President’s Message
Contributed by Lisa Martin-Hansen

Re-Envisioning the Association for Science Teacher Education

Dear ASTE Colleagues,

I hope the spring semester has been positive and productive for you and your colleagues.

As the ASTE Board is gearing up for our summer board meeting, we are continuing our strategic planning process by examining data regarding our organization as we consider next steps in our Association plans. As ASTE consists of those of us who educate teachers of science, our primary goal/mission is to promote excellence in science teacher education world-wide through scholarship and innovation. ASTE colleagues can gather to learn from each other about strategies, research, and opportunities for collaboration in endeavors where we are teaching future or current science teachers. Our membership includes a
diverse group of professionals including, among others, teacher educators, scientists, science coordinators and supervisors, and informal science educators who prepare and provide professional development for teachers of science at all grade levels.

While having a varied membership is a strength of our organization, the data we are looking at has shown that many of the activities associated with our organization have been focused heavily upon research and less upon sharing strategies and collaborative opportunities that were previously equally emphasized. We have heard the questions of, “How are we different from NARST?” Others have asked, “How are we supporting members who are not at research extensive universities?” For instance, how might a scientist or a new science educator who is teaching science teaching methods at a small college learn more about exemplary science teaching methods? How might informal science educators who are providing science experiences for preservice teachers at a workshop, find innovative and more effective ways of connecting with their participants? Where are our colleagues who teach at Historically Black Colleges and Universities (HBCUs) or primarily Hispanic Serving Institutions (HSIs)?

The ASTE has heard you. And while there is continued emphasis on our research journal the Journal of Science Teacher Education, ASTE is working to create additional spaces for professional development, conversation, and support for all of our colleagues. Research is important. It informs us of how effective or ineffective particular strategies or programs may be in terms of our education of science teachers. However, professional development in teaching strategies, innovative program design, and innovative course design are also important to our membership.

In the past year, our Membership and Participation and Equity Committees along with the ASTE Board looked closely at some of the issues and made recommendations that were quickly implemented:

- We have encouraged the submission of workshop and conference session proposals with additional emphasis on experiential sessions, syllabus sharing and workshops.
- We have expanded the type of publication experience recognized as service to ASTE on our election rubrics to include our affiliate journals of NSTA, in addition to JSTE and the ASTE Newsletter, to acknowledge the importance of those members who publish practitioner articles rather than research articles.
- We have begun to identify smaller colleges and universities that have teaching programs including special effort to identify HBCUs and HSIs in order to invite colleagues to present and participate at ASTE.
- A grassroots effort to establish a Small Colleges and Programs Forum took place and will shortly be in full force.
• We have asked the Membership and Participation Committee to draw a 500 mile radius (805 km) around the next conference site and to locate contacts from teacher preparation institutions in that area. Additionally, some regions have begun to systematically identify contacts at colleges and universities with teacher preparation programs. These individuals will be contacted with the call for proposals for the upcoming ASTE conference.

• Work has begun with international faculty to better establish an International Group (technically a region – although we note the strange use of the term “region” for international participants) for formal representation at ASTE.

And as one might say, “What might ASTE do for me?” but instead asking “What might I do for ASTE?” there are opportunities and need for your involvement now.

For instance, in the regional components of ASTE, we could begin to identify individuals at colleges, universities, or other entities, which prepare science teachers. We also need a listing of informal science educators who provide outreach to science teachers. Once we identify those who help prepare science teachers, we can continue to reach out to our colleagues who are currently not active within our association. If we share that information with our Executive Director, Bob Hollon, ASTE can contact these individuals with our calls for papers and presentations.

If you can imagine a group (another forum perhaps?) that should exist around a particular topic or need, you may follow in the footsteps of the Small Colleges and Programs Forum. Perhaps we need or want a dedicated ASTE listserv around that topic? Perhaps a group of colleagues would like to collectively put together an additional meeting, or a workshop at our annual international conference? Information at the ASTE website http://theaste.org and our executive director, Bob Hollon, can provide details regarding ways in which particular groups may wish to be involved. Personally reaching out to our colleagues at Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and other institutions with underrepresented individuals by sharing items from our listserv that could help to connect all of us.

It is time to re-envision how we can support each other in our continued development as science teacher educators.

