oliver Dreon, Jr.
    Scott P. McDonald

iii. P-203-335-334-371: A Case Study of Community Immersion as a Context for Creating a Community-Based Science Teacher Preparation Curriculum
    Vicente Handa
    Deborah J. Tippins
    Norman Thomson
Group: Strand: 8 Authentic Professional Development Opportunities (group 6)
Oak Alley
Strand Coordinator Organized Paper Set:
Presider: Lawrence Flick

i. P-513-932-931-965: No Silver Bullet: Making Sense of Teacher Change Following an Inquiry-Based Research Experience for Teachers
Margaret R. Blanchard
Sherry A. Southerland

Dianna Nichols
Dan Churach
Darrell Fisher

iii. P-258-472-471-508: Research Experiences for Teachers: Implications for Science Teachers’ Planning and Reflection
Crissie M. Grove
Patricia Dixon

Allan Feldman
Allyson M. Rogan-Klyve
Kent A Divoll

Group: Strand: 10 Emerging Science in the Classroom: The Case of Nanoscience and Nanotechnology (group 14)
Edgewood A/B
Related Paper Set:
Presider: Joseph S. Krajcik

i. P-645-1340-1339-1371: Paper #1 Introduction of Emerging Science Into the Classroom- the Case of Nanoscience and Nanotechnology
Joseph S. Krajcik
Shawn Y. Stevens

ii. P-645-1353-1352-1384: Paper #2 Exploration of Student Understanding and Motivation in Nanoscience
Kelly Hutchinson
Namsoo Shin
Shawn Y. Stevens
Molly L. Yunker
Nicholas Giordano
George Bodner
iii. P-645-1358-1357-1389: Paper #3 Students’ Conception of Size
Cesar Delgado
Shawn Y. Stevens
Namsoo Shin
Molly L. Yunker
Joseph S. Krajcik

Curriculum, Instruction and Assessment Design
Namsoo Shin
Shawn Y. Stevens
Cesar Delgado
Joseph S. Krajcik
James W. Pellegrino

v. P-645-1502-1501-1532: Paper #5 A Design-Based Approach to the Professional
Development of Teachers in Nanoscale Science
Lynn A. Bryan
Shanna Daly
Kelly Hutchinson
David Sederberg
Eric Hagedorn
Nicholas Giordano

Group: Strand: 10 Assessment Development (group 8)
Bayside C
Strand Coordinator Organized Paper Set:
Presider: Martha Fewell

i. P-605-1162-1161-1194: Measuring Knowledge of Natural Selection: A
Methodological Comparison of C.I.N.S., an Open-Response Instrument, and Oral
Interview
Ross H. Nehm
Leah Reilly

ii. P-433-770-769-804: Developing and Evaluating a Proposed Model for Increasing
the Validity of Tests
Alexander Kauertz
Hans E. Fischer

iii. P-742-1583-1582-1612: Exploring Teachers’ Feedback in Student Science
Notebooks
Min Li
Maria A. Ruiz-Primo
Shining Tsai
Julie Scheneider
iv. P-240-396-395-432: “I Want to Enable Teachers in Their Change”: Exploring the Influence of a Superintendent on Science Delivery
   Thomas Owen
   Paul Cuthbert
   Brian E. Lewthwaite

Group: Strand: 11 Re-visioning Science Education from Feminist Perspectives (group 77)
Bayside A
Symposium:
Presider: Kate Scantlebury
   S-208-343-342-379: Re-Visioning Science Education From Feminist Perspectives: Challenges, Choices and Careers
   Kate Scantlebury
   Rowhea Elmesky
   Rose Pringle
   Elizabeth McKinley
   Bambi Bailey
   Gale Seiler

Group: Strand: 13 Investigating Textbooks for Coverage of the Nature of Science (group 133)
Napoleon A3
Strand Coordinator Organized Paper Set:
Presider: Barbara Crawford

i. P-453-1565-1564-1594: Exploring Author-Editor-Publisher Perspectives and Interactions Regarding Representations of the Nature of Science in the Development of a Contemporary Science Textbook
   Maurice DiGiuseppe

   Trevor J. Owens

iii. P-277-644-643-680: Understanding Quantum Numbers in General Chemistry Textbooks
    Mansoor Niaz
    RamÛn Fernández
Special Lecture: On the Restructuring of Science Education in the Post-Katrina Schools of New Orleans (group 183)

Grand Couteau

Special Lecture:
Co-organized by Felicia Moore and Claudia Melear
Discussants: Felicia Moore and Claudia Melear, Kristin Gunckel, Ed Smith
Margo Guilott, Ph.D., Assistant Superintendent of Curriculum and Instruction, St. Tammany Parish Public Schools, Regina Sanford, Ph.D, Supervisor of Curriculum and Instruction for Secondary Instruction, St. Tammany Parish Public Schools, Denise Barnes, Supervisor of Curriculum and Instruction for Secondary Instruction, St. Tammany Parish Public Schools and Dana Gonzalez, New Orleans Public Schools

This special lecture will focus on the restructuring of science education in the Post-Katrina schools of New Orleans. A video on the rebuilding efforts will introduce the session, followed by presenters who will discuss the making of the CD video and their efforts at rebuilding science education. A question and answer session will close the program. As the end of the session, NARST members will be presented with opportunities to actively engage in long-term and short-term service projects to assist in the rebuilding efforts during and after the NARST conference.

4:15 – 5:45 pm

Concurrent Sessions

Group: Strand: 1 Science Understanding I (group 28)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Vicente Talanquer

i.   P-498-904-903-937: Developing Students’ Understanding of Astronomy in the Planetarium
     Julia D. Plummer

ii.  P-695-1423-1422-1454: Connecting Levels of Representation: Emergent vs. Submergent Thinking
     Lana Tockus-Rappoport
     Guy Ashkenazi

iii. P-510-1304-1303-1335: The Effect of Classroom Practice on Students’ Understanding of Models
     Yael Shwartz
     Aaron Rogat
     Joi Merritt
     Joseph S. Krajcik

     Michelle P. Cook
     Glenda Carter
     Eric N. Wiebe
Group: Strand: 2 Student Performance in the Science Classroom (group 90)
Napoleon B3

Strand Coordinator Organized Paper Set:
Presider: Bina Vanmali

i. Q-53-104-103-140: Typology of Interpersonal Education for Primary Education
   Bruce G. Waldrip
   Darrell L. Fisher
   Jeffrey Dorman
   Perry den Brok

ii. P-741-1573-1572-1602: The Social and Emotional Context of Task Conflicts
    Li-Ching You

iii. P-612-1213-1212-1245: Examining the Relationship Between Student Learning
    and Implementation Fidelity
    Joseph A. Taylor
    Doug Coulson
    Janet Powell
    Pam Van Scotter

iv. P-587-1122-1121-1155: The Influence of the Process of Vertical Linkage in
   Different Instructional Approaches on the Performance of Students
   Ina B. Glemnitz
   Elke Sumfleth

Group: Strand: 4 Classroom Inquiry (group 60)
Napoleon B2

Strand Coordinator Organized Paper Set:
Presider: Carol O’Donnell

   Effects of Inquiry and Direct Instruction
   Norman G. Lederman
   Per-Olof Wickman
   Judith S. Lederman
   Anders Telenius

ii. P-584-1110-1109-1143: Put Inquiry Teaching Into Practice: A Feasible Model of
   Infused Inquiry Teaching
   Jun-Yi Chen
   Huey-Por Chang
   Chorng-Jee Guo
   Wen-Yu Chang


Group: Strand: 5 Conceptual Development (group 100) Nottoway
Strand Coordinator Organized Paper Set:
Presider: Kristen L. Hutchins

i. P-478-966-965-999: Nanoscience Course Impact on Conceptions of Spatial Scale Thomas R Tretter Gail Jones Michael Falvo


iii. P-247-588-587-624: The Effect of University Science Faculty Beliefs on Pedagogical Transformation and Transfer Christina L. Jacobs Susan A. Yoon Tracey C. Otieno

iv. P-95-939-938-972: Science is in Our Brains and Religion is in our Blood: Muslim Teachers and Scientists Conceptions of Biological Evolution and Evolution Education Anila Asghar Brian Alters

Group: Strand: 7 Science Technology and Society Education (group 115) Borgne
Strand Coordinator Organized Paper Set:

i. P-733-1542-1541-1572: Preservice Teachers’ Explorations in STS: Problems and Promises Nida’a Makki

ii. P-541-1428-1427-1459: The Effect of STS Course as Preparation for Science Teaching Hakan Akcay Robert Yager Behiye Bezir Akcay
Group: Strand: 8 Factors Affecting Certifying and Retaining Science Teachers (group 18)
Oak Alley
Strand Coordinator Organized Paper Set:
Presider: Ann Cavallo

i. P-375-700-699-734: The Interaction of Personal and Contextual Factors During the Induction: Shaping the Enactment of Science Reform
Yavuz Saka
Sherry A. Southerland

ii. P-543-1005-1004-1038: How Does the National Board Certification Process Facilitate Teachers’ Pedagogical Content Knowledge Development?
Soonhye Park
J. Steve Oliver

iii. P-57-111-110-147: Science Teacher Adaptation and Marginalization
Konstantinos Alexakos

iv. P-601-1155-1154-1187: Helping Uncertified Science Teachers Survive Teaching and Focus on Student Learning
Donna R. Sterling
Wendy M. Frazier
Mollianne G. Logerwell
Karen D. Dunn

Group: Strand: 9 Reflective Practice and Science Teacher Education (group 81)
Gallier A/B
Strand Coordinator Organized Paper Set:
Presider: Brenda Capobianco

i. P-156-787-786-821: The Impact of Collaborative Reflection on Preservice Elementary Teachers’ Understanding of Technology Integration in the Science Classroom
Tom J. McConnell

ii. P-318-548-547-584: Teaching Like a Researcher: Evaluation of Student Science Achievement Gains Within Teacher Classroom Action Research Projects
Margilee P. Hilson
Kathy Cabe Trundle
   Elaine V. Howes

iv. P-389-683-682-717: Reflective Practices of Pre-Certified, Inservice Teachers Within an Electronic Portfolio
   Brian C. Baldwin

**Group: Strand: 10 Programmatic Assessment: Tools for Informed Restructuring of Curriculum (group 175)**

**Bayside C**

*Symposium:*

*Presider: Martha D. Fewell*

   Philip M. Sadler
   Kathy S. Williams
   Kathleen Fisher
   Bryce Battisti

**Group: Strand: 11 Identity, Gender and Science Learning (group 71)**

**Bayside A**

*Strand Coordinator Organized Paper Set:*

i. P-213-350-349-386: Identity, Coteaching and Becoming Yourself in Science: The Story of an African American Preservice Teacher
   Gale A. Seiler
   Dana Johnson

ii. P-262-1148-1147-1180: I Could See Myself as a Chemist?: An Examination of the Science Identity Formation in High School Mexican American Girls
   Renee P. Beeton
   Genie Canales
   Loretta L. Jones

iii. P-496-1009-1008-1042: Gender’s (Not Sex’s) Impact in a Science Classroom and on Students’ Performance
    Howard M. Glasser

   Jessica J. Thompson
   Mark Windschitl
Group: Strand: 13 Students’ Conceptions of the Nature of Science (group 135)  
Napoleon A3  
Strand Coordinator Organized Paper Set:  
Presider: Fouad Abd-El-Khalick

i. P-696-1406-1405-1437: Turkish College Biology Students’ Acceptance of Evolution  
Deniz Peker

ii. P-393-691-690-725: Students’ Beliefs in Pseudo-Science  
Mats Lundström

Dana L. Zeidler  
Brendan E. Callahan  
Karey Burek  
Troy D. Sadler  
Scott Applebaum

iv. P-647-1266-1265-1297: A Change in Perspective: Science Education Graduate Students’ Reflections on Learning About NOS  
George V. Akom  
Renee S. Schwartz  
Brandy Skjold  
HangHwa Hong  
Fang Huang  
Robert E. Kagumba

Group: Strand: 14 Environmental Education (EE) as a Context for Science Education (group 149)  
Napoleon A2  
Strand Coordinator Invited Symposium:  
Presider: Julie Lambert

i. P-772-1663-1660-1690: Paper #2 Beginnings: The EE RIG at NARST  
Yvonne Meichtry

ii. P-772-1662-1659-1689: Paper #1 Indigenous Knowledge Contributions to EE  
Pauline Chinn

iii. P-772-1665-1662-16: Paper #4 EE as a Context for Science Education  
David Zandvliet
Group: International Committee-sponsored Symposium: Curriculum Changes in Science Education in Australia and New Zealand: Challenges and Opportunities (group 144)

NARST Annual International Conference 2007

Grand Couteau

NARST International Committee- and ASERA-Sponsored Symposium:

ASERA is the Australasian Science Education Research Association. This symposium is jointly sponsored by both NARST and ASERA.

Presider: David F. Treagust

i. P-767-1649-1646-1676: Paper #1 Toward a Framework for School Science Education in Australia
   Leonie Rennie
   Denis Goodrum

ii. P-767-1650-1647-1677: Paper #2 Implementing a Context-Based Approach in a Chemistry Class: Successes and Dilemmas
    Donna King
    Stephen Ritchie

    Coral Campbell
    Gail Chittleborough
    Peter Hubber
    Russell Tytler

    Anne Hume
    Richard K. Coll
6 – 7 pm

Group: Membership & Elections Committee-sponsored: Mentor Mentee Nexus  
(group 161)  
Nottoway  
Membership and Elections Committee-Sponsored (Social):  
Alan Blakely and Brian Fortney, members of the Membership & Elections Committee, are  
the Presides of this session.  

