



The Math–Science Connector



Report of the 2019 Fall Annual Convention

What a fabulous 118th Annual School Science and Mathematics Association Convention! About 170 SSMA family members gathered at the beautiful Hilton Hotel in the center of Salt Lake City and spent time catching up on events and happenings of the last year, exploring the restaurants and

shops in the downtown area and the beautiful natural wonders just beyond the city, visiting the Temple Square, attending a rehearsal of the famed Mormon Tabernacle Choir, and, of course, presenting, participating, and learning from each other during incredible sessions. In keeping with the emphasis on growing our family, of the 175 convention attendees, 64 new members joined us in Salt Lake City. Additionally, members mentored, shared, and learned both with and from 48 graduate students – 36 of whom were first time attendees.

Special thanks go to Elaine Tuft, Lynda Williams, and the entire Program Committee from Utah Valley University for their work hosting and organizing this year’s convention. Attendees had the opportunity to enjoy over 140 unique sessions including 5 Presidential Exchange sessions, 74 research sessions, 52 regular sessions, 9 workshops, 2 journal-related sessions, and 2 special sessions. The General Sessions led attendees on a fascinating journey from black holes to gardens and bee hives. Dr. Maria Rodriguez introduced us to a “Hitchhikers Guide to Teaching General Relativity” with a guided tour through space-time, quantum gravity, and, in particular, black holes. Dr. Rodriguez served as an incredible tour guide who made the complex concepts understandable while also introducing us to a fabulous term – spaghettification. Ms. Sarah Duke shared her personal journey from a family farm in the Midwest to becoming the Founder and GEO of GrowBrighter and Alta Bloom Farms. Ms. Duke’s passion for sustainable farming was evident, as was her desire to educate and encourage all individuals to grow their own food and understand food sources. As an added highlight, Ms. Duke shared information about the hotel’s on-site bee hives, making all of us clamor for the hotel’s honey-based dishes.

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Additionally, the accompanying Presidential convention addition, but collaborating with other common to all involved



Presidential Exchange sessions and Exchange Conversation were a new they proved to be an excellent venue for organization leaders on topics and issues science and mathematics groups.



Outstanding Early Career Scholar
Amy Corp

At Friday's Business Meeting, I was honored to present this year's Outstanding Dissertation Award to Dr. Audrey Meador, Outstanding Early Career Scholar Award to Dr. Amy Corp, and the Award for Excellence in Integrating Science and Mathematics to Dr. Margaret Mohr-Schroeder.



Dissertation Award
Audrey Meador



Award for Excellence in Integration Science & Mathematics
Margaret Mohr-Schroeder



Six graduate students were the recipients of the John Park Student Travel Award, including Cassandra Cartmill, Shelly Wu, Tanner Bryan, Jessica Marcolini, Brandon Aigner, and Drew Gossen.

John Park Travel Awardees



George C. Mallison Award
Alan Zollman

A special highlight of the convention was the presentation of the George G. Mallinson Award to Dr. Alan Zollman, Indiana University Southeast and past president of SSMA. The Mallinson Award is presented to an educator who exemplifies the utmost lifetime level of teaching, service, and research, and in his presentation, Dr. Zollman continued to both teach and serve as he encouraged and invited attendees to take time to reflect.

The Business Meeting also offered an opportunity to thank Dr. Shelly Harkness for her many years of service as the Journal Co-Editor and to provide special recognition to Dr. James Elander – SSMA President in 1969.



SSMA President 1969
Jim Elander

Congratulations to all!



Journal Co-Editor
Shelly Harkness

The proceedings of the 2019 Convention have been published and are available, along with the proceedings of the previous five conventions, at <https://ssma.memberclicks.net/convention-proceedings>. I encourage you to take time to review the fabulous work of our membership. Special thanks to Rayelynn Brandl, Georgia Cobbs, and Melanie Shores for their work as proceedings editors.

Your SSMA Board of Directors met before and after the convention to discuss and address association business. Welcome to our new board members Christa Jackson, President-Elect, Craig Schroeder, and Oscar Chavez, and thank you to departing board members, Toni Ivey and Christa Jackson, for your years of service to the association. Finally, special thanks to SSMA Executive Directors Toni Ivey and Stephanie Hathcock for your assistance and efforts in making our convention such a wonderful event. This outstanding group of leaders, along with Journal Editors Carla Johnson and Shelly Harkness, and Newsletter Editor Georgia Cobbs, work diligently to assure that the association continues to thrive.