With warmest regards,

Lisa Martin-Hansen

ASTE President and ASTE liaison to the National Science Teachers Association
2016 ASTE International Conference
Contributed by David Crowther, Melissa Jurkiewicz, Camille Stegman, John Cannon, and Adam Kirn (Conference Committee)

Call for Proposals
Reno, NV, January 6-9, 2016
Forging New Trails towards 21st Century Science Education

The Association for Science Teacher Education (ASTE) promotes leadership and support for professionals involved in the education and development of teachers of science at all levels. ASTE advances practice and policy through scholarship, collaboration, and innovation in science teacher education. Our members include science teacher educators, science content faculty, curriculum developers, informal science educators, and others involved with the education of science teachers.

Proposals should address issues concerning science teacher education; these can be a research study, philosophical essay, position paper, innovative idea, etc. Formats include traditional paper presentations, themed paper sets, posters, roundtables, syllabus sharing, and experiential sessions. The theme for the 2016 conference is based upon forging new trails in science education that include Science, STEM, and Engineering and associated disciplines as a collaboration for teaching and learning science in the 21st century. Although the traditional strands of the ASTE conference will apply, we are also looking for new and innovative proposals that push the boundaries of traditional science education.

The priority deadline for proposals is midnight July 10, 2015. Proposals received after the deadline will only be considered on a space-available basis. For more information or to submit a proposal, please go to the ASTE website at http://theaste.org/meeting/proposal-submission/. If you have questions, please contact the conference co-chairs at conferencechairs@theaste.org.
Please mark your calendars to attend the 2015 MA-ASTE Regional Conference next October 22-24 at Salt Fork Resort and Conference Center in Lore City, Ohio.

Please click on the following link to download the Registration Form and Proposal Request Form, and to find out how you can make your reservation for a lodge room: http://ma.theaste.org/meetings/2015-mid-atlantic-aste-regional-conference/ Special thanks go out to our 2015 Regional Conference Planning Committee: Karen Irving, Christopher Atchison, Donna Farland-Smith, Kathy Malone, Lin Ding, Mandy Smith, and Kate Mollohan!

Also, please click on the following link to join our MA-ASTE Facebook group page: https://www.facebook.com/groups/1400991133530421/ This Facebook group page was created for the exchange of ideas and promotion of high-quality science teacher education, both pre-service and in-service. Special thanks go out to Eric Pyle and Christopher Atchison for volunteering to set-up and moderate our Facebook group page!

Lastly, if you are a graduate student planning to attend the 2015 MA-ASTE conference, please click on the following link for information regarding the 3rd annual MA-ASTE Graduate Student Presentation Award at http://ma.theaste.org/mid-atlantic-aste-graduate-student-research-presentation-award/
I am so excited to tell you that CITE Journal Science Education Section is publishing new articles. Look for upcoming articles about iPad use, the Next Generation Science Standards, and serious games! And consider submitting your manuscript at the journal website: http://www.citejournal.org

The CITE Journal – Contemporary Issues in Technology and Teacher Education is one of the oldest Open Source journals and is a collaboration of the leading education organizations in the country. The CITE Science Education Section is a collaboration between ASTE and the Society for information Technology and Teacher Education. We accept manuscripts on science education and technology combined.

We Need Reviewers!!! I need reviewers, we have great reviewers, but we need more! I am especially in need of reviewers with interest in elementary and middle school science education applications and earth science or geological interests. I have some great manuscripts submitted that need your input! Reviewers need to be members of ASTE but this includes graduate students and I try to assign at least one graduate student to each manuscript. If you are interested in reviewing, please email Theresa Cullen, CITE Science Education Section Editor at tacullen@ou.edu and I will walk you through the steps of signing up!

Manuscript Information
Manuscripts should directly address technology within science teacher education. Papers may focus on science teachers at any career stage including pre-service, new, continuing, or teacher leaders and any grade level including college science science teachers. Manuscripts that examine how technologies can improve programs, courses, or professional development as well as collaboration and partnerships are welcome. Papers that describe innovative approaches to technology enhanced science teacher education are specifically encouraged.

Submission Guidelines
1. Go to http://www.citejournal.org
2. Click on Submissions
3. Login with your AACE login information or create a new login.
4. Select ‘submit article’. Be sure to select CITE (science), as the journal.
Using the National Science Teachers Association (NSTA) online portal with Pre-Service Teachers
Contributed by Flavio Mendez

What if professors could select from existing collections of interactive web modules, simulations, lesson activities, e-chapters, and podcasts to create an engaging suite of content that is wrapped in an integrated community for sharing, rating, and discourse with badges, points and leader boards to engage pre-service teachers’ learning?