P-786-1698-1695-1725: Mentor-Mentee Nexus  
Alan Blakely  
Brian Fortney

7 – 9 pm

Group: Presidential/Welcome Reception  
Napoleon Exp. Hall & Ballroom  
Presidential Welcome Reception  
NARST President Jonathan Osborne welcomes all NARST members and their guests to  
this opening reception.
Monday, April 16th

7:00 – 8:15 am
Committee Meetings

Awards Committee Meeting
Nottoway

Equity and Ethics Committee Meeting
Maurepas

External Policy and Relations Committee Meeting
Napoleon B1

International Committee Meeting
Bayside A

Membership and Elections Committee Meeting
Borgne

Publications Advisory Committee Meeting
Napoleon B3

Research Committee Meeting
Grand Chenier

8:30 – 10 am
Plenary Session

Program Committee-sponsored Plenary Address: The Role of Reading, Writing, and Language in Supporting Inquiry-based Science in Our Schools: Why We Must Lead with the Science (group 152)
Napoleon CD123 & CD Corridor

*Plenary Address: Introduced and presided by NARST Past President Jim Shymansky
The Role of Reading, Writing, and Language in Supporting Inquiry-Based Science in Our Schools: Why We Must Lead With the Science
P. David Pearson

10:15 – 11:45 am
Poster Sessions
Group: Strand: 1 Posters: Science Learning, Understanding and Conceptual Change (group 2)
Napoleon B1
Poster Set:
Presider: s: Anil Banerjee and Eva Toth

i. Q-351-1270-1269-1301: Elementary Students’ and Pre-Service Teachers’ Perceptions of Rock Layers

ii. Q-408-1451-1450-1482: Comparing the effect of motivation between web-based instruction with traditional science teaching on students’ conceptual learning outcome
    Hsiao-Lin Tuan
    Chi-Hung Liao
    Hung-Chih Yen

iii. Q-103-1599-1598-1628: Middle School Students’ Understanding of Convection as a Causal Mechanism for Generating Winds
    Eunmi Lee
    Matthew Rossi
    Daniel C. Edelson

    Beata Biernacka
    Jazlin Ebenezer

v. Q-417-738-737-772: Learning Communities or Science Classrooms? A Comparative Case Study of Science Learning
   Rachel S. Sheffield
   Grady Venville
   Leonie J. Rennie

vi. Q-294-1381-1380-1412: Mental Models of Heat Transfer
   Guo-Li Chiou
   O. Roger Anderson

vii. Q-526-1424-1423-1455: Characterization of Student Groups Clustered by Responses to Course Examinations Related to Atomic Structure and Mental Models of Atomic Structure as Represented in Interview Responses
    Eun Jung Park
    Arthur L. White
Serena N. McCalla
David F. Treagust

Group: Strand: 2 Teaching and Learning Poster Session I (group 87)
Southdown
Poster Set:

i. Q-183-298-297-334: Scientific Inquiry in High School Science and Agriculture Classes: Opportunities for Students to Enrich Their Conceptions of the Nature of Science
Julie Grady
David Lally
Erin Dolan

ii. P-309-929-928-962: Online Professional Mentoring: How Do Plant Scientists and Student Research Teams Communicate about Students’ Scientific Investigations?
Carol L. Stuessy
Claire Hemingway

Esme Hacieminoglu
Ozgul Yilmaz-Tuzun
Hamide Ertepinar

iv. P-657-1315-1314-1346: Enhancing the Level of Inquiry in the Science Classroom
Lara M. Gengarelly
Eleanor Abrams
Karen Graham

Mary V. Mawn
Kathleen S. Davis

vi. Q-403-1334-1333-1365: The Influence of Teacher Knowledge and Beliefs in Developing Middle School Students’ Content Knowledge and Scientific Explanations During a Project-Based Chemistry Curriculum
Jeffrey C. Nordine
vii. P-53-105-104-141: Using Measures of Teacher Interpersonal Behaviour to Bring About Change in Primary Science Classrooms
Bruce G. Waldrip
Paula Renee
Darrell L. Fisher
Jeffrey Dorman

viii. Q-411-724-723-758: Student Responses to One Another: A Sequential Analysis of Small Group Interactions
Lynnae C. Flynn
Glenda Carter
Eric Wiebe
Susan Butler
John Park

Mutindi Ndunda
Irene Osisioma

x. Q-285-528-527-564: Seeing the Forest Through the Trees: Elementary and Middle School Teachers Learning Science in an Online Biology Course
Kathleen S. Davis
Mary Mawn

Mark T. Enfield

Jazlin Ebenezer
Osman N. Kaya

Steve Alsop
Sheliza Ibrahim
Group: Strand: 2 Teaching and Learning Poster Session II (group 88)
Napoleon B3

(Poster Set):

i. P-516-938-937-971: Affordances of Class Murals for Learning Science in Urban Primary-Grade Classrooms
   JoElla E. Siuda
   Maria Varelas
   Christine C Pappas
   Ibett Ortiz

ii. P-507-922-921-955: Drama Activities as Ideational Resources
    Maria Varelas
    Christine C. Pappas
    Eli Tucker-Raymond
    Justine M. Kane
    Jennifer Hankes

iii. P-244-406-405-442: The Linguistic Construction of Expert Identity in Professor-Student Discussions of Science
    Alandecom W. Oliveira
    Troy D. Sadler
    Suslak Daniel

iv. P-552-1036-1035-1069: Standards-Based Assessment of Geology and Evolution in the New Zealand Secondary School Curriculum
    Glenn D. Vallender

v. P-633-1222-1221-1254: Teaching Strategies in a Science Camp for ESL Students: A Case Study
   Pi-Chu Kuo

vi. P-223-366-365-402: Examination of 7th Grade Students’ Curiosity Level With Respect to Some Real-Life Events of Physics
    G-khan Serin
    Ali Eryilmaz

vii. Q-322-592-591-628: Factors Influencing the Persistence and Non-Persistence of African American Students in Scientific Majors at a Predominantly White University
    Andre’ M. Green
    George Glasson
    Brenda Brand
viii. P-269-1554-1553-1583: Conceptual Interference in Biological Education: How Jigsaw Puzzle/Lock and Key Models of Molecular Interactions Impact Understanding Evolutionary Change
   Michael W. Klymkowsky

ix. P-443-791-790-825: Talking Science: Patterns of Inquiry in an Elementary School Classroom
   Susan A. Kirch

x. P-65-1262-1261-1293: Investigating the Existence of Interactivity in Various Instructional Settings
   Murat Kahveci

xi. Q-625-1307-1306-1338: Exploring Students’ Socio-Scientific Argumentation and Creative Thinking Skills in Estonian 9th Grade Science Classes
   Anne Laius
   Miia Rannimäe

xii. Q-632-1243-1242-1274: How Reflective Writing Reveals Cognitive and Affective Alienation and Affiliation in a College Biology Course
    Meena M. Balgopal

xiii. Q-680-1386-1385-1417: Making Newspapers in Biology Class
     Jun-Euy Hong
     Moon-jung Han
     Young-Jun Shin
     Jung Hoon Choi
     Youngsuk Jeon

xiv. Q-315-1370-1369-1401: The Effects of Experience and Context on Discourse in an Inquiry-Based Science Content Course
    Morgan M. Luce
    Charlotte J. Plog
    Natalia C. DeKalb
    Emily J. Borda

Group: Strand: 3 Poster Presentations (group 46)
Bayside B

Poster Set:

i. Q-676-1355-1354-1386: Developing a Measure to Assess the Pedagogical Content Knowledge of Pre-Service Elementary Teachers Concerning Models
   Gail R. Luera
   Susan A. Everett
   Charlotte A. Otto
ii. Q-709-1481-1480-1511: Little Scientists Talk in Inquiry Science Classroom  
In-Young Cho  
Gail Richmond  
Charles W. Anderson

iii. Q-87-505-504-541: Classroom-Based Inquiry: Two Beginning Teachers’ Knowledge and Practices for Science Teaching  
Lucy Avraamidou  
Carla Zembal-Saul

Group: Strand: 4 Thinking about Middle and High School Science Teachers and Students (group 67)  
Napoleon B2

Poster Set:

i. Q-704-1483-1482-1513: Pseudo Student Talk (PST)- A Teacher’s Strategy to Make Students Participate in the Class  
Yoonjoo Shin  
Seung Urn Choe

ii. Q-484-1119-1118-1152: Critical Thinking Skills of Expert Teachers  
Jon C. Saderholm  
Nate G. Mitchell  
Tom R. Tretter

iii. Q-554-1037-1036-1070: Homework in Chemistry Education at the End of Secondary School  
Corinna Kieren  
Elke Sumfleth

iv. Q-178-288-287-324: Developing Linguistic Competencies While Teaching Sound to 8th Grade Pupils  
Monica Baptista  
Ana M. Freire

v. Q-534-987-986-1020: Exploring Middle School Studentsí Attitudes and Perceptions of Science and Art  
Michelle A. Fleming  
Kelly M. B. Strifling  
Frances P. Lawrenz

vi. Q-588-1123-1122-1156: Changing Teachersí Instruction to Improve the Acquisition of Students’ Experimental Competencies  
Regina S. H. binger  
Elke Sumfleth
Xornam S. Apedoe
Christian D. Schunn

viii. Q-617-1488-1487-1518: Middle and High School Teachers’ Conceptions Regarding the Use of Models for Nanoscale Science Instruction
Shanna R. Daly
Lynn A. Bryan
Nick Giordano

Group: Strand: 5 College Science Teaching and Learning Interactive Poster Session (group 108)
Not tow ay
Poster Set:
Presider: Vicente Talanquer

i. Q-346-598-597-634: Department-Level Curriculum Reform in Engineering: Conceptual Frameworks and Faculty Experiences
Terry Wildman
Andre M. Green
Mary L. Wolfe
Vinod Lohani
Kumar Mallikarjunan

Elizabeth J. Berkes
Mark Hogrebe

iii. P-152-246-245-282: The Effects of the Undergraduate Teaching Assistant Experience in a Large Enrollment Introductory Microbiology Course
Kelly A. Schalk
Ann C. Smith
J. Randy McGinnis
Amy B. Hendrickson

iv. P-165-275-274-311: Conceptual and Procedural Knowledge Community College Students Use When Solving a Complex Science Problem
Janice L. Eibensteiner

v. P-385-677-676-711: The Pedagogical Content Knowledge of Latin-American Chemistry Professors on the Magnitude “Amount of Substance” and Its Unit “Mole”
Andoni Garritz
Kira Padilla
Ana M. Ponce-de-Leon
Florescma M. Rembado
vi. Q-185-332-331-368: How Can College Science Instruction Change to Model Student-Centered Approaches?: Lessons from a Partnership Connecting Science Faculty With Schools
Stacy Olitsky

Eva Toth
Felicia Cianciarulo
Christopher Post
Garth Ehrlich

viii. P-658-1324-1323-1355: Grounding Earth Science for Classrooms: The Effects of a “Pre-Ed” Lab Section for Prospective Education Students on Achievement, Science Literacy and Attitude in an Introductory College Earth Systems Course
David Blades
Eileen van der Flier-Keller

ix. Q-213-1085-1084-1118: Collaborative Study of Active Learning in a College Biology Course
Gale A. Seiler
Phillip G. Sokolove
Salar Sanjari

x. Q-86-259-258-295: Using the Sequential POE to Explore Students’ Abilities for Scientific Explanations
Liang-Rong Hsu

xi. Q-743-1577-1576-1606: The Development of Scientific Reasoning in Biology Majors
Melissa Schen
Anita Roychoudhury

xii. Q-724-1513-1512-1543: Integrating Issues in Science Through the Curriculum
Kathy S. Williams

Group: Strand: 6 Science Learning in Informal Settings (group 53)
Napoleon A1
Poster Set:
Presider: Shawn Rowe

i. P-683-1433-1432-1464: Fostering Studentsí Understanding of Interdisciplinary Science in a Summer Science Camp
Shawn Y. Stevens
Namsoo Shin
César Delgado
Molly Yunker
ii. Q-306-937-936-970: Science Center Visitor Understanding of the Science Behind Renewable Energy  
James Kisiel

iii. Q-577-1105-1104-1138: Three Relationships Between Gesture and Language in Science Exploration  
JaeYoung Han  
Jung Hoon Choi  
Young-Joon Shin  
Jeong-woo Son  
JeongHo Cha  
Bookkee Hwang

iv. Q-61-1497-1496-1527: Learning and Teaching Science in Practice: Design of a High-School Science Internship  
Nicholas Stroud  
Rachel Connolly  
Zohar Ris

Huang Chun Ju  
Jian Miao Ju

vi. Q-46-132-131-168: Young Students’ Perspectives on Chemistry Summer Camps  
Leo MacDonald  
Ann Sherman

April L. Luehmann

viii. Q-370-1391-1390-1422: Arts and Science Course in a Museum  
Maritza Madonald  
Adriana Aquino  
William Schiller  
Rachel Conolly

ix. Q-259-1631-1628-1658: A Pedagogy of Public Science: Mapping the Production of Science in the Media with Science Writers, and Analysing a Contemporary Science Issue - Avian Flu  
Sheliza Ibrahim  
Steve Alsop
x. Q-105-662-661-696: Harmful Results of Smoking Cigarettes and Water-Pipes: A Science - Chemistry Laboratory for All
Ron Blonder

xi. Q-66-483-482-519: Reciprocal Expertise of Apprenticeship in Authentic Laboratories
Pei-Ling Hsu
Wolff-Michael Roth

xii. Q-631-1216-1215-1248: Joining Forces: Recruiting Parent and Preservice Teacher Support and Involvement in Elementary School Science Partnerships
Sibel Kaya
Cynthia A. Lundeen

Gili Marbach-Ad
Patricia Seifert
Scott Barnett
Niv Ad
Phillip G. Sokolove
Edward Lefrak

Group: Strand: 7 Poster Set I (group 131)
Borgne

Poster Set:

i. P-670-1351-1350-1382: Preliminary Analyses of a Nationwide STEM Teacher Recruitment and Retention Program
Marjorie Bullitt Bequette
Frances Lawrenz
James Appleton
Deena Wassenberg

ii. P-660-1389-1388-1420: Developing an Inquiry-Based Physical Science Course for Preservice Elementary Teachers
Paul E. Adams
Zdeslav Hrepic
Germaine L. Taggart
Lanee Young
iii. P-611-1168-1167-1200: Preparing Elementary Teachers to Teach Science in Urban Elementary Schools: The Impact of Intensive Field Experiences, Curriculum Implementation, and Beliefs
   Anne P. Gatling
   Dean Anderson
   Meredith Houle
   Michael Barnett

iv. P-758-1629-1626-1656: Dynamic Model of Pedagogical Content Knowledge
    Chia-Yu Wang
    Mark J. Volkmann

   Sevinc Ongel-Erdal
   Bilge Taskin-Can
   Berna Gunhan

vi. P-545-1010-1009-1043: Some Elements to Design Effective Math and Science Teacher Recruitment Programs
   Laura J. Moin
   Christian D. Schunn

vii. Q-399-779-778-813: Where is Science in Preservice Elementary Teachers’ Conceptions of Teaching?
    Tara Falcone
    Danielle Ford

viii. Q-412-733-732-767: Developing Student Teachers’ Conceptions of Good Science Teaching: The Role of Video Workshops
     Ching Sum Hui
     Benny Hin Wai Yung

ix. Q-353-704-703-738: Designing the Best Pre-Service Urban Elementary Science Methods Course- Dilemmas and Considerations
    Hedy Moscovici
    Irene Osisioma

Group: Strand: 7 Poster Set II (group 173)
Edgewood A/B
Poster Set:

i. Q-248-692-691-726: Development of a Questionnaire to Assess Conceptions of Science Teacher Mentoring
   Thomas R. Koballa
   Carla Zembal-Saul
   Reizelie Barreto

iii. Q-593-1142-1141-1174: Inquiry and the Pre-Service Science Teacher
    Lisa M. Martin-Hansen

   Judith A. Morrison
   Amy Roth McDuffie

v. Q-650-1271-1270-1302: Who is the “Self” That Teaches Science?: Looking at Identity Development in Learning to Teach Elementary Science
   Laura L. Creighton

vi. Q-706-1536-1535-1566: Increasing Early Childhood Education Majors’ Self-Efficacy Beliefs via Backward Design
   Nazan U. Bautista

    Olivia Eun-mi Yang
    Virginia Epps

viii. Q-284-646-645-682: Pre-Service Teachers’ Experience an Interdisciplinary Project-Based Learning Environment
    Jennifer A. Wilhelm
    Sonya E. Sherrod
    Kendra L. Walters

ix. Q-610-1163-1162-1195: Exploring Mechanism of Science Intern Teachers’ Conflicts of Their Personal Practical Theory Into Teaching Change During Their Internship
    Shu-Fen Lin
    Huey-Por Chang
    Hsiao-Lin Tuan
**Group: Strand: 8 Poster Session: Inservice Science Education (group 25)**

