

NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING (NARST)

NARST Annual International Conference 2007



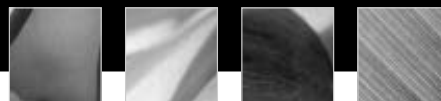
FINAL PROGRAM

Restructuring Science Education Through Research

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



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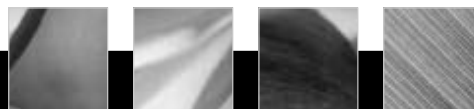
ALT-J Research in Learning Technology

Edited by Gráinne Conole, Open University, UK; Martin Oliver, Institute of Education, UK; Jane K Seale, University of Southampton, UK

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Online ISSN 1741-1629

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NATIONAL ASSOCIATION FOR RESEARCH IN SCIENCE TEACHING (NARST)

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

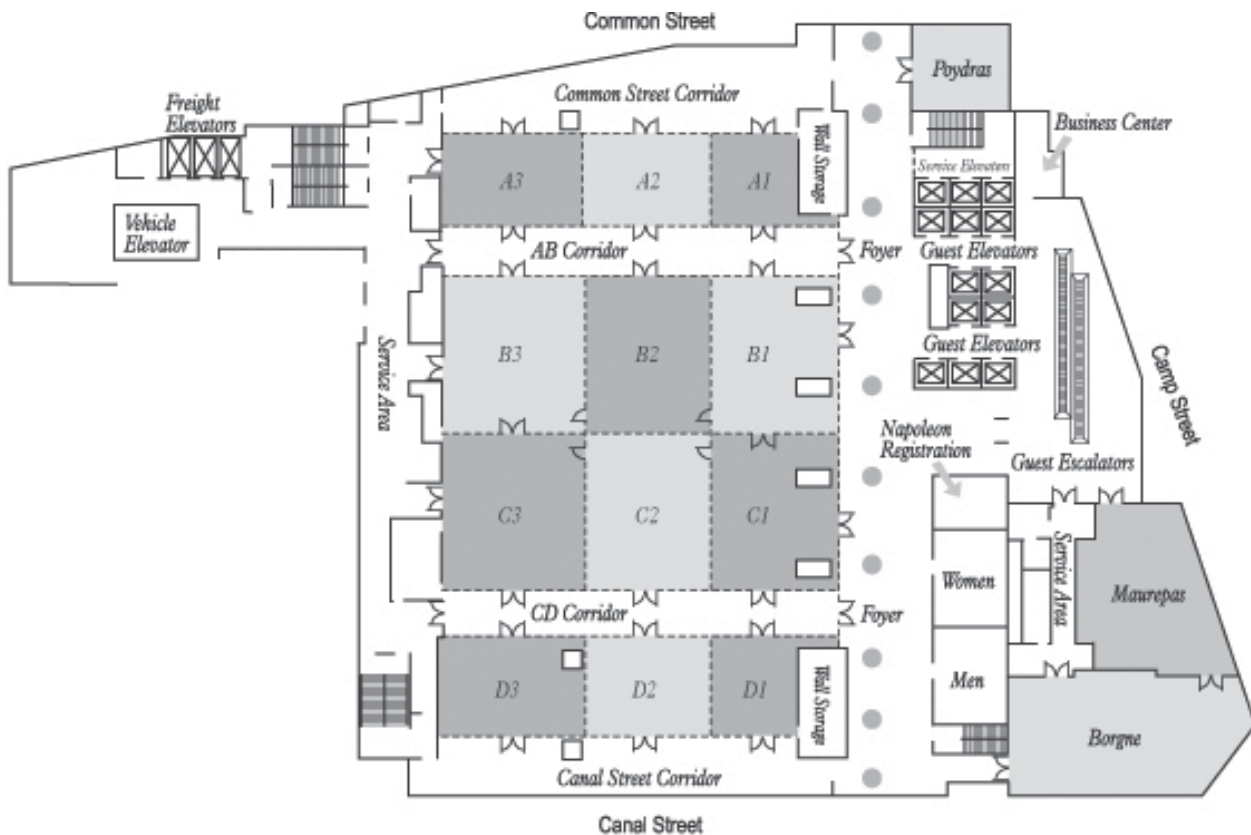
Penny J. Gilmer, President-elect
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James Shymansky, Program Committee Co-Chair and Past President
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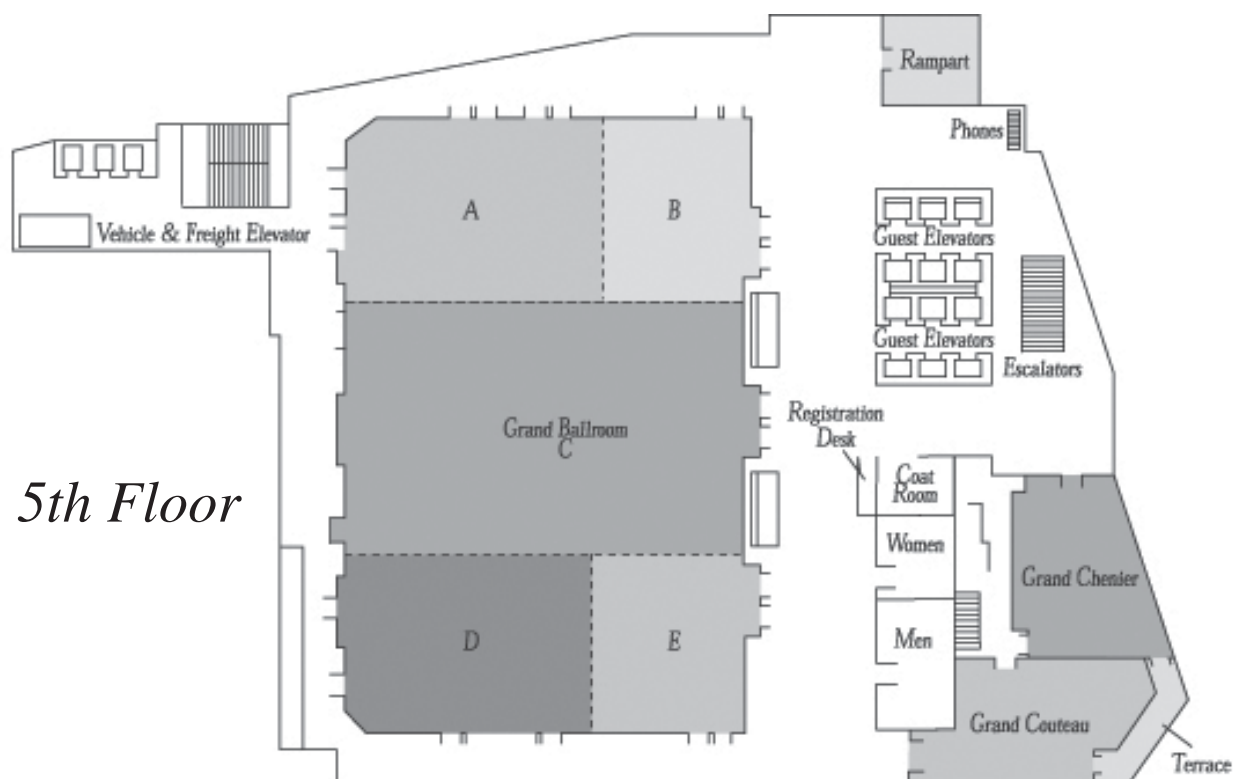
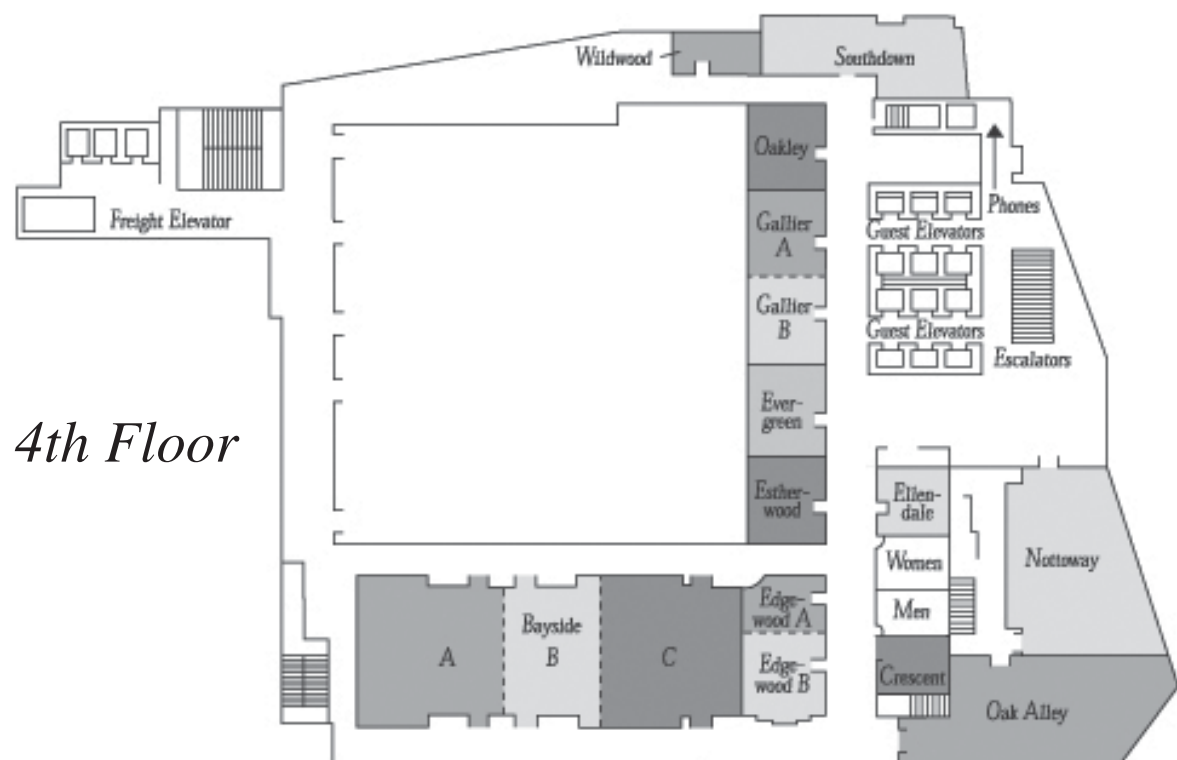
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SHERATON NEW ORLEANS HOTEL