The purpose of the NSTA Learning Center (http://learningcenter.nsta.org) is to enhance the personal learning of teachers by providing a suite of tools, resources, and opportunities to support their individual long-term professional growth based on their unique learning needs and preferences and within a professional learning community.

Over the past few years, professors at over 70 institutions of higher education have opted to use electronic resources from NSTA like journal articles, book chapters, interactive science modules, and lesson plans from the Association’s online portal called the NSTA Learning Center (NSTA LC) as an e-textbook when teaching pre-service teachers courses like elementary and secondary methods and other subject matter courses.

Working with NSTA staff and at no cost to the professors or their institution, course instructors can create a class landing page in the Learning Center and assemble collections of resources from the over 12,000 resources available online. In addition to using the resources in the Learning Center, instructors are able to upload their own resources or URLs from other web sites of interest to share with their students.

To track the student activity in the Learning Center, professors access their class administration dashboard which keeps track of all of their students’ online activity. Here is what professors have said about the NSTA Learning Center:

“One of the main advantages of using the NSTA LC as an e-text for teachers is that they become familiar with this resource and they can subsequently return to and use once they are in their own classrooms during their professional careers.” K. Sparrow

“The department chair told me that the NSTA SciPacks offer more in-depth content than what they had before and the students in this course are scoring about a mean of 18% above his other more traditional course.” K. Miller

Bundled with the e-Textbook is one year student membership to NSTA. The cost of the 1-year e-Textbook subscription and the student membership is $99 per student. Professors may choose instead a six-month e-Textbook subscription option and the student membership for $72 per student.

For more information about this opportunity, visit: http://learningcenter.nsta.org/etextbook
In February of 2013 a small conference was held at Pusan National University in Busan, Korea to explore the benefits of argument-based inquiry in science education classrooms. Argument-Based Inquiry centrally locates construction and critique of knowledge through emphasis on the epistemological framework of argument by engaging students in posing questions, gathering data, and generating claims supported by evidence. In doing so, it seeks to build students’ grasp of disciplinary practices while simultaneously constituting an understanding of disciplinary big ideas. Recent reform efforts such as Common Core and Next Generation Science Standards call for such immersion in and integration of disciplinary practices and concepts, yet there are still many important theoretical and practical constraints to widespread adoption and implementation of such pedagogy. The Second International Conference on Argument-Based Inquiry seeks to bring together researchers in science education, literacy, measurement, cognitive psychology, and mathematics education in a working conference to collectively examine these constraints by exploring the following key questions:

- What resources are critical for students to engage and optimize learning in argument-based environments, how do they manifest in different content domains, and how do these resources contribute to student success in ABI environments?

- Should we expect to see aspects of student learning transfer from these environments to other environments? What might those aspects of student learning be? What might be the characteristics of the learning environment that drive that transfer?

The conference will host paper sessions and a graduate poster session that will serve as an opportunity for new scholars to engage with established researchers across a variety of fields. Sessions are structured to emphasize conversation among participants in order to stimulate trans-disciplinary perspectives on the critical questions raised throughout the conference. We welcome researchers, graduate students, and teachers to participate in the conversations as we seek to establish an on-going network of researchers that can support one another and address future research, development, and publication opportunities. For more information please contact Krenny Hammer, ABI Conference Support Supervisor, at khammer@wsu.edu or visit the conference website at http://abic.education.wsu.edu/.
**NGSS and edTPA Crosswalk Available**
Contributed by Erica Brownstein

A crosswalk showing the connection between the Next Generation Science Standards (NGSS) and the secondary science edTPA is available. The document includes how NGSS practices are found in edTPA rubrics and writing prompts. It is located on the secure portion of the edTPA website: [http://edtpa.aacte.org](http://edtpa.aacte.org) in the Resource Library. Any faculty using edTPA has access.

**Free Online Training on Digital Dissection Software**
Contributed by Samantha Suiter

ASTE members are offered personalized interactive online training on computer-based animal dissection software. The free training sessions will cover educational efficacy, economic benefits, ethical considerations and current laws and policies regarding the use of animals in science education. Participants will gain hands-on experience with popular digital dissection software programs.

Training is led by Samantha Suiter, a Science Education Specialist at People for the Ethical Treatment of Animals (PETA) who is a college biology instructor and member of ASTE, HAPS, NABT, and NSTA. Please contact Samantha at SamanthaS@peta.org or 843-771-2394 to set up a training session.