**Oak Alley**

*Poster Set:*

i. Q-111-532-531-568: Teaching Practices Representative of Full Immersion and Partially Scaffolded Authentic Inquiry in a Professional Development Comparative Study
   Kelley L. Friden
   Nikki Hanegan

ii. Q-120-854-853-888: Improving Urban Earth Science Education: The TRUST Project
   Maritza Macdonald
   Heather Sloan
   Ellenor Miele
   Wayne Powell
   Myles Gordon
   Rosamond Kinzler

iii. Q-570-1396-1395-1427: Improving the Teaching of Physics: Professional Development for Teachers Changing Content Fields
    Peter S. Garik
    Andrew Duffy
    Arthur Eisenkraft
    Russell Faux
    Luciana Garbayo
    Tiffany-Rose Sikorski

iv. Q-556-1045-1044-1078: The Effectiveness of a Professional Development Program for Teachers of Young Children
   Miao-Hui Lin

v. Q-209-345-344-381: From Physics Courses for Teachers to Elementary Classrooms: The Transfer of Teaching Practices
   Danielle B. Harlow

vi. Q-481-1642-1639-1669: Time on Task: Increasing Science Teaching Time in the Elementary Classroom Through a Sustained Professional Development Initiative
   Cynthia A. Lundeen
   Diana C. Rice

vii. Q-546-1014-1013-1047: Content Mentoring and Its Impact on Middle Grades Mathematics and Science Teacher Effectiveness
    Rita A. Hagevik
    Mary Watson
    David Boger
    Larry Powers
viii. Q-471-873-872-907: Professional Development on Formative Assessment in Heterogeneous Science Classrooms
    Gayle A. Buck
    Margaret L. Macintyre Latta
    Juliann M. Kaftan

ix. P-640-1302-1301-1333: In-Service Teachers’ Conceptions of Nature of Science: Using the Views on Science and Education (VOSE) Questionnaire
    Kathleen A. Fadigan
    David M. Majerich
    Penny Hammrich

    Sherry A. Southerland
    Scott Sowell
    D. Ellen Granger
    Murat Kahveci
    Yavuz Saka

    Miia Rannikmae
    Jack Holbrook

Group: Strand: 9 Poster Session Collaborative Action Research in Science Education (group 83)
Gallier A/B
Poster Set:
Presider: Brenda Capobianco

i. Q-38-301-300-337: Conflicting Discourses: Preservice Science Teacher Action Research as a Scaffold for Negotiating Student Teaching
    Kevin M. Carr

ii. Q-448-803-802-837: Preparing Stewards of the Discipline Through Collaborative Action Research
    Brenda M. Capobianco
    Tom McConnell
    Lauren Schellenberger
    Michelle Priddy
Q-551-1031-1030-1064: Teachers’ Reflections on Supported Collaborative Inquiry in Professional Learning Communities
Tamara Holmlund Nelson
Greta Bornemann
Ray Nelson
Charlotte Waters
Kristin White
Ted Wilkins

Group: Strand: 10 Posters - Curriculum, Evaluation & Assessment I (group 12)
Grand Chenier
Poster Set:
Presider: Shehadeh Abdo

James V. Neufell
Richard A. Duschl

Q-159-1427-1426-1458: Development of a ‘Universal’ Rubric for Assessing Students’ Science Inquiry Skills
Briana E. Timmerman
Robert L. Johnson
John Payne

Q-339-600-599-636: Determining the Appropriateness of Terminology in Content-Aligned Assessment of Middle School Students: Examples from Plate Tectonics
Paula N. Wilson
George DeBoer

Q-192-1365-1364-1396: Lesson Planning Activity as a Tool to Assess Pre-Service Teachers’ Knowledge and Skills in Using Curriculum Materials
Minjung Bae

Q-432-769-768-803: Probing Middle School Students’ Understanding of Ideas About Chemistry Through Content-Aligned Assessment
Cari F. Herrmann Abell
George E. DeBoer

Q-333-571-570-607: Assessing Students’ Understanding of ‘Controlling Variables’
Arhonda Gogos
George DeBoer
vii. Q-478-967-966-1000: Valid and Reliable Physical, Life, and Earth Science Content Assessments for Middle School Teachers
    Thomas R. Tretter
    Sherri L. Brown
    William S. Bush
    Jon C. Saderholm
    Beverly D. Moore

viii. Q-721-1525-1524-1555: Letting the Cat out of the Bag: A New Tool to Assess Curriculum Materials
    Jeanetta Lee Kochhar
    Jennifer Cartier
    Wendy Sink

    Catherine M. Koehler
    David M. Moss

Group: Strand: 10 Posters - Curriculum, Evaluation & Assessment II (group 177)
Grand Couteau
Poster Set:
Presider: Joseph Jesunathadas

i. P-563-1061-1060-1094: How to Promote Scientific Literacy - Different Views From German Experts
    Claus F. Bolte

    Hsin-Kai Wu
    Ying-Shao Hsu
    Fu-Kwun Hwang

    Elizabeth Gonzalez
    Barbara Hug

    Isaak Aronson

v. P-746-1584-1583-1613: A Study on Learning Effects Among Students With Different Learning Styles Using Chemistry Education Website
    Yuan-Cherng Lin
    Chia-Ju Liu
vi. Q-234-533-532-569: Investigating Teacher Learning Supports in High School Biology Textbooks to Inform the Design of Edutative Curriculum Materials
Carrie J. Beyer
Cesar Delgado
Elizabeth A. Davis
Joseph S. Krajcik

vii. P-44-1098-1097-1131: The Development and Validation of Web Project Based Learning Environment Instrument (WPBLEI)
Chien-Liang Lin
Tai-Chu Huang
Yuh-Yih Wu

William F. McComas
Donna L. Farland

Group: Strand: 11 Poster Session (group 68)
Bayside A
Poster Set:
Presiders: Janell Catlin and Jennie Brotman

i. P-495-896-895-929: Scientist as ‘Self’ and ‘Other’: Using Self-Schema Theory as a Heuristic for the DAST
Valerie L. Talsma

ii. P-250-413-412-449: Sisters in Science Equity Reform Project
Michelle E. Myers
Penny L. Hammrich
Sonia M. Rodrigues

iii. Q-514-942-941-975: Studious Stayers, Loyal Lovers and Dedicated Dreamers: Science Teachers’ Perspectives on Remaining in the Urban Classroom
Kiyra B. Holt
Mary M. Atwater

iv. Q-462-833-832-867: Scientists in the Secondary Classroom: Effects on Middle School Students’ Future Enrollments in Science Classes
Carol C. Johnston
Fiona M. Goodchild

v. Q-390-687-686-721: Challenges and Successes in Transferring from Community College to a Science Teacher Education Program
Jacob Clark Blickenstaff
Sally Holloway
vi. Q-307-526-525-562: Examining Cultural Understandings of the Relationship Between Intelligent Design and Nature of Science
Daniel L. Dickerson
David Slykhuis
Karen Dawkins

Marcelle A. Siegel
Myron J. Atkin
Gloria R. Banuelos
Patricia Caldera
Katherine Nielsen
Claudia Scharff

viii. P-251-434-433-470: Avoidance as a Factor in the Under-Participation of Blacks in Science: The Impact of Cultural Memory
Courtney A. Howard

Cristina DeFranco
Bhaskar Upadhyay

x. Q-102-170-169-206: Using Constructivist Theories to Educate the ‘Outsider’
Nanette I. Marcum-Dietrich

Amanda C. King
Gail Jones
Bethany Broadwell
Amy Taylor

xii. P-298-1050-1049-1083: The Development of Metacognitive Skills Among Elementary School Students: A Cross-Sectional Study
Mustafa Sami Topcu

xiii. P-729-1526-1525-1556: Alternative Conceptions of Burning: A Study of the Worldview of Atayal Aboriginal Students in Taiwan
Huei Lee
Jen-min Chang
Chiung-Fen Yen
xiv. Q-407-716-715-750: Intersections of Evolution, NOS, the Demarcation of Science From Non-Science: The Views From a High School Biology Classroom
Lisa A. Donnelly
Valarie L. Akerson


**Maurepas**

**Poster Set:**

i. P-568-1269-1268-1300: Middle Grades Teacher Self-Efficacy Toward Learning Science and Integrating Video Games into The Curriculum
Leonard A. Annetta
Shawn Holmes
John C. Park

ii. P-762-1639-1636-1666: Investigating Students' Ideas About X-rays While Developing Teaching Materials for a Medical Physics Course
Spartak Kalita
Dean Zollman

Houn-Lin Chiu
Chia-Ju Liu
Chia-Chu Weng

iv. P-377-666-665-700: Learning About Motion Graphs in a Computerized Environment Through Bodily Activities
Galit Botzer
Michal Yerushalmy

v. P-669-1496-1495-1526: The Design of Converging Lens Computer Simulations and Their Effect on Image Formation Understanding
Scott W. Slough
Joel A. Bryan
John Milam

vi. P-515-935-934-968: Computer as Inquiry Partner for Deeper Understandings
Sara Salloum
Mihye Won
David Brown

vii. Q-494-895-894-928: Science Education Research Using Advanced Recording Technologies
Eric N. Wiebe
viii.  Q-682-1377-1376-1408: The Development of Scientific Literacy by Using Information Technology-Based Research Tools
Michiel W. van Eijck
Wolff-Michael Roth

**Group: Strand: 13 Perspectives on the Nature of Science (group 84)**

**Napoleon A3**

**Poster Set:**
**Presider: Brendan Callahan**

i.  Q-18-89-88-125: Supporting Elementary Teachers’ Efforts to Teach Nature of Science Through Action Research
Valarie L. Akerson
Deborah L. Hanson
Theresa A. Cullen

ii.  Q-161-573-572-609: Prescription for the Classroom: Policy Actors’ Conceptions of Science When Crafting the Scientifically-Based Research Guidelines in NCLB
Brian P. Zoellner

iii.  Q-452-808-807-842: Are Learners’ Views of Nature of Science Content-Dependent? A Review of the Research
Eun-Kyung Ko
Byoung-Sug Kim

iv.  Q-711-1612-1611-1641: Views on Evolution and Creationism: The Cases of Theology and Science Undergraduates in Korea
Seung-Urn Choe
Yumin Ahn
Miae Lee
Na-Hae Sung

v.  Q-92-156-155-192: Investigating Undergraduate Atmospheric Science Students’ “Ideas” about the Nature of Science
Loran E. Carleton
Gerald H. Krockover

**Group: Strand: 14 Interactive Posters in Environmental Education (group 119)**

**Napoleon A2**

**Poster Set:**
**Presider: Julie Lambert**

i.  P-204-337-336-373: Learning Environments that Support Environmental Learning
David B. Zandvliet
ii. Q-565-1069-1068-1102: Effects of a Biodiversity Course on College Students’ Decisions About Conservation Issues  
Shiang-Yao Liu  
Tung-Huang Yi  
Kuo-Hsiung Wang  
Oi-Tong Mak

iii. Q-607-1268-1267-1299: The Impact of Identity on the Pedagogical Practice of Environmental Educators  
Patrick F. Dowd

Leonie J. Rennie  
Rachel Sheffield  
Grady Venville  
Rosemary S. Evans  
Rekha Koul

11:45 – 12:30 pm

Lunch on your own

12:30 – 2 pm

Concurrent Sessions

Napoleon B1  
Symposium:  
Presider: Andrew Shouse  
Richard Duschl  
Okhee Lee  
Brian Reiser  
Kathleen Roth  
Jonathan Osborne  
Andrew Shouse
Group: Strand: 2 Connecting Science Learning to Personal Health: Understanding the Influence of Instruction, Family, Social Networks, and Institutions (group 166)
Napoleon B3
Symposium:

i. S-482-872-871-906: Connecting Science Learning to Personal Health: Understanding the Influence of Instruction, Family, Social Networks, and Institutions
   Suzanne Reeve
   Philip Bell
   Leah A. Bricker
   David E. Kanter
   Elizabeth B. Lynch

Group: Strand: 4 Video-based Analyses of German and Swiss Introductory Physics Instruction Dominating Instructional Patterns and Teachers’ Views (group 56)
Napoleon B2
Related Paper Set:
Presider: Reinders H. Duit

i. P-140-753-752-787: Paper #1 Video-Based Analyses of German and Swiss Introductory Physics Instruction - Dominating Instructional Patterns and Teachers’ Views
   Peter Labudde
   Reinders H. Duit
   Birte Knierim
   Bernhard Gerber
   Discussant: Joseph Krajcik

ii. P-140-754-753-788: Paper #2 Investigating Content Structures Provided in Video-Documented Science Instruction
   Maja Brückmann
   Reinders H. Duit

iii. P-140-755-754-789: Paper #3 Video-Based In-Service Training to Improve Science Teachers’ Support of Learning Processes
   Georg Trendel
   Hans E. Fischer
   Rainer Wackermann
   Thomas Reyer

   Nina E. Arnesen
   Doris Jorde
Group: Strand: 5 Strategies for Physical Science Instruction (group 101)
Nottoway

Strand Coordinator Organized Paper Set:
Presider: Sherri Brown

i. P-532-981-980-1014: Scientific Caricatures in the Earth Science Classroom: An Alternative Assessment for Meaningful Science Learning
   Renee M. Clary
   James H. Wandersee

    Nermin Bulunuz
    Olga S. Jarrett

iii. P-169-273-272-309: Achievement Goal Orientation as a Predictor for Learning in an Online Environment for Undergraduate Chemistry
     Kent J. Crippen
     Kevin D. Biesinger
     MaryKay Orgill

iv. P-63-941-940-974: The Impact of Inquiry-Based and Technology Supported Instruction on Pre-Service Teachersí Conceptions of Tides
    Sedat Ucar
    Kathy Cabe Trundle
    Lawrence A. Krissek

Group: Strand: 6 Science Center Technology and Exhibits (group 50)
Napoleon A1

Strand Coordinator Organized Paper Set:
Presider: Bill Watson

i. P-727-1517-1516-1547: Mathematics Content in a Public Aquarium/Science Center: Staff and Visitors’ Points of View
   Olga Rowe

ii. P-734-1547-1546-1577: Portable Computers in a Public Science Museum: Findings From Phase One of a Design Based Research Project on iPods and PalmOnes
    Molly E. Phipps
    Shawn M. Rowe
    Joseph Cone
iii. P-176-285-284-321: The Use of Mobile Wireless Technologies to Augment Displays in a Science Centre
   Tina Jarvis

iv. P-447-798-797-832: Dioramas as Depictions of Reality and Opportunities for Learning in Biology
   Michael J. Reiss
   Sue Dale Tunnicliffe

**Group: Strand: 7 Exploring Preservice and Beginning Elementary Teachers’ Learning With Curriculum Materials (group 113)**

**Borgne**

**Related Paper Set:**

**Presider: Mary Atwater**

i. P-234-1175-1174-1207: Paper #1 Using Instructional Models to Promote Effective Use of Curriculum Materials Among Preservice Elementary Teachers
   Kristin L. Gunckel
   Min-Jung Bae
   Edward L. Smith

ii. P-234-1176-1175-1208: Paper #2 Developing Pre-Service Teachers’ Professional Knowledge With Curriculum Materialsí Analysis Tasks
   Christina Schwarz
   Beth Covitt
   Min-Jung Bae
   Yovita Gwekerere

iii. P-234-1178-1177-1210: Paper #3 Beginning Elementary Teachers’ Learning Through the Use of Science Curriculum Materials: A Longitudinal Study
   Cory T. Forbes
   Elizabeth A. Davis

iv. P-234-1181-1180-1213: Paper #4 New Elementary Teachers’ Knowledge and Beliefs About Instructional Representations: A Longitudinal Study
   Shawn Stevens
   Elizabeth A. Davis

   Carrie J. Beyer
   Elizabeth A. Davis
Group: Strand: 8 Assessment Issues (group 21)
Edgewood A/B
Strand Coordinator Organized Paper Set:
Presider: Judith A. Morrison

i. P-164-1242-1241-1273: A Study of the Effect of Sustained, Whole School, Professional Development on Student Achievement in Science
   Carla C. Johnson
   Jane B. Kahle
   Jamison D. Fargo

ii. P-158-251-250-287: Systemic Reform in Teacher Education and Its Impact on K-16 Science Teaching and Learning
   Margaret G. Shroyer
   Cecilia M. Hernandez

iii. P-686-1417-1416-1448: “It’s All about the Test”: Promoting Science Literacy in an Era of Accountability
    Leigh K. Smith
    Kendra M. Hall
    Roni Jo Draper
    Marta Adair