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.

Strand Key

- STRAND 1** Science Learning: Understanding and Conceptual Change
- STRAND 2** Science Learning: Contexts, Characteristics, and Interactions
- STRAND 3** Science Teaching—Primary School (Grades preK-6): Characteristics & Strategies
- STRAND 4** Science Teaching—Middle and High School (Grades 5-12): Characteristics & Strategies
- STRAND 5** College Science Teaching and Learning (Grades 13-20)
- STRAND 6** Science Learning in Informal Contexts
- STRAND 7** Pre-service Science Teacher Education
- STRAND 8** In-service Science Teacher Education
- STRAND 9** Reflective Practice
- STRAND 10** Curriculum, Evaluation, and Assessment
- STRAND 11** Cultural, Social, and Gender Issues
- STRAND 12** Educational Technology
- STRAND 13** History, Philosophy, and Sociology of Science
- STRAND 14** Environmental Education

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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

appear on the NARST website in June 2007.

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

2007	NSTA	St. Louis	March 29- April 1
	AERA	Chicago	April 9-13
	NARST	New Orleans	April 15-18
2008	NSTA	Boston	March 27-30
	AERA	New York City	March 24-28
	NARST	Baltimore	March 30-April 2
2009	NSTA	Indianapolis	April 2-5
	AERA	San Diego	April 13-17
	NARST	Anaheim	TBA
2010	NSTA	Philadelphia	March 17-20
	AERA		
	NARST		
2011	NSTA		
	AERA	New Orleans	April 8-12
	NARST	New Orleans	
2012	NSTA		
	AERA	Vancouver	April 13-17
	NARST		

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 Osisoma, 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	Kim Byoung-Sug	Lisa Donnelly
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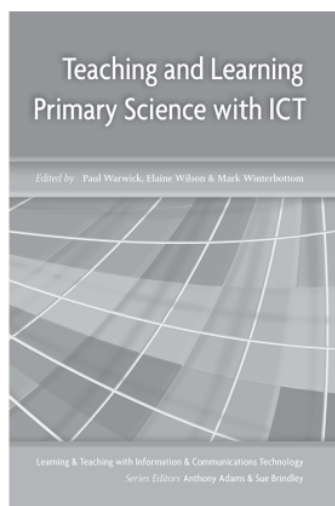
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1942	G. P. Cahoon	1980	John W. Renner
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1950	N. Eldred Bingham	1988	Linda DeTure
1951	Betty Lockwood	1989	Patricia Blosser
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1953	J. Darrell Barnard	1991	Jane Butler Kahle
1954	George G. Mallinson	1992	Russell H. Yeany
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1964	Cyrus W. Barnes	2002	Norman G. Lederman
1965	Frederic B. Dutton	2003	Cheryl L. Mason
1966	Milton P. Pella	2004	Andy (Charles) Anderson
1967	H. Craig Sipe	2005	John R. Staver
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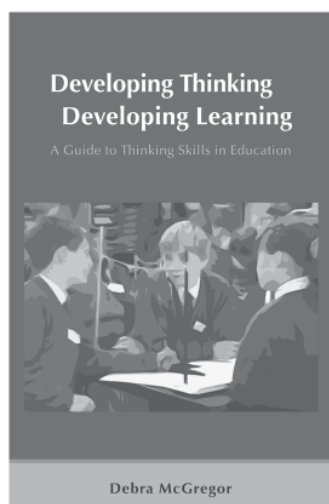
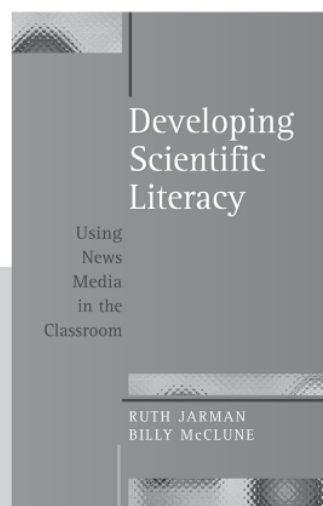
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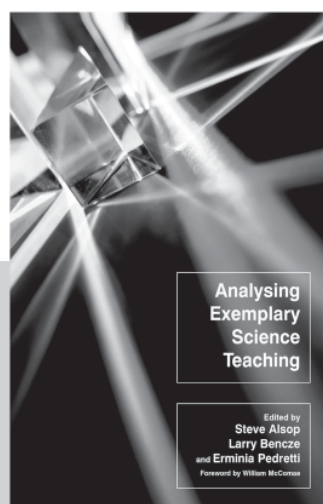
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NARST Award Winners

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.