[Note from the Editors: Samantha presented a webinar for our NSTA student chapter that provided the benefits and challenges of both physical dissections and digital dissections. The students enjoyed the presentation and found it to be a completely unbiased presentation.]
American Museum of Natural History Resources
Contributed by Yael Wyner

For teacher educators teaching nature of science, science methods, or environmental science topics, data and media centered case studies produced by the American Museum of Natural History are now available online. These cases use published scientific data to explore the unintended consequences of daily life activity on ecological function. Controlled testing showed that they improve student learning of ecological function and environmental issues. The website includes three modules and additional case study materials each centered on published scientific data scaffolded for accessibility. The three case studies are:

1. How might being able to drive between Los Angeles and Las Vegas in just four hours put the bighorn sheep at risk?
2. How might snowy and icy roads affect Baltimore area's water supply?
3. In what ways have people caused the Chesapeake Bay to become more vulnerable to algal blooms and dead zones?

M. Dias, C.J. Eick, L. Brantley-Dias (Eds.)

Science Teacher Educators as K-12 Teachers
Practicing what we teach

Series: ASTE Series in Science Education

- Makes a unique and powerful contribution to science teacher education by bridging the long-standing research-practice gap
- Presents several different but equally valid arrangements whereby teacher educators have returned to K-12 teaching
- Identifies common themes and implications for science teacher education and science teaching practice

Science teacher educators prepare and provide professional development for teachers at all grade levels. They seek to improve conditions in classroom teaching and learning, professional development, and teacher recruitment and retention.

Science Teacher Educators as K-12 Teachers: Practicing What We Teach tells the story of sixteen teacher educators who stepped away from their traditional role and entered the classroom to teach children and adolescents in public schools and informal settings. It details the practical and theoretical insights that these members of the Association of Science Teacher Educators (ASTE) earned from experiences ranging from periodic guest teaching to full-time engagement in the teaching role.

Science Teacher Educators as K-12 Teachers shows science teacher educators as professionals engaged in reflective analysis of teacher beliefs and experiences with teaching children and adolescents science. With their ideas about instruction and learning challenged, these educators became more aware of the circumstances today's teachers face. Their honest accounts reveal that through teaching children and adolescents, teacher educators can also renew themselves and expand their identity as well as their understanding of themselves in the profession and in relation to others.

Science Teacher Educators as K-12 Teachers will appeal to all those with an interest in science education, from teacher educators to science teachers, as well as teacher educators in other disciplines. Its narratives and insights may even inspire more teacher educators to envision new opportunities to serve teachers, K-12 learners and the local community through a variety of teaching arrangements in public schools and informal education settings.
K.C. Wieseman, M. Weinburg (Eds.)
Women’s Experiences in Leadership in K-16 Science Education Communities, Becoming and Being

Series: ASTE Series in Science Education

- Discusses why women’s leadership within science education is largely invisible
- Contains significant stories around the feminine not as gender but as construct, a quality in all of us
- Discusses the power/promise of feminine approaches to transform traditional leadership cultures
- Discusses relational ways of knowing as theoretical foundation
- Determines that anyone can lead and each of us should lead

A discourse on women’s leadership within science education has, until now, been largely invisible in book form. This, therefore, is the first book to address women’s leadership within science education.

The book embraces relational ways of knowing as a foundation for leadership and takes courageous steps by exposing our innermost tensions, dilemmas, and feelings about leadership, making them available to others. The power/promise of feminine approaches to transform traditional leadership cultures is also addressed.

The authors believe that anyone can lead, regardless of position, title, years of experience or age. They also believe that each of us has a responsibility to provide some leadership and direction for the shared endeavours of which we are part.

The purpose of the book is to inspire and guide educators and academics in K-16 science education, as well as individuals in other professions, as their leadership skills develop. The leadership activities provided offer guidance and/or concrete ways to delve into issues of leadership.
A. Bodzin, B. Shiner Klein, S. Weaver (Eds.)

**The Inclusion of Environmental Education in Science Teacher Education**

Series: ASTE Series in Science Education

- Examines and discusses environmental education foundations and pedagogical principles
- Informs about the historical and philosophical underpinnings of environmental education as well as current trends
- Includes case studies that highlight the teaching and learning of environmental education content and concepts in science teacher education
- Discusses the integration of technology to promote the teaching and learning of environmental education in science teacher preparation

In the coming decades, the general public will be required ever more often to understand complex environmental issues, evaluate proposed environmental plans, and understand how individual decisions affect the environment at local to global scales. Thus it is of fundamental importance to ensure that higher quality education about these ecological issues raises the environmental literacy of the general public. In order to achieve this, teachers need to be trained as well as classroom practice enhanced. This volume focuses on the integration of environmental education into science teacher education. The book begins by providing readers with foundational knowledge of environmental education as it applies to the discipline of science education. It relates the historical and philosophical underpinnings of EE, as well as current trends in the subject that relate to science teacher education. Later chapters examine the pedagogical practices of environmental education in the context of science teacher education. Case studies of environmental education teaching and learning strategies in science teacher education, and instructional practices in K-12 science classrooms, are included.