Group: Strand: 10 Science Assessment Practices (group 7)
Grand Chenier
Strand Coordinator Organized Paper Set:
Presider: Barbara Austin

i. P-354-614-613-650: Understanding the Nested Relationship Between Teachers’ Epistemic, Pedagogical and Assessment Conceptions
   Mehmet Aydeniz
   Nancy T. Davis
   Sherry Southerland
   Penny J. Gilmer

   Robert Ochsendorf
   Curtis Pyke
iii. P-520-949-948-982: Portfolio Assessment in Science Education
   Jeffrey S. Carver
   William J. F. Hunter

   Sonya N. Martin
   Christina L. Jacobs
   Tracey Otieno

**Group: Strand: 11 Promoting New Directions in Science Education (group 76)**

**Bayside A**

*Strand Coordinator- Invited Paper Set:*

*Presider: Felicia M. Moore*

i. S-413-732-731-766: Promoting New Directions in Science Education
   Felicia M. Moore
   Magnia George
   Bryan A. Brown
   Brian A. Williams
   Eileen Carlton Parsons
   Bradford F. Lewis

**Group: Strand: 13 Nature of Science in Teacher Education (group 132)**

**Napoleon A3**

*Strand Coordinator Organized Paper Set:*

*Presider: Renee Schwartz*

i. P-155-307-306-343: Effectiveness of a Discursive/Argumentation-Based History, Philosophy and Sociology of Science Program in Enhancing Teachers’ Conceptions of the Nature of Science
   Meshach Mobolaji Ogunniyi

ii. P-489-910-909-943: Across Content and Pedagogy: Seeking Consistency in NOS Instruction in Teacher Education Programs
   Deborah L. Hanuscín
   Michele H. Lee

iii. P-739-1564-1563-1593: Professional Development for Teaching of the Nature of Science - What Works Best for In-Service Science Teachers?
   Siu Ling Wong
   Man Wai Cheng
   Benny H. W. Yung
Group: Strand: 14 Cultural Contexts for Environmental Education (group 122)
Napoleon A2
Strand Coordinator Organized Paper Set:
Presider: David Zandvliet

i. P-242-400-399-436: Science Education in Inuit and Maori Communities: Perceived Contributors and Constraints to Achieving Aspirations
   Rebecca Hainnu
   Thomas Owen
   Brian Lewthwaite

    Bryan S. Wee

iii. P-642-1305-1304-1336: Indigenous Science Education in Africa
    George E. Glasson
    Absalom Phiri
    Ndalapa Mhango

Research Committee-Sponsored Symposium: Research Agenda in Science Education (RAISE) (group 178)
Grand Couteau
Research Committee-Sponsored Symposium:
Presider: Patricia Simmons

i. S-2001-503-501-77: Research Committee-Sponsored Symposium: Research Agenda in Science Education (RAISE)
   Patricia Simmons
   Vince Lunetta
   John Penick

2 – 2:30 pm
Break

2:30 – 4 pm
Concurrent Sessions

Group: Strand: 1 Conceptual Change I (group 29)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Barry Fraser

i. P-365-1461-1460-1492: Conceptual Resources in Self-Developed Explanatory Models
   Meng-Fei Cheng
   David E. Brown
   Jing-Wen Lin
   Mei-Hung Chiu

iii. P-225-1111-1110-1144: Intentional Conceptual Change in Question: Do Secondary School Science Students Know When They Don’t Know?
    Patrice Potvin
    Martin Riopel
    Steve Masson
    FrÈdÈric Fournier

iv. P-182-296-295-332: A Comparison of Three Instructional Interventions Designed to Promote Conceptual Change
    Kathy C. Trundle
    Randy L. Bell

Group: Strand: 2 Student Reasoning and Discourse in the Science Classroom (group 95)
Bayside B
Strand Coordinator Organized Paper Set:

i. P-404-711-710-745: Perceptions of Argumentative Discourse Among Freshmen College Students, Science Teachers, and Practicing Scientists
   Issam H. Abi-El-Mona
   Fouad S. Abd-El-Khalick

    Elizabeth W. Edmondson
    William H. Leonard

iii. P-313-537-536-573: Modes of Discourse in Science Classrooms: The Failure of Static Models in Capturing Complex Classroom Dynamics
    Nader A. Wahbeh
    Fouad S. Abd-El-Khalick

iv. P-693-1394-1393-1425: Effects of Promoting Argumentation on Students’ Reasoning in Physics
    Handan Eskin
    Feral Ogan-Bekiroglu
Group: Strand: 2 Teacher and Student Partnerships (group 92)
Napoleon B3
Strand Coordinator Organized Paper Set:

   Troy D. Sadler

ii. P-302-1294-1293-1325: Defining Authenticity Within a Student-Teacher-Scientist Partnership
    Erin L. Dolan
    Christine Luketic
    Julia Grady
    Amy Germuth

iii. P-327-565-564-601: Dialogic Teaching in Science Classrooms
    Philip Scott
    Jaume Ametller
    Judith Kleine Staarman
    Neil Mercer

iv. P-220-390-389-426: Investigating Teachers’ and Students’ Conceptions of Good Science Teaching Through a Video-Based Survey Instrument
    Benny H. W. Yung
    Fei Yin Lo
    Siu Ling Wong
    Man Wai Cheng
    Derek Hodson

Group: Strand: 4 High School Physics in the US and Germany (group 61)
Napoleon B2
Strand Coordinator Organized Paper Set:
Presider: Irene Osisioma

i. P-49-1026-1025-1059: Patterns of Acting - A Reconstruction of Two Case Study Examples
   Torsten M. Fischer
   Peter J. Reinhold

ii. P-140-453-452-489: Physics in Context - A Professional Development Project for Improving Physics Instruction in Germany
   Reinders H. Duit
   Silke Mikelskis-Seifert
   Tussatrin Kruatong
   Alister Jones
   Sunan Sung-ong
   Penchantr Singh

iv. P-212-432-431-468: The Role of High School Laboratories in Student Performance in Introductory College Science
   Adam V. Maltese
   Robert H. Tai

Napoleon A1
Symposium:
   James Kisiel
   Leslie D. Edwards
   Angela Calabrese Barton
   Nancy Brickhouse

Group: Strand: 7 Inquiry Teaching and Learning (group 116)
Borgne

Strand Coordinator Organized Paper Set:
Presider: Meg Blanchard

i. P-172-918-917-951: The Development of the Analysis of Inquiry Rubric Based on Observations of Practicing Teachers and Its Implications for Science Teacher Preparation
   April D. Adams
   Monica J. Macklin
   Renee Cambiano
   James Oliver
   Skyleen Willingham
   Vicky Hurst
   Melissa Underwood

ii. P-340-1546-1545-1576: Novice ACP Science Teachers’ Levels of Success With Inquiry: A Multi-Case Study of the Effects of Professional Development
   Cathleen C. Loving
   Rui Kang
   Abdurrahman Arslanyilmaz
   Christine Shimek
   Bruce Herbert
   Susan Pedersen
iii. P-58-382-381-418: Inquiry and Field-Based Learning and Instruction for Pre-Service Teachers  
   Gwen C. Nugent  
   Gina M. Kunz

   Ozgul Yilmaz-Tuzun  
   Sinan Ozgelen

Group: Strand: 8 Inquiry & Professional Development at the Elementary Level (group 20)  
Oak Alley  
Strand Coordinator Organized Paper Set:  
Presider: Michael Kamen

i. P-147-1054-1053-1087: A Longitudinal Study Teachers’ Enactment of Instructional Materials: How Professional Development, Institutional Context, and Identity Interact to Shape the Enacted Curriculum  
   Jennifer L. Cartier

ii. P-283-470-469-506: Measuring Elementary Teachers’ Readiness to Adopt Inquiry-Based Science Pedagogy  
   Minsuk K. Shim  
   Betty J. Young  
   Kathleen Guglielmi  
   Paul Bueno de Mesquita

iii. P-586-1114-1113-1147: Are Inservice Elementary Teachers Prepared to Teach Fundamental Concepts of Magnets and the Behavior of Magnets?  
   Ronald K. Atwood  
   John E. Christopher  
   Rebecca McNall

   Karaen E. Levitt  
   Barabara M. Manner  
   Adria Scott
Group: Strand: 10 Identifying the Big Ideas in Nanoscience (group 181)
Grand Chenier
Symposium:
Presider: Joseph S. Krajcik
P-150-1255-1254-1286: Identifying the Big Ideas in Nanoscience
   Molly L. Yunker
   Joseph S. Krajcik
   Tina M. Stanford
   Shawn Y. Stevens
   Discussant: George DeBoer

Group: Strand: 11 Supporting Teachers in Fostering Youth Agency and Learning in Low Income Urban Communities (group 78)
Bayside A
Symposium:
Presider: Maria S. Rivera Maulucci
S-553-1582-1581-1611: Supporting Teachers in Fostering Youth Agency and Learning in Low Income Urban Communities
   Edna Tan
   Sreyashi Jhumki Basu
   Tara O’Neill
   Maria S. Rivera Maulucci
   Sumi Hagiwara
   Verneda Johnson

Group: Strand: 11 Environmental Interest and Literacy Indicators (group 179)
Edgewood A/B
Strand Coordinator Organized Paper Sets:
Presider: Cory Buxton
i.   P-430-1042-1041-1075: Relationship Between Environmental Literacy and Background Characteristics of Beginner Teacher-Training Students - Implications for Training Programs
   Daphne Goldman
   Bella Yavetz
   Sara Pe’er

   Dan N. Churach
   Tony W. J. Rickards
Group: Strand: 13 Epistemological Beliefs and Science Learning (group 137)
Napoleon A3
Strand Coordinator Organized Paper Set:
Presider: Rachel Mamlok-Naaman

i. P-379-675-674-709: Information Commitments, Scientific Epistemological Views and Internet-Based Science Learning
   Chia-Ching Lin
   Chin-Chung Tsai

ii. P-565-1066-1065-1099: Exploring Relations Between Scientific Epistemological Beliefs and Decision Making on a Socioscientific Issue
    Shiang-Yao Liu

iii. P-753-1609-1608-1638: Reflective Judgment & Nature of Science: Commonalities Explored
     Sharon Dotger

    Donna L. Farland
    William F. McComas

Group: Presidential-sponsored Symposium: A Critical Look at Science Education as a Field of Research (group 154)
Grand Couteau
Presidential Sponsored Symposium:
Jonathan Osborne, NARST President, is the Presider: of this symposium.

i. A Critical Look at Science Education as a Field of Research
   Ron Good, Moderator, Discussant
   Larry Yore
   Anton Lawson
   Michael Vitale
   Nancy Romance
   James Shymansky

4:15 – 5:45 pm
Concurrent Sessions
Group: Strand: 1 Conceptual Change III (group 35)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Kathy Cabe Trundle

i. P-316-1342-1341-1373: Middle School Students’ Development of the Particle Model of Matter
   Joi Merritt
   Yael Shwartz
   Joseph Krajcik

ii. P-403-1311-1310-1342: Supporting Middle School Students’ Development of an Accurate and Applicable Energy Concept
   Jeffrey Nordine
   David Fortus
   Joseph Krajcik

iii. P-548-1020-1019-1053: A Comparison of Experts, Intermediates, Novices, and Naives in Modeling
    Ying-Shao Hsu
    Li-Fen Lin
    I-Chung Ke
    Hsin-Kai Wu
    Fu-Kwun Hwang

iv. P-166-618-617-654: Impact of Reading and Developmental Factors on Children’s Questioning Representation
   Peilan Chen
   Yuhtsuen Tzeng
   Wolff-Michael Roth

Group: Strand: 2 Science Learning In and Out of the Classroom (group 93)
Napoleon B3
Strand Coordinator Organized Paper Set:

i. P-179-1410-1409-1441: Elementary Students’ Retention of Environmental Science Knowledge: Connected Science Instruction Versus Direct Instruction
   Bhaskar Upadhyay
   Cristina DeFranco

ii. P-524-1017-1016-1050: Artifacts and Distributed Cognition: Towards a New Perspective on Science Learning
   Li Hua Xu
   David Clarke
iii. P-606-1399-1398-1430: Social Barriers to Engaging in Meaningful Learning in Biology Field Trip Group Work  
   David Anderson  
   Gregory P. Thomas  
   Samson M. Nashon

iv. P-694-1405-1404-1436: Enhancing Students’ Competencies on Scientific Inquiry in Chemistry  
   Stefan Rumann  
   Elke Sumfleth

Group: Strand: 4 Chemistry: Mole, Equilibrium, and PD (group 62)
Napoleon B2
Strand Coordinator Organized Paper Set:  
Presider: Julie A Thomas

i. P-731-1538-1537-1568: Teaching And Learning About The Nature Of Equilibrium: A Case Study From Thai 11-Grade Classroom  
   Yaowares Chaiyen  
   Naruemon Yutakom  
   Pensri Bunsawansong

ii. P-232-999-998-1032: Influence of Chemistry Professional Development Program on Chemistry Content Knowledge  
   Claudia M. Khourey-Bowers  
   Christopher Fenk

iii. P-249-1188-1187-1220: Building the Science Storyline Using the Mole Concept  
   Scott P. McDonald  
   Gregory J. Kelly

iv. P-127-489-488-525: Enhancing Grade 10 Thai Students’ Understanding and Solving Numerical Problems in Stoichiometry Using a Conceptual Change Approach  
   Chanyah Dahsah  
   Richard K Coll  
   Bronwen Cowie  
   Sunan Sung-Ong  
   Naruemon Yutakom  
   Sudjit Sanguanruang

Group: Strand: 5 Development and Impact of Nature of Science Beliefs (group 103)
Nottoway
Strand Coordinator Organized Paper Set:  
Presider: Saouma BouJaoude
i. P-483-1041-1040-1074: Domain-General and Domain-Specific Science Epistemological Beliefs of Science Students of Biology, Chemistry, and Physics Majors
   Meichun L. Wen
   Yi-Wen Lin

ii. P-243-402-401-438: College Studentsí Perceptions of the Theory of Evolution
    Saouma B. BouJaoude
    Hayat Hokayyem

iii. P-281-465-464-501: College Students and Scientific Knowledge Production: Relationships to Expertise and Capacities to Enact Epistemological Questioning Practices
     Chantal Pouliot

iv. P-620-1187-1186-1219: Beyond Evolution: A Thematic Approach to Teaching NOS Within Other Biology Contexts
    Renee’ S. Schwartz

**Group: Strand: 7 New Approaches and Challenges to Science Teacher Education (group 117)**
**Borgne**

**Strand Coordinator Organized Paper Set:**
**Presider: Jennifer Cartier**

i. P-688-1387-1386-1418: WebPlans: A Web-Based Approach to Technology Integration in Science Teacher Education
   Steven F. Tuckey
   Brett W. Merritt
   Dipendra Subedi

ii. P-557-1047-1046-1080: Using Transformative Action Research as a Tool For Learning to Teach Science in Urban Schools
    Melina Furman
    Angela Calabrese Barton

    Colette Murphy
    Jim Beggs
    Karen Carlisle

iv. P-236-1419-1418-1450: Reform in Pre-service Elementary Education: An Examination of a University-Community College Partnership
    Mary Whitfield
    Bruce Palmquist
    Robert Filson
    Leslie Heizer-Newquist
Group: Strand: 8 Modern Ideas for Enhancing Professional Development and Scientific Literacy (group 22)
Oak Alley
Strand Coordinator Organized Paper Set:

i. P-355-657-656-691: Developing Grade 5 Students’ Literacy in Science: A Teacher-Researcher Collaboration
Beata Biernacka
Jazlin Ebenezer

Rosemary S. Evans

iii. P-454-1472-1471-1502: What Questions Do Teachers Ask When Seeking Help With Their Teaching?
Brian W. Adrian
Dean Zollman
Scott Stevens

iv. P-99-1166-1165-1198: Teachers’ Voice in School-Based Initiatives in Austrian Schools
Doris Elster