Year	Awardee	Year	Awardee
1986	Anton E. Lawson	1997	Rosalind Driver
1987	Paul DeHart Hurd	1998	James J. Gallagher
1988	John W. Renner	1999	Peter J. Fensham
1989	Willard Jacobson	2000	Jane Butler Kahle
1990	Joseph D. Novak	2001	John K. Gilbert
1991	Robert L. Shrigley	2002	Audrey B. Champagne
1992	Pinchas Tamir	2003	Barry J. Fraser
1993	Jack Easley, Jr.	2004	Robert E. Yager
1994	Marcia C. Linn		Paul Black
1995	Wayne W. Welch	2005	John C. Clement
1996	Carl F. Berger	2006	David Treagust

JRST Award

The JRST 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.

Year	Awardee	Year	Awardee
1974	Donald E. Riechard and Robert C. Olson	1991	E. P. Hart and I. M. Robottom
1975	Mary Budd Rowe	1992	John R. Baird, Peter J. Fensham, Richard E. Gunstone, and Richard T. White
1976	Marcia C. Linn and Herbert C. Thier	1993	Nancy R. Romance and Michael R. Vitale
1977	Anton E. Lawson and Warren T. Wollman	1994	E. David Wong
1978	Dorothy L. Gabel and J. Dudley Herron	1995	Stephen P. Norris and Linda M. Phillips
1979	Janice K. Johnson and Ann C. Howe	1996	David F. Jackson, Elizabeth C. Doster, Lee Meadows, and Teresa Wood
1980	John R. Staver and Dorothy L. Gabel	1997	C.W.J.M. Klassen and P.L. Linjse
(tie)	Linda R. DeTure	1998	Julie Bianchini
1981	William C. Kyle, Jr.	1999	Phillip M. Sadler
1982	Robert G. Good and Harold J. Fletcher		
(tie)	F. David Boulanger		
1983	Jack A. Easley, Jr.		

1984	Marcia C. Linn, Cathy Clement and Stephen Pulos	2000	Allan G. Harrison, Diane J. Grayson, and David F. Treagust
1985	Julie P. Sanford	2001	Fouad Abd-El-Khalick Norman G. Lederman
1986	Anton E. Lawson	2002	Andrew Gibert and Randy Yerrick
1987	Russell H. Yeany, Kueh Chin Yap, and Michael J. Padilla	2003	Sofia Kesidou and Jo Ellen Roseman
1988	Kenneth G. Tobin and James J. Gallagher	2004	Jonathan Osborne, Sue Collins, Mary Ratcliffe, Robin Millar and Rick Duschl
1988 (tie)	Robert D. Sherwood, Charles K. Kinzer, John D. Bransford and Jeffrey J. Franks	2005	Jonathan Osborne Sibel Erduran Shirley Simon
1989	Anton E. Lawson	2006	Troy D. Sadler Dana L. Zeidler
1989	Glen S. Aikenhead		
1990	Richard A. Duschl and Emmett L. Wright		

Outstanding Paper Award

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.

Year	Awardee	Year	Awardee
1975	John J. Koran	1991	Nancy R. Romance and Michael Vitale
1976	Anton E. Lawson	1992	Patricia Heller, Ronald Keith, and Scott Anderson
1977	no award	1993	Wolff-Michael Roth
1978	Rita Peterson	1994	Wolff-Michael Roth and Michael Bowen
1979	Linda R. DeTure	1995	Wolff-Michael Roth
1980	M. James Kozlow and Arthur L. White	1996	Nancy J. Allen
1981	William Capie, Kenneth G. Tobin, and Margaret Boswell	1997	no award
1982	F. Gerald Dillashaw and James R. Okey	1998	Wolff-Michael Roth, Reinders Duit, Michael Komorek, and Jens Wilbers
1983	William C. Kyle, Jr., James A. Shymansky, and Jennifer Alport	1999	Lynn A. Bryan
1984	Darrell L. Fisher and Barry J. Fraser	2000	Joseph L. Hoffman and Joseph S. Krajcik
1985	Hanna J. Arzi, Ruth Ben-Zvi, and Uri Ganiel	2001	Allan G. Harrison
(tie)	Russell H. Yeany, Kueh Chin Yap, and Michael J. Padilla	2002	Carolyn Wallace Keys Eun-Mi Yang Brian Hand and Liesl Hohenshell
1986	Barry J. Fraser, Herbert J. Walberg, and Wayne W. Welch	2003	Wolff-Michael Roth
		2004	Joanne K. Olson
		(tie)	Sharon J. Lynch,

1987	Robert D. Sherwood	Joel Kuipers,
1988	Barry J. Fraser and Kenneth G. Tobin	Curtis Pyke and Michael Szesze
1989	James J. Gallagher and Armando Contreras	2005 Chi Yan Sui, David Treagust and Michael Szesze
1990	Patricia L. Hauslein, Ronald G. Good, and Catherine Cummins	2006 Leema Kuhn and Brian Reiser

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.

Year	Awardee	Major Professor
1992	René Stofflett	Dale R. Baker
1993	Julie Gess-Newsome	Norman G. Lederman
1994	Carolyn W. Keys	Burton E. Voss
1995	Jerome M. Shaw	Edward Haertel
1996	Christine M. Cunningham	William L. Carlsen
1997	Jane O. Larson	Ronald D. Anderson
1998	Kathleen Hogan	Bonnie K. Nastasi
1999	Fouad Abd-El-Khalick	Norman G. Lederman
2000	Danielle Joan Ford	Annemarie S. Palinscar
2001	Iris Tabak	Brian Reiser
2002	Mark Girod	David Wong
2003	Hsin-Kai Wu	Joseph Krajcik
2004	David L. Fortus	Ronald Marx and Joseph Krajcik
2005	Thomas Tretter	Gail M. Jones
2006	Stacy Olitsky	Kenneth Tobin

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.

Year	Awardee	Major Professor
1995	Moreen K. Travis	Carol L. Stuessy
1996	Lawrence T. Escalada	Dean A. Zollman
1997	C. Theresa Forsythe	Jeffrey W. Bloom
1998	Reneé D. Boyce	Glenn Clark
1999	Andrew B. T. Gilbert	Randy K. Yerrick
2000	Rola Fouad Khishfe	Fouad Abd-El-Khalick
2002	Laura Elizabeth Slocum	Marcy Hamby Towns

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.

Year	Awardee	Year	Awardee
1993	Wolff-Michael Roth	2000	Angela Calabrese Barton
1994	Deborah J. Tippins	2001	Julie A. Bianchini
1995	Nancy B. Songer	2002	Alan G. Harrison
1996	Mary B. Nakhleh	2003	Fouad Abd-El-Khalick
1997	Peter C. Taylor	2004	Grady J. Venville
1998	J. Randy McGinnis	2005	Randy L. Bell
1999	Craig W. Bowen	2006	Heidi Carloni
	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.