This book shares knowledge and ideas about environmental education pedagogy and serves as a reliable guide for both science teacher educators and K-12 science educators who wish to insert environmental education into science teacher education. Coverage includes everything from the methods employed in summer camps to the use of podcasting as a pedagogical aid. Studies have shown that schools that do manage to incorporate EE into their teaching programs demonstrate significant growth in student achievement as well as improved student behavior. This text argues that the multidisciplinary nature of environmental education itself requires problem-solving, critical thinking and literacy skills that benefit students’ work right across the curriculum.
Reimagining the Science Department
Contributed by Todd Campbell

Reimagining the Science Department (2015), co-authored by Dr. Wayne Melville, Doug Jones, a Lakehead District School Board science department Chair, and Dr. Todd Campbell from the University of Connecticut, is now available in print format and as an e-book.

Posing the question, "What if you could change the department-level factors that don’t support teaching and learning?,” Reimagining the Science Department is described by the National Science Teachers Association as a book that offers a rich historical perspective alongside strategies, practitioner vignettes, and related research that can be used immediately by those in science departments.

"We wrote the book to assist science chairs, teachers, and administrators in beginning the task of reimagining the science department as a place where teachers are encouraged to question both their beliefs about science and the teaching and assessment strategies that develop in response to those beliefs. Only when teachers have the freedom and capacity to question their beliefs, and develop their teaching and learning, can real improvements in the teaching of the practices of science be sustained," Dr. Melville said.

The NSTA further notes that the five-chapter book is a "must-read resource for chairs and those who aspire to become chairs, but [is] also useful for school administrators and school board members who are committed to developing a department in which the practices of science are taught for the benefit of all students."

For more information on the book, please click here.
Applications of Visual Data In K-16 Science Classrooms
Contributed by Kevin Finson

This book examines visual data use with students in PK-16 as well as in pre-service and in-service science teacher preparation. Each chapter was written by members of ASTE, and includes discussion about the current state of the art with respect to science classroom application and utilization of the particular visual data targeted by the author(s), discussion and explanation about the targeted visual data as applied by the author in his/her classroom, and of visual data as a diagnostic tool, its use as an assessment tool, and discussion of implications for science teaching and/or science teacher preparation.

For more information on the book, please click here.

CONTENTS:

SECTION I: PRE-K THROUGH ADULT.
Planetarium-Based Science Visualizations to Support Complex Science Learning for First-Year Middle and High School English Learners, Dispositions of Scientists in Mainstream Films: The Extraordinary Person Called a Scientist, Navigating Visual Data Literacy and Inscriptions in the Classroom

SECTION I I: ELEMENTARY (K–8).
Utilizing Visual Data with Tablet Technology in the Primary (K–3) Science Classroom, Using Visual Data in a Professional Development Program to Improve Science Teaching and Learning in K–6 Classrooms, Teaching Children to Think Critically about Scientists: Examining the Relationship between Representations of Scientists, Process Skills and Visual Thinking Strategies (VTS), Astronomy Seen in a New Light: Visualizations for Teaching Elementary and Middle School Students

SECTION I I I: HIGH SCHOOL.
How High School Students Construct or Create Animations about Water Boiling, Photographs as Static and Concrete Visual Representation to Connect Prior Knowledge and to Stimulate Discussions in Science Classrooms, Understanding the Visual Data of Earth’s Ellipse and Axis Tilt, Using Web GIS to Promote Geospatial Thinking and Reasoning Skills

SECTION IV: COLLEGE LEVEL.
Using Visual Data with Pre-Service Teachers: From Awareness to Application, Role of Visual Data in Effectively Teaching the Nature of Science, Student-Centered Visualization in General Education Introductory Geoscience Classes, Drawing Scientists Together: University Faculty’s Perceptions of Art and Perceived Barriers to Constructing and Implementing Visual Data in Science Classrooms.
Newsletter Information

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All members are invited to submit items.

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