Group: Strand: 10 Considering the Role of Fidelity of Implementation (FOI) in Science Education Research: Analyzing the Relationship Between FOI and Student Outcomes in a Quasi-experiment (group 17)
Grand Chenier
Symposium:
Presider: Carol L. O’Donnell
S-566-1067-1066-1100: Considering the Role of Fidelity of Implementation (FOI) in Science Education Research: Analyzing the Relationship between FOI and Student Outcomes in a Quasi-Experiment
Carol L. O’Donnell
Sharon Lynch
Joelle Lastica
Suzanne Merchlinsky

Group: Strand: 11 Underrepresented Students’ Ideas on Science and Mathematics (group 186)
Edgewood A/B
Strand Coordinator Organized Paper Sets:
Presider: Cory Buxton
i. P-350-1084-1083-1117: Improving Underrepresented Students’ Affective Response to Science Through a Hands-On Outreach Program
Marie-Claire Shanahan
Erminia Pedretti
Lindsay Baker
Isha De Coito

ii. P-284-480-479-516: Gender Differences in Lunar-Related Science and Mathematics Domains
Jennifer A Wilhelm
Sonya E Sherrod

Group: Strand: 11 Equity Issues with the Science Pipeline (group 72)
Bayside A
Strand Coordinator Organized Paper Set:
Presider: Heidi Carlone

i. P-276-457-456-493: Gender Equity in Undergraduate Science: A Women’s Program and Strategies for Transformation
Ajda Kahveci

ii. P-672-1349-1348-1380: A Longitudinal Study of Students’ Attitudes Towards Science and Choice of Career
Britt M. Lindahl

Laurie S. Cook
Susan M. Hoban
Maureen M. McMahon

iv. P-138-1201-1200-1233: Research Laboratory Experiences of Undergraduates in Science: The Mentor-Student Relationship for Underrepresented Minorities
Allison Kang

Group: Strand: 13 Effects of Launching of Sputnik on Science Education in the United States (group 140)
Napoleon A3
Related Paper Set:
Presider: Richard Duschl

P-464-890-889-923: Effects of the Launching of Sputnik on Science Education in the United States: Preparing for the Golden Anniversary of Sputnik I Launch
Catherine F. Wissehr
Jim P. Concannon
Lloyd H. Barrow
Research Committee-sponsored Symposium: The Gold Standard of Science Education Research: Does One Size Fit All Problems? (group 150)
Grand Couteau

Research Committee-Sponsored Symposium:
Pamela Fraser-Abder, Chair of the Research Committee, presides for this symposium.

i. S-773-1667-1664-1694: Research Committee-sponsored Symposium: The Gold Standard of Science Education Research: Does One Size Fit All Problems?
   Larry D. Yore
   Hsiao-Ching She
   Richard K. Coll
   Brian Hand
   Mack Shelley
   Donna Alvermann
   Nancy Brickhouse
   Jonathan Osborne
   Randy Yerrick, Discussant

6 – 7 pm

Membership & Elections Committee-sponsored: Graduate Student and Junior Faculty Early Career Discussion (group 160)
Nottoway

Membership and Elections Committee-Sponsored (Social):
Allan Blakely, member of the Membership & Elections Committee, is the Presider

i. S-786-1697-1694-1724: Graduate Student and Junior Faculty Early Career Discussion
   Allan Harrison
   Grady Venville
   Fouad Abd-El-Khalick
   Alan Blakely

Equity Dinner
Meet in the Lobby - at 7:00 pm.
Dinner from 7:30 – 9 pm

The 2007 Equity Dinner will be at Ralph & Kacoos, located at 519 Toulouse St. just 1/2 block from Jackson Brewery and walking distance from the conference hotel. Just go out the door and head up (northeast) on Decatur Street about 5 blocks. Meet in the lobby at 7:00 and our reservation is for 7:30. We must have a count for the restaurant, so please sign up on the Equity Dinner poster near the registration desk.

JRST Board Meeting and Dinner
6 - 8 pm – Grand Couteau
Sponsored by John Wiley and Sons
Tuesday, April 17th

7:00 – 8:15 am
Committee Meetings

Program Committee Meeting
Oak Alley

Equity and Ethics Committee Meeting
Maurepas

External Policy and Relations Committee Meeting
Napoleon B1

International Committee Meeting
Bayside A

Membership and Elections Committee Meeting
Borgne

Publications Advisory Committee Meeting
Napoleon B3

Research Committee Meeting
Grand Chenier

Ad hoc on the History of Science Education Committee Meeting
Napoleon B2

NARST Outstanding Paper Award Selection Committee
Napoleon A1

JRST Award Selection Committee
Napoleon A3

Early Career Research Award Selection Committee
Napoleon A3

Outstanding Doctoral Research Award Selection Committee
Bayside B

Distinguished Contributions through Research Award Selection Committee
Bayside C
8:30 – 10 am

Concurrent Sessions

**Group: Strand: 1 Science Understanding II (group 31)**
**Napoleon B1**  
*Strand Coordinator Organized Paper Set:*
*Presider: Ingrid Novodvorsky*

i. **P-406-1218-1217-1250: Effect of Explicit Instruction on High School Physics Students’ Knowledge and Skills for Constructing and Interpreting Graphs**  
Frackson Mumba  
Shawn Hennon  
Sebastian Szyjka  
Natalie Pereles  
William Hunter

ii. **P-245-405-404-441: Evaluating A Design-Based Learning Curriculum in Terms of Students’ Science Reasoning Gains**  
Eli M. Silk  
Christian D. Schunn  
Mari Strand Cary

iii. **P-14-870-869-904: Categorization of Physics Problems by Modeling and Non-Modeling High School Physics Students and Its Correlation with Problem-Solving Performance**  
Kathy L. Malone

**Group: Strand: 2 Effective Standards-based Instructional Environments and Narrowing of Achievement Gaps in Science: What the Research Tells Us and Where to Go from Here? (group 86)**
**Napoleon B3**  
*Symposium:*
*Presider: John Craven*

i. **S-164-1161-1160-1193: Effective Standards-Based Instructional Environments and Narrowing of Achievement Gaps in Science: What the Research Tells Us and Where to Go From Here?**  
Carla C. Johnson  
Jane B. Kahle  
Charlene M. Czerniak  
Terry McCollum
**Group: Strand: 3 Teacher Development (group 43)**

**Bayside B**

*Strand Coordinator Organized Paper Set:*

*Presider: Meredith Park Rogers*

1. P-501-1437-1436-1468: Influence of Personal Definitions of Science on Science Teaching Self-Efficacy and Classroom Practice
   Deborah L. Hanson

2. P-177-1051-1050-1084: The Influence of Peer Discussion on Preservice Elementary Teachers
   Joseph P. Riley
   Malcolm B. Butler
   Toh Kok Aun
   Yap Kueh Chin
   Ho Boon Tiong
   Boo Hong Kwen

3. P-621-1194-1193-1226: Microcontexts and Practical Epistemology: Problematizing the Constructs of Lesson Enactment and Teacher Knowledge
   Eric M. Eslinger
   Kathleen E. Metz

   Carolyn M. Schroeder
   Timothy P. Scott
   Homer Tolson
   Tse-Yang Huang
   Yi-Hsuan Lee

**Group: Strand: 4 Science Careers: Scientists and Science Teachers (group 63)**

**Napoleon B2**

*Strand Coordinator Organized Paper Set:*

*Presider: Karen Sullenger*

1. P-290-519-518-555: Increasing High School Student Understanding of the Role of Science and Mathematics for Pursuing Career Goals
   Lawrence Flick
   Leonard Cerny
   Spencer Hinkle
   Tim Collins

   Pei-Ling Hsu
   Wolff-Michael Roth
iii. P-154-504-503-540: Coordinating Science Learning: Navigating Tensions Between Scientists and Science Educators
   Amy R. Taylor
   Melissa G. Jones
   Bethany Broadwell
   Tom Oppewal

**Group: Strand: 5 Graduate Students as Teachers (group 105)**

**Nottoway**

*Strand Coordinator Organized Paper Set:*

*Presider: Peter Garik*

i. P-627-1214-1213-1246: Development of Knowledge for Teaching: The Matter and Interaction (M&I) as a Novel Physics Curriculum
   Eulsun Seung
   Lynn A. Bryan
   Mark P. Haugan

ii. P-504-1343-1342-1374: Change in the Practices of Scientists as They Work in Public School Classrooms
   Meta L. Van Sickle
   Carol Tempel
   George Tempel

iii. P-122-866-865-900: Development of STEM Graduate Students’ Teaching Skills Through Secondary Teaching Partnerships
   Nancy M. Trautmann
   James G. MaKinster

   Sherri L. Brown
   Christy Rich
Group: Strand: 7 Teacher Professional Continuum Research: Cross-Project Comparisons of Practical, Theoretical and Methodological Considerations in Conducting Large-Scale Teacher Education Research Studies (group 111)

Borgne

Symposium:

Presider: Kimberly Fluet

i.

S-479-1510-1509-1540: Teacher Professional Continuum Research: Cross-Project Comparisons of Practical, Theoretical and Methodological Considerations in Conducting Large-Scale Teacher Education Research Studies
John W. Tillotson
Monica J. Young
Robert E. Yager
John E. Penick
Julie Luft
Danielle Ford

Group: Strand: 8 Secondary Level Science Teaching Issues (group 24)

Edgewood A/B

Strand Coordinator Organized Paper Set:

Presider: Nam-Hwa Kang

i.

P-551-1028-1027-1061: Supported Collaborative Inquiry and Teacher Learning
Tamara Holmlund Nelson
David Slavit
Wendi Laurence
Angie Foster
Anne Kennedy

ii.

P-666-1364-1363-1395: A Tale of Two City Schools: Supporting Project-Based Inquiry in Secondary Science Education
Regina E. Toolin
Sandra Flank

iii.

P-444-793-792-827: Evaluating the Effectiveness of a Learning-Process Oriented Training of Physics Teachers
Rainer Wackermann
Hans E. Fischer
Georg Trendel

iv.

P-572-1086-1085-1119: Preparing In-Service Secondary Science Teachers in Research: Does Time of Offering Add Value?
Kabba E. Colley
Group: Strand: 8 Effective Models of Professional Development (group 23)
Oak Alley
Strand Coordinator Organized Paper Set:
Presider: Reizelie Barreto

   Kusalin Musikul
   Sandra K. Abell

ii. P-68-886-885-919: The Effects of Professional Development on Science Teaching Practices
   Todd Sherron
   Carol Fletcher
   Jim Barufaldi

iii. P-664-1519-1518-1549: The Effective Research-Based Characteristics of Professional Development of the National Science Foundation’s 1999 GK-12 Program
   Peter C. Cormas
   James P. Barufaldi
   Kevin Fleming
   Jessica Mezei

iv. P-41-84-83-120: Collaborative Inquiry Into Effective Models for Science Teacher Professional Development
   Eric A. Olson
   Mickey Grosnick
   Gary Tarolli
   Suzanne DeTore
   Diane Emord
   Kate Foley
Group: Strand: 10 Assessment Linked to Science Learning Goals: Probing Student Thinking Through Assessment (group 16)
Bayside C
Symposium:
Presider: George E. DeBoer

i. S-91-263-262-299: Assessment Linked to Science Learning Goals: Probing Student Thinking Through Assessment
George E. DeBoer
Cari Herrmann Abell
Arhonda Gogos
Thomas Regan
Paula N. Wilson
Sean Smith

Group: Strand: 11 Explorations in the Cultural Foundations of Children’s Images of Science (group 73)
Bayside A
Related Paper Set:
Presider: Maisy McGaughey

i. P-536-1479-1478-1509: Paper #1 Explorations in the Cultural Foundations of Children’s Images of Science: Understanding the Nature of Science is Not Enough
Philip Bell
Maisy McGaughey
Carrie Tzou
Heather Zimmerman

ii. P-536-1480-1479-1510: Paper #2 Fifth Grade Students’ Images of Science, Identity and Cultural Border Crossings
Maisy McGaughey
Philip Bell

Heather Zimmerman
Philip Bell

iv. P-536-1486-1485-1516: Paper #4 Bringing Students’ Activity Structures Into the Classroom: Curriculum Design Implications From an Ethnographic Study of Fifth Graders Images of Science
Carrie Tzou
Heather Zimmerman
Philip Bell
Group: Strand: 12 Teaching, Learning, and Educational Technology in Science Education (group 39)

Maurepas

Strand Coordinator Organized Paper Set:

i. P-662-1292-1291-1323: TEEMSS2: Technology Enhanced Elementary and Middle School Science
Andrew Zucker
Shari J. Metcalf
Carolyn Staudt
Robert Tinker

ii. P-456-822-821-856: The Development of Science Activities via Online Peer Assessment: The Role of Scientific Epistemological Views
Jyh-Chong Liang
Chin-Chung Tsai
Chun-Yen Chang

Group: Strand: 13 Teachers’ Conceptions of the Nature of Science (group 134)

Napoleon A3

Strand Coordinator Organized Paper Set:

Presider: April Adams

i. P-500-1248-1247-1279: Explicit/Reflective Approach to Enhance Pre-Service Science Teachers’ Understanding of the Nature of Science Concepts
Behiye Bezir Akcay
Hakan Akcay

ii. P-562-1070-1069-1103: A Study on Prospective Teachers’ Beliefs About the Nature of Science and Self-Efficacy
Bilge Can
Esin Perkmez

Orvil L. White
Valarie L. Akerson
Huseyin Colak
Khemmedwadee Pongsanon
Group: Strand: 14 Conceptualizing the Environment (group 121)
Napoleon A2
Strand Coordinator Organized Paper Set:
Presider: David Zandvliet

i. P-266-821-820-855: Facilitating Content Knowledge Through In-Depth Examination of Environmental Issues
James T. McDonald
Lynn A. Dominguez

ii. P-307-522-521-558: The Role of Groundwater in Students’ Understandings of Our Environment
Daniel L. Dickerson
Amy Adcock
Karen Dawkins

iii. P-529-970-969-1003: Students’ Understanding of Connections Between Human Engineered and Natural Environmental Systems: Similarities and Differences Across Grade Level and Context
Blakely K. Tsurusaki
Charles W. Anderson

iv. P-47-95-94-131: Mountains and Rain and Sheds and Towers: Students’ Conceptions of Watersheds
Daniel P. Shepardson
Bryan Wee
Michelle Priddy
Leon Walls
Jon Harbor

Group: Research Committee-sponsored Symposium: Semantica Pro Software: A Potential Tool for Educational Researchers (group 155)
Grand Couteau
Research Committee-Sponsored Symposium:
Pamela Fraser-Abder, Chair of the Research Committee, presides for this symposium
P-777-1676-1673-1703: Semantica Pro Software: A Potential Tool for Educational Researchers
Kathleen Fisher
Michelle Nolasco

10 – 10:30 am
Break

10:30 – 12 noon
Concurrent Sessions
Group: Strand: 1 Science Learning II (group 32)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Bruce Waldrip

   Ying-Tien Wu
   Chin-Chung Tsai
   Chun-Yen Chang

ii. P-442-1008-1007-1041: Using Scientific Models to Learn About Shadows
    Ayelet Weizman
    David Fortus

iii. P-561-1062-1061-1095: Student Inquiry Learning Through Environmental Health Science Curriculum: Preliminary Findings
     Nam-Hwa Kang
     Grant Smith
     Molly Bloomfield

iv. P-730-1532-1531-1562: Students’ Understanding of Scientific Models in Different Contexts: The Impact of Teaching on the Nature of Models
    Man Wai Cheng
    Siu Ling Wong
    Benny Hin Wai Yung