Year	Awardee(s)
1980 (Five Equal Awards)	Livingston S. Schneider and John W. Renner Heidi Kass and Allan Griffiths Ramona Saunders and Russell H. Yeany Joe Long, James R. Okey, and Russell H. Yeany M. James Kozlow and Arthur L. White
1981 (Four Equal Awards)	Dorothy L. Gabel, Robert D. Sherwood, and Larry G. Enochs Wayne Welch, Ronald D. Anderson, and Harold Pratt Mary Ellen Quinn and Carolyn Kessler P. Ann Miller and Russell H. Yeany
1982 (Four Equal Awards)	Louise L. Gann and Seymour Fowler Dorothy L. Gabel and Robert D. Sherwood Thomas L. Russell Joseph C. Cotham
1983	Robert D. Sherwood, Larry G. Enochs, and Dorothy L. Gabel
1984 (Four Equal Awards)	Mary Westerback, Clemencia Gonzales, and Louis H. Primavera Kenneth G. Tobin Hanna J. Arzi, Ruth Ben-Zvi, and Uri Ganiel Charles Porter and Russell H. Yeany
1985 (Three Equal Awards)	Dan L. McKenzie and Michael J. Padilla Margaret Walkosz and Russell H. Yeany Kevin C. Wise and James R. Okey

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

	Event	Room
<u>Sunday, April 15th</u>		
8:30 - 11:30 am	Workshops Use of Concept Maps for Improving Resch., Teaching & Learning Applications of Rasch Measurement in Science Education Scholars from Underrepresented Groups and the Academy	Listed within full schedule
12:30 – 2 pm	Concurrent Sessions	Listed within full schedule
2 – 2:30 pm	Break	
2:30 – 4 pm	Concurrent Sessions	Listed within full schedule
4:15 – 5:45 pm	Concurrent Sessions	Listed within full schedule
6 - 7 pm	Mentor - Mentee Nexus	
7 - 9 pm	Presidential/Welcome reception	
<u>Monday, April 16th</u>		
7 - 8:15 am	Committee meetings	Listed within full schedule
8:30 - 10 am	Plenary session	Listed within full schedule
10:15 – 11:45 am	Concurrent Sessions	Listed within full schedule
11:45 - 12:30 pm	Lunch on your own	
12:30 – 2 pm	Concurrent Sessions	Listed within full schedule
2 – 2:30 pm	Break	
2:30 – 4 pm	Concurrent Sessions	Listed within full schedule
4:15 – 5:45 pm	Concurrent Sessions	Listed within full schedule
Evening	off-site social or on your own	
6 – 7 pm	Graduate Student and Junior Faculty Early Career Discussion	
6 - 8 pm	JRST mtg and dinner	
6 - 8 pm	EJSE Reception	
7 - 9 pm	Equity dinner - off site	
<u>Tuesday, April 17th</u>		
7 – 8:15 am	Committee meetings	Listed within full schedule
8:30 – 10 am	Concurrent Sessions	Listed within full schedule
10 – 10:30 am	Break	
10:30 – 12 noon	Concurrent Sessions	Listed within full schedule
12 – 12:30 pm	Lunch on your own	
1 – 2:30 pm	Concurrent Sessions	Listed within full schedule
2:30 – 3 pm	Break	
3 – 4:30 pm	Concurrent Sessions	Listed within full schedule
4:45 – 6:15 pm	Concurrent Sessions	Listed within full schedule
6 – 6:45 pm	New Researcher Orientation	
6:30 – 7:30 pm	NARST Business mtg	
8 – 12 pm	FARSE social	
<u>Wednesday, April 18th</u>		
7 – 8:15 am	Strand mtg w/ coordinators & WIP Sessions	
8:30 – 10 am	General session	
10:15 – 11:45 am	Plenary Sessions	Listed within full schedule
12 – 2 pm	Awards luncheon	

Strand rooms assignments

3rd Floor

Napoleon A1	Strand #6
Napoleon A2	Strand #14
Napoleon A3	Strand #13
Napoleon B1	Strand #1
Napoleon B2	Strand #4
Napoleon B3	Strand #2
Borgne	Strand #7
Maurepas	Strand #12

4th floor

Bayside A	Strand #11
Bayside B	Strand #3
Bayside C	Strand #10
Gallier A/B	Strand #9
Edgewood A/B	Miscellaneous
Oak Alley	Strand #8
Nottoway	Strand #5
Southdown	TBD

5th floor

Grand Couteau	Committee – and Presidential – sponsored sessions
Grand Chenier	Board Meetings Some Strand #10 sessions, and one committee-sponsored session



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Wolff-Michael Roth and Kenneth Tobin (Eds.)

The Culture of Science Education

Its History in Person

Kenneth Tobin and Wolff-Michael Roth

Doing Educational Research

A Handbook

Kenneth Tobin and Joe Kincheloe (Eds.)

Teaching To Learn

A View From the Field

Kenneth Tobin and Wolff-Michael Roth

The Re-Emergence of Values in Science Education

Deborah Corrigan, Justin Dillon and Richard Gunstone (Eds.)

Understanding Teacher Expertise in Primary Science

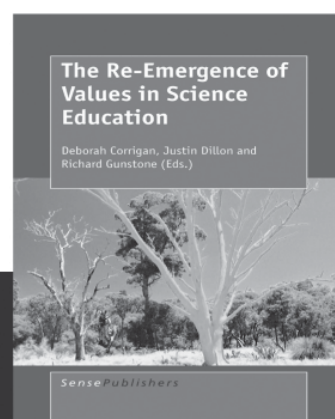
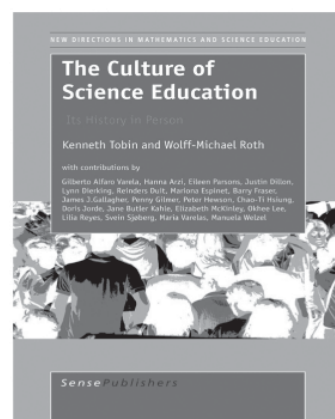
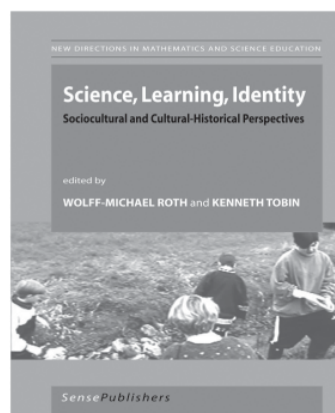
A Sociocultural Approach

Anna Traianou

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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.