Group: Strand: 2 Science Across the Curriculum (group 94)
Napoleon B3
Strand Coordinator Organized Paper Set:
Presider: Leah Bricker

i. P-486-897-896-930: Creating Illustrated Information Books in Science: Insights from Primary-Grade Children
   Christine C. Pappas
   Maria Varelas
   Tamara Ciesla
   Neveen Keblawe-Shamah

ii. P-363-629-628-665: Qualitative Analysis of Interviews With Primary Level Students Working With M(odeling)-Open Biological and Mathematical Problems
    Sabine Mogge
    Helmut Vogt
    Bernd Wollring
iii. P-397-698-697-732: One Teacher’s Voice as She Enacts Project-Based Instruction With Middle School Students for the First Time
Cathy M. Box
Jennifer A. Wilhelm

iv. P-261-436-435-472: Integrating Science Content, Language Arts, and Social Studies in a Special Relativity Unit for Grade 11 Students
Kathie M. Black
Tanya M. Taft

Group: Strand: 4 Multiple Beliefs (group 64)
Napoleon B2
Strand Coordinator Organized Paper Set:
Presider: Cherie A. McCollough

i. P-441-1143-1142-1175: Beliefs, Decisions and Adaptations: A Test Case Study of a Teacher’s Participation With Investigations
Kirsten K. Mawyer
Daniel C. Edelson

ii. P-661-1524-1523-1554: Observing Teacher Agency in a Science Classroom in India
Ajay Sharma

iii. P-405-712-711-746: Teachers’ Pedagogical Beliefs About Socioscientific Issues in Israel
Dana L. Zeidler
Ariel Cohen

Uri Zoller
Azaiza Ibtisam
Miri Barak
David Ben-Chaim

Group: Strand: 5 Theoretical Frameworks for Research in Science Education (group 110)
Nottoway
Symposium:

i. S-698-1420-1419-1451: Theoretical Frameworks for Research in Science Education
George M. Bodner
Robert Ferguson
MaryKay Orgill
William J. F. Hunter
Provi Mayo
Group: Strand: 6 Beyond “Underrepresented:” Looking at Gender and Access in Informal Science (group 51)
Napoleon A1
Strand Coordinator Organized Paper Set:
Presider: Suzanne Reeve

i. P-84-386-385-422: Sisters in Science in the Community
   Penny L. Hammrich
   Michelle E. Myers
   Kathy Fadigan
   Sonia M. Rodrigues
   Michelle Ariano
   Beata Breg

ii. P-460-877-876-911: Keeping the Faucet On: Summer Science Experiences and Summer Learning Loss
    Jeffrey J. Rozelle
    Anne Haley MacKenzie

iii. P-603-1448-1447-1479: The Role of Gender in Environmental Education in the Schoolyard
    Sarah J. Carrier

    Ayelet Baram-Tsabari
    Anat Yarden

Group: Strand: 7 Enhancing the Science Content Knowledge for Preservice Elementary Teachers (group 118)
Borgne
Strand Coordinator Organized Paper Set:

i. P-388-684-683-718: One-to-One Clinical Field Experience: Enhancing Science Confidence and Content Knowledge in Elementary Pre-Service Teachers
   Julie A. Thomas
   Ratna Narayan

ii. P-747-1595-1594-1624: Lesson Study and Its Relationship to Science Content
    Constance Doyle

iii. P-671-1597-1596-1626: Earth Science Conceptual Understanding of Preservice Teachers: Relationships With Content Exam Success and Spatial Abilities
    Alice (Jill) A. Black
Group: Strand: 8 Pedagogical Contexts, Nature of Science, and Inquiry (group 174)
Oak Alley
Strand Coordinator Organized Paper Set:
Presider: Kate Popejoy

i. P-347-1409-1408-1440: Impact of Pedagogical Contexts on K-8 Teachersí Perseverance Learning Chemistry in a Professional Development Course
Andrea Gay

ii. P-301-511-510-547: In-Service Science and Classroom Teachersí Attitudes toward Inquiry-Based and Technology-Enhanced Instructional Strategies
Mine Isiksal
Elvan Alp
Hamide Ertepinar

iii. P-749-1592-1591-1621: Developing In-Service Teachers’ Scientific Ways of Knowing
Xin L. Liang
Sufian A. Forawi
John P. Hirschbuhhl

Ibrahim A. Al Momani
Suhair A. Jaradat

Group: Strand: 10 Reform of Science Teaching and Learning in Higher Education (group 15)
Bayside C
Related Paper Set:
Presider: Carolyn C. Landel

i. P-288-478-477-514: Paper #1 Building a Partnership to Advance Reform of Science Teaching and Learning in Higher Education
Carolyn C. Landel

Deborah A. Donovan
Brad K. Smith

Jacob Clark Blickenstaff
Daniel M. Hanley

Group: Strand: 11 Dynamic Membranes and Porous Boundaries: Utilizing Cogenerative Dialogues (group 74)
Bayside A
Related Paper Set:
Presider: Gillian U. Bayne

i. P-173-1395-1394-1426: Paper #1 Dynamic Membranes and Porous Boundaries: Utilizing Cogenerative Dialogues to Explore the Intricacies of Equity and Culture Within the Urban Science Laboratory
Gillian U. Bayne

Wesley Pitts

iii. P-173-1408-1407-1439: Paper #3 Cogenerative Dialogue as a Tool to Expand the Studentsí Agency
Ashraf Shady

iv. P-173-1412-1411-1443: Paper #4 Enactment of Chemistry Knowledge by a High School Student in a Summer Program
Line Augustine

Christopher Edmin

Group: Strand: 12 Use of Online Resources and Innovative Software in Learning Science (group 38)
Maurepas
Strand Coordinator Organized Paper Set:

i. P-555-1039-1038-1072: The Study of the Effects of Two Educational Softwares on Students’ Academic Achievements, Misconceptions and Attitudes Towards Biology
Yilmaz Kara

ii. P-691-1576-1575-1605: How Do Middle School Students Read Science on the Web?
Meilan Zhang
Chris Quintana
   Nicos C. Valanides
   Charoula M. Angeli

    James Minogue
    Gail Jones
    Tom Oppewal
    Bethany Broadwell

Group: Strand: 13 Historical Perspectives in Science Education (group 138)
Napoleon A3
Strand Coordinator Organized Paper Set:
Presider: Michael Smith

i. P-400-703-702-737: The NARST Academic Genealogy Project
   Mark J. Gagnon
   Sandra K. Abell

ii. P-596-1133-1132-1165: A Historical Perspective of Conceptions of Chemistry Teaching Related to Amount of Substance Concept
    Kira Padilla
    Carles Furió-Mas

iii. P-187-310-309-346: A Study in History of Science Teaching by AIH (Anchored in History) Instruction
    Tzu Shan Cheng
    Huey Por Chang

iv. P-82-144-143-180: Joseph Priestley and the Enlightenment: Teaching Chemistry and the Cultural Contribution of Science
    Michael R. Matthews

Group: Strand: 14 Research on Environmental Education Practices (group 123)
Napoleon A2
Strand Coordinator Organized Paper Set:
Presider: Julie Lambert

i. P-368-642-641-678: Mixed Method Approach to Education Research: A Case Study of Teacher Commitment to Environmental Education
   Edward M. Sosu
   Angus McWilliam
ii. P-659-1596-1595-1625: The Relationship Between Children’s Environmental Perceptions and Ecological Actions
Constantinos Manoli
Bruce Johnson

Charles J. Rop
Toni Sondergeld

Grand Couteau
Publications Advisory Committee Sponsored Session:
Barbara Crawford, Chair of the Publications Advisory Committee, presides for this session.
J. Randy McGinnis
Angelo Collins

12 – 12:45 pm
Lunch on your own

12:45 – 2:15 pm
Concurrent Sessions

Group: Strand: 1 Science Understanding III (group 33)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Meta Van Sickle

Bijaya Aryal
Dean A. Zollman
N. Sanjay Rebello

ii. P-319-954-953-987: Exploring Students’ Semantic Comprehension in the Hyponymy and the Meronymy of Science Concepts
Shih-Wen Chen
Wen-Gin Yang

iii. P-488-1508-1507-1538: How Do Engineering Students Develop and Reason With Concepts of Electricity Within a Project-Based Course?
Karen E. Bledsoe
iv. P-629-1234-1233-1265: How Does a Classroom Interaction System Affect Student Performance?
Joseph Beuckman
N. Sanjay Rebello

**Group: Strand: 2 Student Perceptions in the Science Classroom (group 91)**
**Napoleon B3**
*Strand Coordinator Organized Paper Set:*
*Presider: Anna Raphaela Lewis*

Lisa A. Donnelly
Mahsa Kazempour
Aidin Amirshokoohi

ii. P-101-177-176-213: How is Literacy Enacted in Science Classrooms? Three Case Studies in Minority Language Schools
Léonard P. Rivard
Annabel Levesque

Gayle A. Buck
Vicki L. Plano Clark
Diandra L. Leslie-Pelecky

iv. P-373-659-658-693: The Influence of Teaching With Situated Learning Rationale on 7th Graders’ Learning in Biology
Tzu-Chiang Lin
Yeong-Jing Cheng

**Group: Strand: 4 Teachers’ Beliefs (group 65)**
**Napoleon B2**
*Strand Coordinator Organized Paper Set:*
*Presider: Catherine E. Milne*

i. P-132-1226-1225-1257: Cogenerative Dialogue as an Effective Teaching Tool: A Pilot Study with At-Risk Students Teaching Science in an Urban Environment
Ed Lehner
Ed Kagen

ii. P-735-1549-1548-1579: Determining Discourses: Resources and Constraints Influencing Early Career Science Teachers
Kelly E. Grindstaff
iii. P-89-152-151-188: Changes in Teachers’ Context Beliefs About Teaching Science During a Year Long In-Service Teacher Education Program
   Gerald H. Krockover
   Loran E. Carleton

   Ingrid Novodvorsky
   Debra Tomanek
   Vicente Talanquer

**Group: Strand: 5 Conceptual Development -- Physics (group 104)**

**Nottoway**

*Strand Coordinator Organized Paper Set:*

*Presider: Megan Thomas*

i. P-295-498-497-534: Naïve Students’ Conceptual Development and Beliefs: What Contributes to Student Success in a University Introductory Physics Course?
   Hye-Eun Chu
   David F. Treagust
   A. L. Chandrasegaran

ii. P-623-1203-1202-1235: Gravity, Magnetism, and ‘Down’: College Students’ Conceptions of Gravity
   Julie C. Libarkin
   Anila Asghar

iii. P-525-959-958-992: The Effect of Discussion-Intensive and On-line Problem Solving on Freshmen Students’ Understanding of Force
   Sara J. Rose
   Fouad S. Abd-El-Khalick

iv. P-523-957-956-990: The Role of Darkness in Student Understanding About Light and Vision
   Mary Anne Wells
   Eric Eslinger
   Harry Shipman
Group: Strand: 6 Researching Language, Learning and Engagement in Informal Science Institutions (group 54)

Napoleon A1

Symposium:

   Doris Ash
   Jennifer DeWitt
   Justin Dillon
   Jill Hohenstein
   Jane Lehr

Group: Strand: 7 Pedagogical Content Knowledge (group 127)

Borgne

Strand Coordinator Organized Paper Set:
Presider: Fred Freking

i. P-151-242-241-278: The PCK of Future Science Teachers in an Alternative Certification Program
   Sandra K. Abell
   Patrick Brown
   Patricia M. Friedrichsen
   Deanna Lankford
   Enrique Pareja
   Mark J. Volkmann

ii. P-64-490-489-526: A Case Study of a Pre-Service Chemistry Teacher’s Pedagogical Content Knowledge Development: From a Methods Course to Field Experiences
   Chatree Faikhamta
   Vantipa Roadrangka
   Judy Moreland
   Richard K. Coll

iii. P-374-661-660-695: Let Me Tell You a Story: A Preservice Science Teacher’s Pedagogical Content Knowledge in a School-Based Internship Course
   Youngjin Song

   Julie Smithey
   Elizabeth A. Davis
Group: Strand: 8 Rethinking Professional Development Partnerships: Coteaching as a Means for Investigating, Changing and Renewing Praxis (group 26)
Oak Alley

Symposium:

S-106-1191-1190-1223: Rethinking Professional Development Partnerships: Coteaching as a Means for Investigating, Changing and Renewing Praxis
Sonya N. Martin
Edward Lehner
Susan Kirch
Michele Amoroso
Christopher Emdin

Group: Strand: 10 Curriculum Analysis (group 11)
Bayside C

Strand Coordinator Organized Paper Set:
Presider: Fernando Espinoza

i. P-560-1560-1559-1589: Students’ Conceptions of Sound Waves Resulting From the Enactment of a New Technology-Enhanced Inquiry-Based Curriculum on Urban Bird Communication
Meredith E. Houle
Michael Barnett

John Y. Baek
Qing Xia
Erin E. Peters
Patricia Martinez
Brenda Bannan-Ritland
Margret A. Hjalmarson

iii. P-344-596-595-632: Do Middle School Science Textbooks Present a Balanced View of the Nature of Science?
Marianne C. Phillips
Eugene L. Chiappetta

William A. Watson
Curtis Pyke
Sharon J. Lynch
Group: Strand: 11 Building Rigorous Science Education Through Students’ and Teachers’ Experiences (group 79)
Bayside A
Symposium:
Presider: Angela Calabrese Barton
S-558-1258-1257-1289: Building Rigorous Science Education Through Students and Teachers Experiences
   Bryan Brown
   Sreyashi Jhumki Basu
   Meena Balgopal
   Vicente Handa
   Joi Merritt
   Nonye Alozie

Group: Strand: 13 Role of Cultural Practices on Teachers’ Views on the Nature of Science (group 139)
Napoleon A3
Strand Coordinator Organized Paper Set:
Presider: Michael Matthews
      Julie A. Bianchini
      Emily Kang
      Gregory J. Kelly
   ii. P-256-423-422-459: Science Teachers’ Inspiration for Teaching SSI: A Gap With Reform Efforts
       Hyunju Lee
       Klaus Witz
   iii. P-18-96-95-132: The Relationship of Cultural Values, Intellectual Levels and Pre service Teachers’ Views of Nature of Science
        Valarie L. Akerson
        Cary A. Buzzelli
        Lisa A. Donnelly

Group: Strand: 14 Cognitive and Affective Outcomes of a Southwest Place-Based Approach to Teaching Introductory Geoscience (group 125)
Napoleon A2
Related Paper Set:
Presider: Julie Lambert
   i. P-540-993-992-1026: Paper #1 Cognitive and Affective Outcomes of a Southwest Place-Based Approach to Teaching Introductory Geoscience
      Steven Semken
      Carol Butler Freeman
ii. P-540-994-993-1027: Paper #2 The TRRBOE Project: A Place-Based Professional Development Program for Elementary and Middle School Teachers on the Colorado Plateau
Rebecca M. Monhardt
Jon Orris

iii. P-540-996-995-1029: Paper #3 Children’s Relationship With Nature: An Exploration Through the Drawings and Voices of Young Children
Darius Kalvaitis

iv. P-540-997-996-1030: Paper #4 How Old is the Earth: An Exploration of Geologic Time Through Place-Based Inquiry
Carol Butler Freeman
Steven Semken
Anton Lawson
Michael Oehrtman
Jamie Jensen
Christopher Schaufele

Group: Publications Advisory Committee-sponsored Symposium: Into the Fire: Current Issues of Publishing Science Education Research (group 146)
Grand Couteau
Publications Advisory Committee Sponsored Symposium:
Barbara Crawford, Chair of the Publications Advisory Committee, presides for this symposium.

i. S-768-1654-1651-1681: Into the Fire: Current Issues of Publishing Science Education Research
   Nancy Brickhouse
   Angelo Collins, J. Randy McGinnis
   Charlene Czerniak
   Norman Lederman
   Michael Kamen
   James Shymansky
   Kenneth Tobin

2:15 – 2:45 pm
Break

2:45 – 4:15 pm
Concurrent Sessions
Group: Strand: 1 Science Learning III (group 34)
Napoleon B1

Strand Coordinator Organized Paper Set:
Presider: Eva Toth

i. P-526-1422-1421-1453: Student Perception and Conceptual Development as Represented by Student Mental Models of Atomic Structure
Eun Jung Park
Arthur L. White

ii. P-166-618-617-654: Impact of Reading and Developmental Factors on Children’s Questioning Representation
Peilan Chen
Yuhtsuen Tzeng

iii. P-372-656-655-690: Inquiry-Based Science Instruction and Students’ Science Content Knowledge: A Research Synthesis
Abigail J. Levy
Daphne D Minner
Erica S Jablonski

Group: Strand: 2 Technology in the Science Classroom (group 97)
Napoleon B3

Strand Coordinator Organized Paper Set:

i. P-575-1083-1082-1116: Exploiting Available Technologies to Align Methodology and Theory in the Study of Science Classrooms Internationally
David J Clarke
Li-Hua Xu
Cameron Mitchell

ii. P-137-810-809-844: RepTools: Representational Tools to Supporting Learning About Complex Systems
Lei Liu
Cindy E. Hmelo-Silver
Surabhi Marathe

Ya-Ling Huang
Hsin-Kai Wu

iv. P-238-394-393-430: Improved Science Assessments Using Student Perceptions
Rekha B. Koul
Darrell L. Fisher
Group: Strand: 4 Analyzing the Use of Teaching Strategies in a Model Based Curriculum: Promoting Expert Reasoning and Imagery Enhancement in High School Students (group 57)
Napoleon B2
Related Paper Set:
Presider: Janice Koch
Discussant: David Brown

i. P-506-1514-1513-1544: Paper #1 Analyzing the Use of Teaching Strategies in a Model Based Curriculum: Promoting Expert Reasoning and Imagery Enhancement in High School Students
Lynn Stephens
John J. Clement

Grant Williams
John J. Clement

iii. P-506-1492-1491-1522: Paper #3 Self-Study of the Evolution of a Deferred Judgment Questioning- Discussion Mode in a Middle School Science Teacher
Norm Price

iv. P-506-1501-1500-1531: Paper #4 Multiple Time Scale Levels Of Organization For Model-Based Teaching Strategies
John J. Clement

Group: Strand: 5 Reform Curriculum Impact (group 107)
Nottoway
Strand Coordinator Organized Paper Set:
Presider: Yevgeniya V. Zastavker

i. P-115-207-206-243: Determining the Impact of Reformed Undergraduate Science Courses on Students: Implementation of a National Study
Dennis W. Sunal
Cynthia S. Sunal
Cheryl L. Mason
Dean Zollman
N. Sanjay Rebello
Glenda Ogletree

ii. P-253-1321-1320-1352: Project-Based Learning in an Undergraduate Engineering Program: Exploring Student Engagement, Interest, and Motivation in Introductory Physics, Mathematics, and Engineering
Yevgeniya V. Zastavker
Maria Ong
Lindsay Page
iii. P-492-1261-1260-1292: Students’ Reactions to Controversial Issues Embedded in a College Environmental Science Course
   Chyrisse P. Tabone
   Barbara S. Spector

iv. P-757-1300-1299-1331: Inquiry-Based Physics and Student Learning
   Bruce Patton
   Anita Roychoudhury

**Group: Strand: 7 Assessing Preservice Teachers’ Knowledge and Attitudes (group 128)**

Borgne

*Strand Coordinator Organized Paper Set:*
*Presider: Carla Zembal-Saul*

i. P-646-1555-1554-1584: How Novice Prospective Teachers Approach Lesson Planning and Assessment
   Jenine Maeyer
   Vicente Talanquer

ii. P-113-1046-1045-1079: Pre-Service Physics Teachers’ Attitudes Towards Assessment and Factors Affecting Their Attitudes
   Feral Ogan-Bekiroglu

   Susan A. Everett
   Gail R. Luera
   Charlotte A. Otto

   G. Michael Bowen
   Anthony Bartley

**Group: Strand: 8 The Communication in Science Inquiry Project (CISIP): Lessons Learned from Professional Development with Secondary Teachers (group 163)**

Oak Alley

*Related Paper Set:*

i. P-308-535-534-571: Paper #1 The Communication in Science Inquiry Project (CISIP): Lessons Learned from Professional Development with Secondary Teachers
   Dale R. Baker
   Michael Lang
   Senay Yasar
   Gokhan Ozdemir
ii. P-308-536-535-572: Paper #2 The Dynamics of Different Group Composition on Interdisciplinary Lesson Development During a Summer Workshop
Sibel Uysal
Gita Perkins
Elizabeth B. Lewis

iii. P-308-538-537-574: Paper #3 Secondary Teacher Learning Assessed by the Quality of Lesson Plans Designed to Support Communication in Science Inquiry
Senay Yasar
Sibel Uysal
Gokhan Ozdemir

Gokhan Ozdemir
Elizabeth B. Lewis
Dale R. Baker

Elizabeth B. Lewis
Senay Yasar
Sibel Uysal

**Group: Strand: 9 The Researcher and Researched in Education Technology (group 82)**

**Gallier A/B**

*Strand Coordinator Organized Paper Set:*

*Presider: Tamara Holmlund Nelson*

P-118-467-466-503: Researcher and Researched: The Phenomenology of Change From Face-to-Face to Online Instruction
Frank E. Crawley
Martha D. Fewell
William Sugar

**Group: Strand: 10 Curriculum Reform (group 9)**

**Bayside C**

*Strand Coordinator Organized Paper Set:*

*Presider: Regina Toolin*

i. P-320-1219-1218-1251: Between Ideals and Outcomes: A Local Survey of Science Teachers’ Reflections on Taiwanese Curriculum Reform
Yun-Ping Ge
Chen-Chi Lu
ii. P-469-1141-1140-1173: Validity of Educative Design Heuristics Applied to SEPUP: Scaffolding Teacher Learning
Carlos C. Ayala

Ros Roberts
Richard Gott

iv. P-636-1284-1283-1315: Learning Progression on DNA and Protein Synthesis: A Tool for Analysis and Effecting Change in Science Curricula
Leslie A. Oliver
Jennifer L. L. Iverson
Phyllis Balcerzak

Group: Strand: 11 Cultural Studies of Science Education: Exploring the Impact of Nested Contexts on Science Teaching and Learning (group 70)

Bayside A
Strand Coordinator Organized Paper Set:
Presider: Felicia Moore

i. P-80-1558-1557-1587: Exploring Community and Science: A View of Cultural Relevancy in Science Through the Photo “Eyes” of Middle Level Students
M. Jenice ‘Dee’ Goldston
Joy Jones
Sabrina Stanley

Janell N. Catlin
Felicia M. Moore

iii. P-446-1182-1181-1214: African American Girls and Science Learning: How Are They Positioned in Elementary Science Classrooms?
Rose M. Pringle
Cirecie A. West-Olatunji
Thomasenia Adams

Heidi Carlone
Sue Kimmel
Christina Tschida
Group: Strand: 13 Other Literature of Evolution/Creationism and a Serious Attempt at Its Application (group 141)
Napoleon A3
Symposium:
Presider: Leah Bricker

S-744-1594-1593-1623: The ‘Other’ Literature of Evolution/Creationism and a Serious Attempt at Its Application
David F. Jackson
Leslie S. Jones
Norman Thomson
Joy Dike
Samuel O’Dell
Raymond Freeman-Lynde

Ad hoc Committee on Science Education-sponsored Symposium: Research in Science Education: How Well Does Our Research Build Upon, and is Guided by, Existing Research? (group 147)
Grand Couteau
Ad Hoc Committee on Science Education Sponsored Symposium:
Fouad Abd-El-Khalick, Chair of the Ad hoc Committee on Science Education, presides for this symposium.

Audrey Champagne
Jane Kahle
Anton Lawson
Norman Lederman

Research-Committee Sponsored Symposium- Graduate Student Summer Schools- Adding Value to Doctoral Programs (group 185)
Grand Chenier
Committee-Sponsored Symposium:

S-2001-197-196-117: Graduate Students Summer Schools- Adding Value to Doctoral Programs
Justin Dillon
Reinders Duit
Margareta Ekborg
Bob Evans
Hans Fischer
Doris Jorde
Helene Sørensen
4:30 – 6 pm

Concurrent Sessions

**Group: Strand: 1 Conceptual Change II (group 30)**

**Napoleon B1**

*Strand Coordinator Organized Paper Set:*

*Presider: David Treagust*

i. P-410-730-729-764: Fostering Scientific Conceptual Change and Scientific Reasoning Through a Web Learning Program
   Hsiao-Ching She
   Ya-wen Liao

ii. P-521-974-973-1007: Effects of Constructivist Teaching, Prior Knowledge, Scientific Thinking in Biology, Understandings of Nature of Science on 7th Graders’ Genetics Concept Learning
   Show-Yu Lin
   Chih-Ming Tu
   Yeong-Jing Cheng
   Miao-Li Changlai

iii. P-592-1571-1570-1600: How Does Scientific Creativity Affect Conceptual Change?
    Chia-Ju Liu
    Houn-Lin Chiu

   Philip E. Patterson
   Mary M. Atwater

**Group: Strand: 2 Student Attitudes towards Science Learning (group 98)**

**Napoleon B3**

*Strand Coordinator Organized Paper Set:*

i. P-429-763-762-797: Students’ Attitudes Toward Open Inquiry Experiments in Physics
   Burkhard Priemer
   Stefan Kirchner

ii. P-468-1197-1196-1229: The Impact of Participating in Physics Olympics Competitions on Student’s Attitudes Towards Physics
   Rachel F. Moll
   Samson Nashon
   David Anderson
iii. P-128-645-644-681: Pupil Attitudes to Science and Scientists: Results from a UK and Ireland Survey in Einstein Year
Fani Stylianidou
Roni Malek
Michael Reiss

iv. P-297-502-501-538: The Scale Development on Attitude and Motivation and Examining the Relationship Between the Scales
Ayla Cetin
Zubeyde Demet Kirbulut

**Group: Strand: 5 Conceptual Development -- Chemistry (group 102)**
**Nottoway**

*Strand Coordinator Organized Paper Set:*
*Presider: Barbara Austin*

i. P-33-818-817-852: Classification of Chemical Reactions: The Effect of Expertise
Marilyne N. Stains
Vicente A. Talanquer

ii. P-436-776-775-810: Teleological Explanations in Chemistry Teaching and Learning
Vicente Talanquer

Christiana N. Omoifo
Martina M. Irogbele

**Napoleon A1**

*Strand Coordinator Organized Paper Set:*
*Presider: Bruce Johnson*

i. P-366-637-636-673: The Influence of a Museum Internship on Prospective Science Teachersí Subject Matter Knowledge and Pedagogical Strategies for Teaching Nature of Science and Science Inquiry
Valery Lynn
Barbara A. Crawford

ii. P-61-1380-1379-1411: Is This Science? A Pilot Student-Scientist Partnership Program
Nicholas Stroud
iii. P-369-647-646-683: Outcomes of Students’ Long Term Learning in a Class Visit to a Science Center
   Yael Bamberger
   Tali Tal

   Karen B. Marshall

**Group: Strand: 7 Teachers’ Beliefs and Perceptions about Science Teaching (group 129)**

**Borgne**

*Strand Coordinator Organized Paper Set:*

*Presider: Kristen Gunckel*

i. P-221-363-362-399: Capability Beliefs, Teaching Contexts and the Retention of New Danish and American Elementary Teachers of Science
   Annemarie M. Andersen
   Søren Dragsted
   Robert H. Evans
   Helene Sørensen

ii. P-77-375-374-411: An Exploration of the Science Teaching Efficacy Beliefs of Pre-Service and In-Service Elementary Teachers
   Betty J. Young
   Paul Bueno de Mesquita
   Minsuk Shim
   Kathleen Guglielmi

iii. P-386-1089-1088-1122: The Effects of Community-Based Service-Learning on Preservice Elementary Teachers’ Self-Efficacy Beliefs About Equity and Science Teaching
   Neporcha T. Cone

   Irene Osisioma
   Hedy Moscovici
Group: Strand: 8 Professional Development in an Urban Setting: University, School and Beyond (group 164)
Oak Alley
Related Paper Set:

i. P-356-843-842-877: Paper #1 Professional Development in an Urban Setting: University, School and Beyond
   Pamela Fraser-Abder

    Robert Wallace

     Jason Blonstein
     Catherine Milne

iv. P-356-849-848-883: Paper #4 Expanding Professional Development to the Community:
    Nina Leonhardt

    Pamela Fraser-Abder

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Group: Strand: 10 Curriculum Adaptation (group 10)
Bayside C
Strand Coordinator Organized Paper Set:
Presider: Douglas Huffman

i. P-589-1120-1119-1153: Revealing Tensions Between Curriculum Goals and Classroom Norms
   David J. Grueber

ii. P-362-628-627-664: Twenty First Century Science - New Wine in Old Bottles?
    Jonathan F. Osborne
    Pam Hanley
    Mary Ratcliffe

iii. P-638-1257-1256-1288: Promoting Student Scientific Literacy of Molecular Genetics and Genomics
    Jennifer Eklund
    Aaron Rogat
    Nonye Alozie
    Joseph Krajcik
iv. P-487-880-879-914: Promoting Pedagogical Design Capacity Through Teachers’ Narratives
   Elizabeth A. Davis
   Carrie Beyer
   Cory T. Forbes
   Shawn Stevens

**Group: Strand: 11 Enabling and Constraining: Aspects of Teaching Science for All (group 69)**

**Bayside A**

*Strand Coordinator Organized Paper Set:*

*Presider: Felicia Moore*

i. P-723-1539-1538-1569: Novice Teachers Changing Conceptions of Student Centered, Inquiry Based Science Education and ELL Practices as a Result of an International Science Teaching Experience
   Joel D. Donna
   Fred N. Finley

ii. P-737-1552-1551-1581: Sociocultural Awareness: A Precursor to Culturally Responsive Practices
   Tamara K. Wallace
   Brenda R. Brand

iii. P-133-800-799-834: Examining Teachersí Conceptual Hurdles to “Science For All”
    Sherry A. Southerland
    Alejandro Jose Gallard Martinez

iv. P-367-638-637-674: Speaking Towards Understanding: Learning to Be Literate Speakers and Writers of Science
   Bryan A. Brown
   Kihyun Ryoo
   Jamie Rodriguez


**Napoleon A3**

*Symposium:*

*Presider: Zoubeida Dagher*

S-94-583-582-619: Inquiry and the Learning of Science Theories and Practices
   Richard Duschl
   Nancy Brickhouse
   Fouad Abd-El-Khalick
   Philip Bell
   Daniel C. Edelson
   Richard Grandy
6 – 6:45 pm

Membership & Elections Committee-sponsored: New Researcher Orientation
(group 156)
Nottoway
Membership and Elections Committee-Sponsored (Social):
Brian Fortney and Alan Blakely, members of the Membership & Elections Committee, are
the Presiders of this session:
   New Researcher Orientation
       Allan Harrison
       Barbara Crawford
       Penny J. Gilmer
       J. Randy McGinnis

6:45 – 7:45 pm

NARST Business Meeting
Oak Alley

8 pm – 12 Midnight

FARSE 2007 (group 148)
Armstrong & Foyer
FARSE FUN:
It’s organized by FARSE Laureate Ron Good, Sherry Southerland, Norm Lederman,
and other FARSEical characters. There will be T-shirts, awards, and other prizes for
participants and fun for all! FARSE will make Bourbon St. seem boring! Join your colleagues for a change of pace
Wednesday, April 18th