SUNDAY

12:30 – 2 pm

Concurrent Sessions

SUNDAY

**Group: Strand: 1 Symposium: Enhancing Student Learning in Chemistry (group 4)
Napoleon B1**

Strand Coordinator-Invited Symposium:

Presider: Anil Banerjee

- i. P-273-1616-1615-1645: Paper #1 Invited Related Paper Sets: Enhancing Student Learning in Chemistry
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
- iii. P-273-1618-1617-1647: Paper #3 Using Cogenerative Dialogue With Undergraduate Biochemistry Students to Improve Learning Environment
Penny J. Gilmer
Jennifer Cirillo
- iv. P-273-1619-1618-1648: Paper #4 Of Minds and Molecules: Developing Cognitively Appropriate Simulations for High School Chemistry
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
- iii. P-718-1534-1533-1564: Paper #3 “Um, Since I Argue for Fun, I Don’t Remember What I Argue About:” Using Children’s Everyday Argumentation Across Social Contexts to Inform Science Instruction
 Philip Bell
 Leah A. Bricker
- iv. P-718-1537-1536-1567: Paper #4 Argumentation in Modeling Classrooms
 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

- iv. P-235-388-387-424: Implementing a Technology System Combining Inquiry-Based Science and Reading Comprehension Strategies to Help Second Language Learners Improve Their Understanding of Scientific Text in a Bilingual Environment
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
- iv. P-153-1359-1358-1390: Impact of an Introductory College Inquiry Based Biology Laboratory on Biology Self-Efficacy
Megan E. Thomas

Group: Strand: 6 Discourse, Dialogue and Meaning-Making in Informal Science Institutions (group 47)

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
- iii. P-19-145-144-181: Evaluation and Assessment Capacity of Urban Schools: Engaging Elementary Teachers in Collaborative Evaluation Communities
Douglas Huffman
Anita Lundy
- iv. P-184-322-321-358: Science Taught, Science Learned: Patterns of Performance in an Elementary Reform Initiative
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:

- i. P-624-1217-1216-1249: Computer Simulations to Support Science Instruction and Learning: A Critical Review of the Literature
Lara K. Smetana
Randy L. Bell
- ii. P-361-626-625-662: Computerized Modelization Process in Physical Mechanics
Martin Riopel
Patrice Potvin
Gilles Raïche
Steve Masson
Frédéric Fournier
- iii. P-233-433-432-469: Learning Atomic Structure and the Periodic Table Using 3D Hands-On VAST-Models and Video Animations
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

- ii. P-461-827-826-861: What's the Science Behind It? Students' Models of Motion in a Design-for-Science Classroom
Mary J. Leonard
- iii. P-409-721-720-755: High School Students' Learning Pathways of the Particulate Nature of Matter
Emine Adadan
Karen E. Irving
Kathy C. Trundle
- iv. 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:

- i. P-473-858-857-892: Factors That Influence Question Rejection in Two Urban Middle School Science Classrooms
Meghan P Groome
- ii. P-90-860-859-894: Consistency of Moral Sensitivity Across Varying Socioscientific Issues
Samantha R. Fowler
Leila Amiri
- iii. P-268-613-612-649: The Driving Question Board: A Tool to Support Inquiry-Based Learning
Ayelet Weizman
David Fortus
- iv. 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
- ii. P-644-1256-1255-1287: Curricular Relevance, High Stakes Testing and the Reality of Reforming High School Science Classrooms
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
- iv. P-709-1485-1484-1515: Carbon Cycle Learning Progressions for K-12 in Korea and the U.S.
In-Young Cho

Group: Strand: 5 Scientists Learning Science: A Collaborative Partnership Between Science Doctoral Students and K-8 Science Teachers (group 109)**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:

- i. P-36-640-639-676: Identity Constructs Amid Science, Teaching, and Self: Implication for Science Teacher Education
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
- ii. P-79-439-438-475: Negotiating Contradictions: The Development of Professional Identity Through Participation in a Community of Practice
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
- ii. P-55-108-107-144: Industry-Sponsored, Content-Rich Professional Development:
Influences on Attitudes Towards Applied Science
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
- iv. P-48-463-462-499: Translating Experience Into Practice: The Effect of Legitimate
Peripheral Participation in Authentic Science on Classroom Practice
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
- iv. P-645-1361-1360-1392: Paper #4 Using Learning Progressions to Inform 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
Shinping 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
- ii. P-341-586-585-622: Climbing Our Family Tree: The Untimely Birth of Children’s Books About Evolution, 1920-1955
Trevor J. Owens
- iii. P-277-644-643-680: Understanding Quantum Numbers in General Chemistry Textbooks
Mansoor Niaz
RamŪn Fern·ndez

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, PhD, 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
- iv. P-581-1152-1151-1184: The Influence of Prior Knowledge on Interpreting Graphics of Cellular Transport
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. Waldrup
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*

- i. P-229-376-375-412: An International, Systematic Investigation of the Relative 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

- iii. P-708-1459-1458-1490: What Does Inquiry Mean to Beginning Science Teachers of an Alternative Certification Program?
Abdulkadir Demir
Sandra K. Abell

- iv. P-289-486-485-522: Authentic Research Projects: Pre-College Students' Perspectives
Warren J. Bernard

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
- ii. P-674-1382-1381-1413: Digging Deep: Exploring College Students' Understanding of Macroevolutionary Time
Kefyn M. Catley
Laura R. Novick
- 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

- iii. P-56-253-252-289: Teaching Science for Social Justice Through Socioscientific Issues: Teacher Candidates' Beliefs
Sarah E. Barrett
Martina Nieswandt

**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

- iii. P-491-1438-1437-1469: Emotion and Particularity in Learning about Plants: A Teacher-Research Study of Preservice Students' Journal Writing
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

S-130-1333-1332-1364: Programmatic Assessment: Tools for Informed Restructuring of Curriculum

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
- iv. P-255-595-594-631: How Underserved Urban Girls Engage in Co-Authoring Life Stories and Scientific Stories
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
- iii. P-349-605-604-641: Improving Reflective Judgment in High School Students Through Socioscientific Issues
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)

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
- iii. P-767-1651-1648-1678: Paper #3 Educating for the Future: Technological Advantage?
Coral Campbell
Gail Chittleborough
Peter Hubber
Russell Tytler
- iv. P-767-1652-1649-1679: Paper #4 The Influence of a Standard-based Qualification on Student Inquiry in Science
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.

SUNDAY

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

MONDAY

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
William J. Newman Jr.
- 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
- iv.** Q-355-1344-1343-1375: Comparing Students' and Their Parents' Ideas about Weather: A Cultural Outlook
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

MONDAY

- viii. Q-237-449-448-485: Teaching for Understanding: A Comparison of Grade- 9/10 Student Performance Using Diagnostic and Standardized Assessments in Photosynthesis/Respiration and Genetics
Serena N. McCalla
David F. Treagust

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

Southdown

Poster Set:

MONDAY

- 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
- iii. P-329-566-565-602: Exploring Relationships among Students' Learning Approach, Motivational Goals, and Achievement
Esme Hacıeminoglu
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
- v. Q-145-380-379-416: Teachers as Learners and Scientists: Using Inquiry in an Online Chemistry Course for Elementary and Middle School Science Teachers
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. Waldrup
 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
- ix.** P-162-384-383-420: Urban High Schools: Factors That Enhance And Those That Impede The Learning Of Science.
 Mutindi Ndunda
 Irene Osisoma
- 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
- xi.** Q-602-1177-1176-1209: Could That Really Happen? Elementary Inquiry Around Informational and Narrative Texts
 Mark T. Enfield
- xii.** P-110-224-223-260: Scientific Inquiry with Information Technologies: High School Students' Experience
 Jazlin Ebenezer
 Osman N. Kaya
- xiii.** Q-759-1004-1003-1037: Acts of Emotional Compliance and Deviance: Rendering Visible Contrasting Emotional Boundaries in Elementary Science Classrooms
 Steve Alsop
 Sheliza Ibrahim

Group: Strand: 2 Teaching and Learning Poster Session II (group 88)

Napoleon B3

Poster Set:

MONDAY

- 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 Hanks
- iii. P-244-406-405-442: The Linguistic Construction of Expert Identity in Professor-Student Discussions of Science
Alandeom 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 Rannikmäe
- 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:

MONDAY

- 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 Students' Attitudes and Perceptions of Science and Art
Michelle A. Fleming
Kelly M. B. Strifling
Frances P. Lawrenz
- vi. Q-588-1123-1122-1156: Changing Teachers' Instruction to Improve the Acquisition of Students' Experimental Competencies
Regina S. Hübinger
Elke Sumfleth

- vii. Q-713-1475-1474-1505: Investigating the Tacit Problem-Solving Strategies of Novice Designers: Implications for Science Teaching and Learning
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)

Nottoway

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
- ii. Q-334-785-784-819: Undergraduate Laboratory Research, Persistence in Science, and the Effect of Self-Efficacy Beliefs: A Quantitative Study
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
Florescia M. Rembado

Sheraton New Orleans Hotel • New Orleans, LA

MONDAY

- 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
- vii. Q-216-1434-1433-1465: Supporting Conceptual Change Via Collaborative Inquiry Using Virtual Laboratories in an Introductory College Classroom
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 Students’ 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

- v. Q-274-454-453-490: Searching for Real-Time Science Learning Materials: A Study of the Structures and Implications of Science News Briefs in Taiwan
Huang Chun Ju
Jian Miao Ju

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

- vii. Q-359-874-873-908: Urban Students and School Science: Out-of-School Inquiry as Access
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
- xiii. Q-73-286-285-322: Cardiac Surgery Observation Dome to Enhance Awareness of Disease Risk Factors and Career Choices in High School Students: Using Personal Meaningful Mapping (PMM)
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
- v.** P-715-1515-1514-1545: Developing a Self-Efficacy Scale Towards the Use of Mathematics in Science Lessons: A Validity and Reliability Study
 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

- ii. P-477-861-860-895: Preservice Elementary Teachers' Developing Understandings and Practices for Teaching School Science as Argument
Carla Zembal-Saul
Reizelie Barreto
- iii. Q-593-1142-1141-1174: Inquiry and the Pre-Service Science Teacher
Lisa M. Martin-Hansen
- iv. P-119-1093-1092-1126: Connecting Mathematics and Science: Using Inquiry Investigations to Learn About Data Collection, Analysis, and Display
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
- vii. Q-714-1491-1490-1521: Developing Preservice Elementary Teachers' Science Teaching Efficacy in Authentic Context: A Science Methods Course Model With Teaching Experience Through Collaboration Among University and Local Elementary School Teachers
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

MONDAY

- 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
- x. Q-133-214-213-250: Working to Measure the Impact of Professional Development Activities: Offering an Instrument to Quantify Science Teachers' Pedagogical Discontentment
Sherry A. Southerland
Scott Sowell
D. Ellen Granger
Murat Kahveci
Yavuz Saka
- xi. Q-639-1332-1331-1363: Developing and Evaluating a Sustainable, Socially Derived, Science Teaching Approach - A Longitudinal Study of Teachers
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

- iii. 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

- i. Q-143-901-900-934: The Efficacy of Learning Physics First: A Pilot Study
Research Report
James V. Neufell
Richard A. Duschl
- ii. Q-159-1427-1426-1458: Development of a 'Universal' Rubric for Assessing Students' Science Inquiry Skills
Briana E. Timmerman
Robert L. Johnson
John Payne
- iii. 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
- iv. 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
- v. 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
- vi. Q-333-571-570-607: Assessing Students' Understanding of 'Controlling Variables'
Arhonda Gogos
George DeBoer

MONDAY

- 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
- ix. Q-687-1466-1465-1496: The Nexus Between Science Literacy & Technical Literacy: A State by State Analysis of Engineering Content in State Science Frameworks
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
- ii. P-416-735-734-769: Modeling a Complex System: Using Novex Analysis for Developing an Effective Learning Module
Hsin-Kai Wu
Ying-Shao Hsu
Fu-Kwun Hwang
- iii. P-583-1212-1211-1244: Middle School Science Curriculum: How Classroom Practices Inform Curriculum Design
Elizabeth Gonzalez
Barbara Hug
- iv. P-109-181-180-217: Negotiating Contradiction: Biology Instruction in a High-Stakes Environment
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 Educative 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
- viii. P-719-1529-1528-1559: Enhancing the Draw-A-Scientist Test: The Rubric and Its Reliability
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

- vii. P-214-353-352-389: Inquiring With English Learners: Connecting Instruction, Assessment, and Scientific Inquiry
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

- ix. Q-179-1414-1413-1445: Using Hmong Students' Funds of Knowledge as Resources for Teaching Empowering Science
Cristina DeFranco
Bhaskar Upadhyay

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

- xi. P-303-514-513-550: Visual Impaired Students' Rationales of Scale and Scaling
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

Group: Strand: 12 Educational Technology: Innovative Technologies for Learning and Doing Science (group 41)

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
- iii. Q-420-1229-1228-1260: What Kinds of Representation Do Female Students Prefer in Their Science Learning?
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

MONDAY

- 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

MONDAY

- 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
- iv. Q-360-624-623-660: Learning About Ecological Diversity in Urban Wetlands: A Scientific Literacy Perspective
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

Group: Strand: 1 Symposium: Learning Science in Grades K-8: A New Research Synthesis (group 3)

Napoleon B1

Symposium:

Presider: Andrew Shouse

S-304-599-598-635: Learning Science in Grades K-8: A New Research Synthesis

Richard Duschl

Okhee Lee

Brian Reiser

Kathleen Roth

Jonathan Osborne

Andrew Shouse

MONDAY

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

MONDAY

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
- iv. P-140-756-755-790: Paper #4 PISA+ - A Norwegian Video Study. A Closer Look at Dialogue in Science Classes
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
- ii. P-578-1157-1156-1189: Understanding of Earth and Space Science Concepts: Strategies for Concept Building in Elementary Teacher Preparation
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 Teachers' Conceptions of Tides
Sedat Ucar
Kathy Cabe Trundle
Lawrence A. Krissek

MONDAY

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 Tunncliffe

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 Materials 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
- v. P-234-1183-1182-1215: Paper #5 Fostering Second-Graders' Scientific Explanations Using Educative Curriculum Materials: A Beginning Elementary Teacher's Perspective and Practice
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
- ii. P-435-1432-1431-1463: Assessment Practices in Science Curriculum Materials Research: Do Students Learn from the Pretest?
Robert Ochsendorf
Curtis Pyke

MONDAY

- iii. P-520-949-948-982: Portfolio Assessment in Science Education
Jeffrey S. Carver
William J. F. Hunter
- iv. P-106-1200-1199-1232: Evaluating Changes in Science Teaching Practice Using a Lesson Plan Analysis Instrument
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 Oggunniyi
- ii. P-489-910-909-943: Across Content and Pedagogy: Seeking Consistency in NOS Instruction in Teacher Education Programs
Deborah L. Hanuscin
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
- ii. P-455-817-816-851: An International Comparison of Children's Drawings:
Conceptions of the Environment in Singapore and the U.S.
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

Sheraton New Orleans Hotel • New Orleans, LA

MONDAY

- ii. P-271-458-457-494: Students' Conceptual Evolution in Electricity: An Empirical Validation of Cladistical Approach
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
Frédéric 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
- ii. P-466-927-926-960: Collaborative Dialogue: Exploring 4th Graders' Discussions of Science
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:

- i. P-71-313-312-349: Learning Science Through Research Apprenticeships: A Critical Review of the Literature
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

MONDAY

Group: Strand: 4 High School Physics in the US and Germany (group 61)

Napoleon B2

Strand Coordinator Organized Paper Set:

Presider: Irene Osisima

- 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

- iii. P-437-1002-1001-1035: Development of High School Students' Understanding of Heat and Thermodynamics Concepts Through A Contextual Approach
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

Group: Strand: 6 Tuxedo Junction: Improvisation with Formal and Informal Learning (group 55)

Napoleon A1

Symposium:

S-609-1469-1468-1499: Tuxedo Junction: Improvisation With Formal and Informal Learning

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
- iv. P-117-190-189-226: Preservice Science Teachers' Reflections About Application of Science Process Skills: A Case Study
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
- iv. P-270-1443-1442-1474: Teachers-in-Residence: Ongoing Professional Development for Elementary Teachers of Science
Karaen E. Levitt
Barabara M. Manner
Adria Scott

MONDAY

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
- ii. P-291-492-491-528: The Science Career Inventory (SCI): A New Tool to Access Career Choice Motivational Drivers in a Sustainable Minerals Processing Sector
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
- iv. P-681-1453-1452-1484: The Enhanced (E-DAST): A More Valid, Efficient, Reliable & Complete Method of Identifying Students' Perceptions of Scientists
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

MONDAY

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 Schwartz
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

MONDAY

- 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 Students' 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
- iii. P-512-1040-1039-1073: Provisioning Science Teacher Education for the 21st
Century: Co-Teaching and Cogenerative Dialogue
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
- ii. P-42-1015-1014-1048: Investigating the Understanding of Scientific Literacy Using Personal Meaning Mapping as an Interview Technique
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

MONDAY

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
- iii. P-673-1350-1349-1381: Success Stories of African American Undergraduates with Science, Technology, Engineering and Mathematics (STEM) Career Paths
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

MONDAY

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

TUESDAY

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

TUESDAY

Group: Strand: 3 Teacher Development (group 43)

Bayside B

Strand Coordinator Organized Paper Set:

Presider: Meredith Park Rogers

- i. P-501-1437-1436-1468: Influence of Personal Definitions of Science on Science Teaching Self-Efficacy and Classroom Practice
Deborah L. Hanson
- ii. 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
- iii. P-621-1194-1193-1226: Microcontexts and Practical Epistemology: Problematizing the Constructs of Lesson Enactment and Teacher Knowledge
Eric M. Eslinger
Kathleen E. Metz
- iv. P-604-1290-1289-1321: A Meta-Analysis: The Effects of Teaching Strategies on Improving Student Science Achievement
Carolyn M. Schroeder
Timothy P. Scott
Homer Tolson
Tse-Yang Huang
Yi-Hsuan Lee

TUESDAY

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

Napoleon B2

Strand Coordinator Organized Paper Set:

Presider: Karen Sullenger

- i. 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
- ii. P-66-223-222-259: Bridging Science Activities to Students: Discursive Approach for Analyzing Discourse in a Biology Classroom
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
- iv. P-338-580-579-616: Effects of Collaborative Urban Elementary School Teaching Experiences on Fellows' Beliefs, Attitudes, and Self-Efficacy and Elementary Teachers' Content Knowledge
Sherri L. Brown
Christy Rich

TUESDAY

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

TUESDAY

Group: Strand: 8 Effective Models of Professional Development (group 23)

Oak Alley

Strand Coordinator Organized Paper Set:

Presider: Reizelie Barreto

- i. P-619-1186-1185-1218: Professional Development for Primary Science Teaching in Thailand: Knowledge, Orientations, and Practices of Professional Developers and Professional Development Participants
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

TUESDAY

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
- iii. P-536-1484-1483-1514: Paper #3 Seeing, Doing, and Describing Everyday Science: Mapping Images of Science Across School, Community, and Home Boundaries
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

TUESDAY

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
- iii. P-78-137-136-173: Scientific Modeling for Inquiring Teachers Network (SMIT-N): The Relationship Between Elementary Teachers' Views of Scientific Modeling and Nature of Science
Orvil L. White
Valarie L. Akerson
Huseyin Colak
Khemmedwadee Pongsanon

TUESDAY

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

- i. P-579-1092-1091-1125: The Relationships Between High School Students' Cognitive Structures Regarding Nuclear Power and Their Informal Reasoning on Nuclear Power Usage
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

TUESDAY

- 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
- iv. P-336-578-577-614: Critical Thinking - Promotion and Conceptualization in the Multicultural Context of High School Science Teaching
Uri Zoller
Azaiza Ibtisam
Miri Barak
David Ben-Chaim

TUESDAY

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
- iv. P-45-92-91-128: Interest in Biology: A Developmental Shift Characterized Using Self-Generated Questions
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

TUESDAY

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 Teachers' Perseverance Learning Chemistry in a Professional Development Course
Andrea Gay
- ii. P-301-511-510-547: In-Service Science and Classroom Teachers' 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. Hirschbuhl
- iv. P-139-226-225-262: Elementary Science Teachers' Perceptions of Educational Reform in Relation to Science Teaching in Jordan
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
- ii. P-288-479-478-515: Paper #2 Developing Reformed Science Curricula for Higher Education and Professional Development Settings
Deborah A. Donovan
Brad K. Smith
- iii. P-288-481-480-517: Paper #3 Implementing Reformed Science Curricula for Higher Education and Professional Development Settings
Jacob Clark Blickenstaff

- iv. P-288-482-481-518: Paper #4 Evaluating Science Curricula for Higher Education and Professional Development Settings
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
- ii. P-173-1407-1406-1438: Paper #2 Cultural and Transformative Practices in Laboratory Activities
Wesley Pitts
- iii. P-173-1408-1407-1439: Paper #3 Cogenerative Dialogue as a Tool to Expand the Students' 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
- v. P-173-1415-1414-1446: Paper #5 The School, the Class, and the Laboratory: Intersecting Culture for Science Teaching and Learning
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

TUESDAY

- iii. P-239-771-770-805: A Framework of Electronic Mentoring Prompts for Promoting Learners' Scientific Reasoning Skills in a Text-Based Online Conference for Science Education
Nicos C. Valanides
Charoula M. Angeli
- iv. P-97-291-290-327: Haptic Feedback and the Structure of Observed Learning Outcomes
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
- iii. P-628-1274-1273-1305: A River Runs Through It: Integrated Field Studies, Environmental Education and The Nature Of Science
Charles J. Rop
Toni Sondergeld

Group: Publications Advisory Committee-sponsored Session: Publication in the Journal of Research in Science Teaching (group 145)

Grand Couteau

Publications Advisory Committee Sponsored Session:

Barbara Crawford, Chair of the Publications Advisory Committee, presides for this session.