7:00 – 8:15 am
Concurrent Sessions

**Group: Strand: 5 WIP session for College Science Teaching 2 (group 165)**
**Napoleon B1**
*Work-In-Progress (WIP): Expert Discussant is William Kyle*
  - P-337-952-951-985: Pedagogic Revision and a College Science Instructor: Impacting Views of Teaching and Learning
    - Uric C. Geer
    - David W. Rudge

**Group: Strand: 5 WIP session for College Science Teaching 3 (group 165)**
**Gallier A/B**
*Work-In-Progress (WIP): Expert Discussant is Kenneth Tobin*
  - P-626-1279-1278-1310: Integrated Freshman Learning Experience: Reform-Based Teaching in an Undergraduate Biology Course
  - Mahsa Kazempour
  - Aidin Amirshokoohi
  - William Harwood

**Group: Strand: 5 WIP session for College Science Teaching 1 (group 165)**
**Nottoway**
*Work-In-Progress (WIP): Expert Discussant is David Treagust*
  - P-699-1566-1565-1595: Effect of Temporal Orientation and Perception of Instrumentality on Student Academic Performance
  - Cheryl C. Berg
  - Jenefer Husman
  - Wonsik Kim

**Group: Strand: 7 Work in Progress for Pre-service Science Teacher Education (group 167)**
**Borgne**
*Work-In-Progress (WIP): Expert Discussant is Larry Yore*
    - RenaFaye S. Norby

**Group: Strand: 7 Work in Progress for Pre-service Science Teacher Education 2 (group 167)**
**Napoleon B3**
*Work-In-Progress (WIP): Expert Discussant is Meta VanSickle*
  - P-597-1136-1135-1168: Teacher Response to Learner Questions in Science Classrooms
    - Estelle Gaigher
Group: Strand: 8 Work in Progress for In-Service Science Teacher Education (group 168)
Bayside C

Work-In-Progress (WIP): Expert Discussant is Ron Good
P-712-1478-1477-1508: The Impact of a Professional Development Program Entitled NWO-TEAMS (Teachers Enhancing Achievement on Mathematics and Science) on the Content Knowledge and Teaching Skills of Elementary and Middle School Science and Math Teachers
Emilio Duran
Lena Ballone-Duran
Svetlana Beltyukova
Jake Burgoon
Christine Fox
Mandy Heddle

Group: Strand 11: Work in Progress for Cultural, Social, & Gender Issues (group 169)
Bayside A

Work-In-Progress (WIP): Expert Discussant is Angela Calabrese Barton
P-531-1327-1326-1358: The Influence of Environmental Management Internships on Native American High-School Age Student Internsí NOS Conceptions
Eric M. Riggs
Rebekka Darner
Russell Balliet

Group: Program Committee Meeting
Oak Alley

8:30 – 10 am
Plenary Session

Program Committee-sponsored Plenary Address: Toward a Brighter Future for Science Education: Cogenerating Success Through Participatory Inquiry (group 172)
Napoleon CD123 & CD Corridor

Plenary Address: Introduced and presided by NARST President-elect Penny J. Gilmer
P-785-1695-1692-1722: Program Committee-Sponsored Symposium: Toward a Brighter Future for Science Education: Cogenerating Success Through Participatory Inquiry
Kenneth Tobin

10:15 – 11:45 am
Concurrent Sessions
Group: Strand: 1 Science Understanding IV (group 36)
Napoleon B1
Strand Coordinator Organized Paper Set:
Presider: Catherine Milne

i. P-655-1585-1584-1614: The Upright Pyramid: Is There Room for the Nature of Science at the Early Childhood Level?
Sufian A. Forawi

Akiko Deguchi
Shigenori Inagaki
Etsuji Yamaguchi
Hideo Funaoi

iii. P-685-1383-1382-1414: The Causal Relationship Between Flexible Thinking and Deductive Inferencing
Michael J. Peterson

iv. P-142-231-230-267: The Effect of Embedded Metacognitive Prompts Based on the Nature of Science (4-Phase EMPNOS) on Metacognition
Erin E. Peters
John Y. Baek
Brenda Bannan-Ritland

Group: Strand: 2 Inquiry Learning in the Science Classroom (group 96)
Napoleon B3
Strand Coordinator Organized Paper Set:
Presider: Alan Oliveira

i. P-740-1578-1577-1607: Exploring the Role of Inquiry and Reflection in Shared Sense-Making in an Inquiry-Based Science Classroom
Barbara G. Ladewski
Joseph S. Krajcik
Annemarie S. Palincsar

ii. P-263-447-446-483: Student Engagement in Authentic Scientific Inquiry: The Curriculum Intent and the Classroom Reality
Anne C. Hume
Richard K. Coll

iii. P-582-1102-1101-1135: Environments for Learning: Engaging Teachers and Students in Inquiry Curriculum
Rebecca M. Schneider
Barbara Hug
iv. P-511-925-924-958: Listening to Their Voices: What are They Telling Us About Their Experience in Learning Using Inquiry?
   Michelle Koomen

**Group: Strand: 2 Metacognition, Epistemology & Interest in Science (group 171)**

**Edgewood A/B**

*Strand Coordinator Organized Paper Set:*

*Presider: Catherine Koehler*

i. P-426-761-760-795: What Do College Students Mean When They Say They Are Interested or Not Interested in Science?
   Li-hsuan Yang

ii. P-667-1500-1499-1530: Practicing Epistemology in Science in an Elementary Classroom
   Julie M. Kittleson

iii. P-286-608-607-644: Awareness and Control as Metacognitive Dimensions of Group Learning Behavior
    Wendy S. Nielsen
    Samson Nashon
    David Anderson

iv. P-174-284-283-320: Validation of Junior Metacognitive Awareness Inventory (Jr. MAI) and Investigation of the Effect of Achievement on Metacognitive Skills of Elementary School Students
   Ozgul Yilmaz-Tuzun
   Mustafa Sami Topcu

**Group: Strand: 3 Science Teaching (group 44)**

**Bayside B**

*Strand Coordinator Organized Paper Set:*

*Presider: Meg Blanchard*

i. P-424-752-751-786: The Study of the Mechanism of Primary Science Teachers Teaching Decisions in Taiwan: A Grounded Perspective of GEAR Model
   Sung-Tao Lee
   Huann-Shyang Lin
   Jeng-Fung Hung

   Elisabeth E. Schussler
iii. P-226-553-552-589: Teachers’ Struggles With Embedding Argument Within Science Inquiry and the Promotion of Student Control and Student Voice in Setting the Question for Exploration
   Andy Cavagnetto
   Brian Hand
   Lori Norton-Meier

iv. P-126-951-950-984: Elementary Teachers’ Understanding of Students’ Prior Knowledge: Implications for Practice and Teacher Education
   Susan Gomez-Zwiep

**Group: Strand: 4 Middle School Science & Math (group 66)**

**Napoleon B2**

*Strand Coordinator Organized Paper Set:*

*Presider: Enrique Manuel Pareja*

i. P-227-1627-1624-1654: Preliminary Results of a Middle School Correlated Science/Math Pilot Project
   Sandra West

ii. P-272-484-483-520: An Exploration of Science Teachers’ Misconceptions of Science Concepts
   Ryan T. Sikkes
   Kathie M. Black

iii. P-125-201-200-237: The Efficacy of ‘Powers of Ten’: Concepts of Size and Scale
   M. Gail Jones
   Amy Taylor
   James Minogue
   Bethany Broadwell
   Eric Wiebe
   Glenda Carter

iv. P-185-333-332-369: The Role of Disciplinary Faculty in Facilitating the Development of Teacher Knowledge for Implementing Inquiry-Based Science Instruction
   Stacy I. Olitsky

**Group: Strand: 5 Undergraduates as Teachers and Researchers (group 106)**

**Nottoway**

*Strand Coordinator Organized Paper Set:*

*Presider: Bina H. Vanmali*

i. P-457-815-814-849: Perceptions of College Science Tutors About Their Roles
   Binaben H. Vanmali
   Sandra K. Abell
ii. P-323-558-557-594: The Differential Benefits of Participation in Research Experiences for Undergraduates (REUs) as a Function of Carnegie Classification of Home Institution
   Barbara A. Austin
   Michael Pullin

iii. P-334-577-576-613: A Qualitative Study of the Development of Undergraduate Self-Efficacy Beliefs in a Biology Laboratory Internship
   Elizabeth Berkes

**Group: Strand: 6 Science in Action (group 52)**

**Napoleon A1**

*Related Paper Set:*

i. P-517-1291-1290-1322: Paper #1 Science-In-Action: Implementing a New Approach to Informal Education
   Karen Sullenger
   Marie Cashion

ii. P-517-1296-1295-1327: Paper #2 Elementary Students’ Perceptions of Scientists Versus Themselves Doing Science
   Michael Edwards
   Karen Sullenger
   Carla Shaw
   Jeannine Clark

iii. P-517-1301-1300-1332: Paper #3 Is What We Are Doing Science? -- Middle School Students’ Perspectives of Scientists and Themselves Doing Science
   Debby Peck
   Peter Morrison
   Danny Marmen
   Karen Sullenger

iv. P-517-1306-1305-1337: Paper #4 Attitudes About and Interest in Science: An After School Research Program for Elementary and Middle School
   David Desjardins
   Karen Sullenger
   Robyn Smart

   Marie Cashion
   Lesley Balcom
   Essie Lom
   Meg McCallum
Group: Strand: 7 Preservice Teachers’ Perceptions of Science (group 130)

Borgne

Strand Coordinator Organized Paper Set:

i. P-567-1077-1076-1110: Preservice Science and Social Studies Teachers’ Perceptions of Science
   Austin M. Hitt
   Emory C. Helms

ii. P-677-1363-1362-1394: What is an Epistemology? Examining Proximal vs. Distal Understandings of the Nature of Science in Pre-Service Teachers Science Autobiographies
   Christopher J. Burke
   Richard H. Moyer

iii. P-431-766-765-800: Thai Pre-Service Science Teachers’ Science Process Skills, Views on the Nature of Science, and Attitudes Towards Biology
    Nantarat Puengpang
    Vantipa Roadrangka
    Bronwen Cowie
    Chris Eames

iv. P-315-544-543-580: Concept Mapping as a Learning and Assessment Tool for the Nature of Science
   Emily J. Borda
   Donald Burgess
   Charlotte J. Plog
   Natalia DeKalb
   Morgan Luce

Group: Strand: 8 Science Teacher Support (group 19)

Oak Alley

Strand Coordinator Organized Paper Set:
Presider: Rita Hagevik

i. P-29-530-529-566: Sustained Professional Development: An Examination of the Effects on Urban Elementary Teachersí Content and Practice
   Molly H. Weinburgh

ii. P-359-871-870-905: Blogging as Support for an Urban Science Teacher’s Professional Identity Development
   April L. Luehmann
iii.  P-726-1511-1510-1541: Trouble with Activities: Novice Science Teachers and Hands-On Science in Urban Classrooms
Jodie A. Galosy

iv.  P-98-165-164-201: The Impact of the Partnership for Reform Through Inquiry in Science and Mathematics (PRISM) Program on Teachers’ Self Efficacy and Beliefs About Inquiry-Based Science Teaching
Tracy L. Huziak-Clark
Lena Ballone Duran
Stephen J. Van Hook
Svetlana Beltyukova
Julie Nurnberger-Hagg

Group: Strand: 9 Transformative Action Research in Urban Science Education
(group 162)
Gallier A/B
Related Paper Set:
Presider: Tamara Holmlund Nelson

i.  P-557-1299-1298-1330: Transformative Action Research in Urban Science Education
Melina Furman
Angela Calabrese Barton
Jennie Brotman
Purvi Vora
Nicholas Stroud
Beverly Lafferty

Group: Strand: 10 Emphasizing Thinking Skills and Metacognition Through Reading Chemical Articles and Inquiry-based Experiments (group 176)
Bayside C
Symposium:

i.  S-756-1615-1614-1644: Emphazing Thinking Skills and Metacognition Through Reading Chemical Articles and Inquiry-Based Experiments
Avi Hofstein
Rachel Mamlock-Naaman
Zvia Kaberman
Abeer Abed
Liora Saar
Nitza Barnea
Judy Dori, Chair and Organizer
Penny J. Gilmer, Discussant
Group: Strand: 11 Challenging Some Myths About Urban Science Education (group 75)
Bayside A
Symposium:
Presider: Glenda M. Prime

i. S-700-1439-1438-1470: Challenging Some Myths About Urban Science Education
   Glenda M. Prime
   Bradford Lewis
   Obed Norman
   Barbara Butler
   Karen Benn-Marshall

Group: Strand: 12 Teacher Learning from Videocases of Science Teaching: A Conceptual Framework (group 40)
Maurepas
Related Paper Set:

   Kathleen J. Roth
   Catherine Chen

ii. P-396-1435-1434-1466: Paper #2 The Use of Videocases in Preservice Teacher Education: The ViSTA Project
    Kathleen Schwille
    Karen Givvin
    Catherine Chen

iii. P-396-1445-1444-1476: Paper #3 The Use of Videocases in Inservice Teacher Professional Development: The STeLLA Project
     Catherine Chen
     Kathleen Schwille
     Nicole Wickler

iv. P-396-1447-1446-1478: Paper #4 Assessing Learning in Preservice and Inservice Teacher Education: Preliminary Results of the ViSTA and STeLLA Project
    Karen Givvin
    Meike Lemmens
    Rossella Santagata
Group: Strand: 13 Interactions of Teaching and Learning of the Nature of Science (group 136)
Napoleon A3
Strand Coordinator Organized Paper Set:
Presider: Lawrence Scharmann

i. P-246-1125-1124-1158: Metaphysics as Physics: An Alternate Disposition for the Teaching and Learning Relationship in Science Education
   Douglas D. Arrow

    Ian C. Binns
    Christine Schnittka
    Douglas Toti
    Randy L. Bell

iii. P-299-507-506-543: Interactive Relationships Among Teachers’ Intentions, Beliefs, Pedagogical Content Knowledge and Classroom Instruction on the Nature of Science
    Jenny Kwan
    Siu Ling Wong

    Zoubeida R. Dagher

Group: Strand: 14 Environmental Education Research in Other Contexts (group 124)
Napoleon A2
Strand Coordinator Organized Paper Set:
Presider: David Zandvliet

i. P-75-543-542-579: The Use of Self-Determination Theory to Foster Environmental Motivation
   Rebekka Darner

ii. P-499-1545-1544-1575: A Critical Examination of the Production of Instructional Resources for the Elementary Environmental Science Classroom
    Joan M. Chambers

iii. P-755-1613-1612-1642: Building a Green Partnership
    Teddie Phillipson-Mower

iv. P-134-222-221-258: Understanding the Dynamics of Teaching for Sustainable Development at an American University
    Ahmad M. Qablan
    Sherry Southerland
Group: International Committee-Sponsored Paper Set: Professional Development of Science Educators Worldwide (group 158)
Grand Couteau

International Committee-Sponsored Paper Set:
Saouma BouJaoude, Chair of the International Committee, presides for this paper set.

i. P-784-1689-1686-1716: Paper #1 University Science Educators: Are We Learning From Each Others’ Experiences?
   Saouma BouJaoude
   Justin Dillon

    Pamela Fraser-Abder

    Justin Dillon

iv. P-784-1692-1689-1719: Paper #4 Three Models of Professional Development
    Avi Hofstein
    Rachel Mamlok-Naaman

    Fouad Abd-El-Khalick

vi. P-784-1694-1691-1721: Paper #6 Professional Development of Science Teachers in Brazil
    Eduardo Mortimer

12 – 2 pm

Awards Luncheon
Napoleon CD123 & CD Corridor