P-769-1656-1653-1683: Publication in the Journal of Research in Science Teaching

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

- i. P-641-1250-1249-1281: Facilitating Transfer Through Physical Models: A Teaching Interview on Positron Emission Tomography (PET)
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

TUESDAY

- 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 Raphaella Lewis

- i. P-407-717-716-751: Student Perceptions of Evolution Instruction: Interrelationships of Understanding, Acceptance, and Learning Experiences
Lisa A. Donnelly
Mahsa Kazempour
Aidin Amirshokoochi
- 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
- iii. P-471-868-867-902: Comparing and Exploring the Perceptions of Science Role Models for Adolescent Girls
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
- iv. P-171-385-384-421: Comparing Experienced & Prospective Science Teachers' Reasoning About Assessments
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

TUESDAY

Group: Strand: 6 Researching Language, Learning and Engagement in Informal Science Institutions (group 54)

Napoleon A1

Symposium:

S-207-341-340-377: Researching Language, Learning and Engagement in Informal Science Institutions

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
- iv. P-648-1259-1258-1290: The Development of Preservice Elementary Science Teachers' Knowledge About Learners' Science Ideas
Julie Smithey
Elizabeth A. Davis

TUESDAY

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
- ii. P-224-368-367-404: Design Research on the Means of Support for Teaching and Learning Geological Observation
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
- iv. P-265-1360-1359-1391: Understanding the Effectiveness of Curriculum Materials Through Replication
William A. Watson
Curtis Pyke
Sharon J. Lynch

TUESDAY

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

- i. P-634-1231-1230-1262: Investigating Toxic Risk and Sharing Results Online: What Do Preservice Science Teachers Know about Science, Inquiry, and Literate Practices?
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

NARST Annual International Conference 2007

- 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

TUESDAY

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
- iii. P-418-742-741-776: Ninth Graders' Conceptual Understanding and Cognitive Engagement in Teacher-Centered and Student-Centered Technology-Enhanced Learning Environments
Ya-Ling Huang
Hsin-Kai Wu
- iv. P-238-394-393-430: Improved Science Assessments Using Student Perceptions
Rekha B. Koul
Darrell L. Fisher

TUESDAY

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
- ii. P-506-1473-1472-1503: Paper #2 Identifying Model-Based Teaching Strategies: A Case Study of Two High School Physics Teachers
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

Sheraton New Orleans Hotel • New Orleans, LA

TUESDAY

- 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
- iii. P-591-1138-1137-1170: Assessing Pre-Service Elementary Teacher Growth in Knowledge of Models
Susan A. Everett
Gail R. Luera
Charlotte A. Otto
- iv. P-643-1512-1511-1542: Making Sense of Lab Reports: A Detailed Study of Providing Feedback on Student Reports on Inquiry Activities
G. Michael Bowen
Anthony Bartley

TUESDAY

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 #1The 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
- iv. P-308-539-538-575: Paper #4 Development and Validity of the CISIP Classroom Observation Instrument (COI)
Gokhan Ozdemir
Elizabeth B. Lewis
Dale R. Baker
- v. P-308-540-539-576: Paper #5 Small Group Reflections of Secondary and Post-Secondary Science and Language Arts and ELL Faculty Upon Their CISIP Professional Development Experiences
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

TUESDAY

- ii. P-469-1141-1140-1173: Validity of Educative Design Heuristics Applied to SEPUP: Scaffolding Teacher Learning
Carlos C. Ayala
- iii. P-423-757-756-791: Evidence, Investigations and Scientific Literacy: What Are the Curriculum Implications?
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
- ii. P-467-909-908-942: RESPECT: What Urban Middle School Science Students Really Want
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
- iv. P-656-1588-1587-1617: Science Education, High-Stakes Accountability, and a Globalized Rural Economy: An Ethnography of a Math, Science, and Technology Elementary School
Heidi Carlone
Sue Kimmel
Christina Tschida

TUESDAY

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.

S-770-1658-1655-1685: Research in Science Education: How Well Does Our Research Build Upon, and Is Guided by Existing Research?

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

TUESDAY

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
- iv. P-326-1426-1425-1457: An Investigation of the Conceptual Change Process of Beginning College Level Physics Students Studying Newton's Laws
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

TUESDAY

- 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
- iii. P-402-725-724-759: Undergraduates' Alternative Conceptions of Chemistry Ideas: A Nigerian Case Study
Christiana N. Omoifo
Martina M. Irogbele

Group: Strand: 6 Informal Science Experiences: Impacts on Learning (group 49)

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 Teachers' 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

TUESDAY

- iii. P-369-647-646-683: Outcomes of Students' Long Term Learning in a Class Visit to a Science Center
Yael Bamberger
Tali Tal
- iv. P-692-1392-1391-1423: Learning in an Informal Context: A Summer Science Academy Experience
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
- iv. P-353-706-705-740: Profiling the Beliefs of the Forgotten Teachers: An Analysis of Intern Teachers- Frameworks for Urban Science Teaching
Irene Osisoma
Hedy Moscovici

TUESDAY

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
- ii. P-356-847-846-881: Paper #2 Professional Development in Schools and Its
Impact on School Policy
Robert Wallace
- iii. P-356-848-847-882: Paper #3 Confidence in Questions: Making Pedagogical
Tensions Explicit Through Professional Education in Science Courses
Jason Blonstein
Catherine Milne
- iv. P-356-849-848-883: Paper #4 Expanding Professional Development to the
Community:
Nina Leonhardt
- v. P-356-852-851-886: Paper #5 Achieving Excellence in Urban Science Teaching:
Evaluation and Retention
Pamela Fraser-Abder

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

TUESDAY

- 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 Teachers' 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
Ki Hyun Ryoo
Jamie Rodriguez

TUESDAY

Group: Strand: 13 Symposium on Inquiry and the Learning of Science Theories and Practices (group 184)

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

TUESDAY

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 Amirshokoochi

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

Q-40-641-640-677: Hands-On Science in a Standards Rich Environment

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

WEDNESDAY

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 Interns' 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

WEDNESDAY

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
- ii. P-317-739-738-773: Thinking Process Based Reflection Promotes Conceptual Change: In the Lesson of Three States of Matter Using Concept Mapping Software for Reconstructing Learning Processes
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
- ii. P-503-1393-1392-1424: Examining Plant Reproduction in Children's Science Trade Books
Elisabeth E. Schussler

WEDNESDAY

- 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
- v. P-517-1310-1309-1341: Paper #5 Joining an Extra School Science Program: Is There Any Effect on Classroom Science Experiences?
Marie Cashion
Lesley Balcom
Essie Lom
Meg McCallum

WEDNESDAY

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
Nantararat 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 Teachers' 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

WEDNESDAY

- 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

WEDNESDAY

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:

- i. P-396-718-717-752: Paper #1 Teacher Learning From Videocases of Science Teaching: A Conceptual Framework
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 Schville
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 Schville
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

WEDNESDAY

**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
- ii. P-398-1339-1338-1370: Preservice Science Teachers' Nature of Science Instruction and Its Impact on Pupil Learning
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
- iv. P-378-1498-1497-1528: Towards a More Inclusive Account of Authenticity in School Science Inquiry
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

Sheraton New Orleans Hotel • New Orleans, LA

WEDNESDAY

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
- ii. P-784-1690-1687-1717: Paper #2 Professional Development of Science Teachers: A Global Perspective
Pamela Fraser-Abder
- iii. P-784-1691-1688-1718: Paper #3 Issues and Trends in Science Teacher Professional Development in Europe
Justin Dillon
- iv. P-784-1692-1689-1719: Paper #4 Three Models of Professional Development
Avi Hofstein
Rachel Mamlok-Naaman
- v. P-784-1693-1690-1720: Paper #5 Professional Growth Through Engagement: Overcoming Bureaucratic and Personal Barriers Associated With Top-Down Models of Professional Development.
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

WEDNESDAY