Plans for our 119th convention reunion are well under way, and I look forward to seeing all SSMA family members in Minneapolis, Minnesota on November 5 - 7, 2020. Christa Jackson will serve as Program Chair, and remember that it's never too early to begin making your plans to attend. I encourage you to keep an eye on your SSMA email and SSMA website for convention information (Call for Proposals will be available on January 6, 2020, and the Proposal Submission Deadline is March 20, 2020). I also encourage all members to check out our updated [SSMA website](#) launched on December 1! We have the same web address, but the new website enhances the ease of function, maneuverability, and usefulness. Special thanks to Website Task Force members who joined me in working diligently to assure a highly functioning, aesthetically pleasing website – Toni Ivey, Stephanie Hathcock, Sandi Cooper, and Stacy Reeder.

See you in Minneapolis!

Suzanne M. Nesmith

SSMA President
Science Education
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*Board of Directors
Toni Ivey*

*Thank You to
Our Outgoing
Board
Members
2016-2019*



*Board of Directors
Christa Jackson*

Some snapshots of our 2019 Convention



School Science and Mathematics, the SSMA Journal

Dr. Carla Johnson, Editor
cjohns26@ncsu.edu

Dr. Shelly Harkness, Co-Editor
harkneml@ucmail.uc.edu

Please see an issue of the Journal or visit <http://www.wiley.com/bw/journal.asp?ref=0036-6803> for more information about article submission. The journal's focus is on data-based research manuscripts on K-12 teaching or learning of science or mathematics, or their integration.

Manuscript submissions for *School Science and Mathematics* are now online through the ScholarOne website at <http://mc.manuscriptcentral.com/ssm>. Hard copy submissions are no longer accepted. See the current issue of the journal for information about calls for manuscripts.

The image displays two side-by-side screenshots of web browsers. The left browser window shows the Wiley-Blackwell website for 'School Science and Mathematics'. It features a green header with the Wiley logo and navigation tabs for 'HOME', 'SUBJECTS', and 'ABOUT WILEY'. Below the header, there is a 'Journal Home' section with links for 'Journal Home', 'Aims & Scope', 'Author Guidelines', 'Editorial Contacts', 'View content online', and 'Access/permissions'. A 'Submit an article' button is visible. The right browser window shows the ScholarOne Manuscripts submission portal. It has a 'Log In' section with fields for 'User ID' and 'Password', and a 'Log In' button. There is also a 'New User?' section with a 'Register here' link and a 'Password Help' section with an 'e-mail Address' field.

If you would like to be a Reviewer, please contact the Editors (cjohns26@ncsu.edu or harkneml@ucmail.uc.edu). Reviewers prepare comments, reviews, and recommendations for 1-2 manuscripts a year in their area of specialization. Reviewers are needed in all areas of expertise, especially teacher preparation and professional development.



Top 10 Articles Downloaded Through August 2019

Volume	Issue	Article Title	Full Text Downloads 2019
112	1	What Is STEM? A Discussion About Conceptions of STEM in Education and Partnerships	2,018
112	1	Learning for STEM Literacy: STEM Literacy for Learning	646
119	1	Systems thinking and mathematical problem solving	640
102	6	Measuring Reform Practices in Science and Mathematics Classrooms: The Reformed Teaching Observation Protocol	462
101	8	Using Sociocultural Theory to Teach Mathematics: A Vygotskian Perspective	453
106	4	Mathematics Anxiety and Preservice Elementary Teachers' Confidence to Teach Mathematics and Science	447
101	5	Teaching Science in Higher Education: Faculty Professional Development and Barriers to Change	424
117	1-2	Developing a Conceptual Model of STEAM Teaching Practices	407
113	5	The Effects of a STEM Intervention on Elementary Students' Science Knowledge and Skills	405
119	4	The impact of an out-of-school STEM education program on students' attitudes toward STEM and STEM careers	401



Join us
for the
**2020
SSMA
Convention**
November 5-7, 2020

Minneapolis, Minnesota

Venue
Millennium Hotel
1313 Nicollet Mall,
Minneapolis, MN 55403

Call for Proposals available: Monday, January 6, 2020
Proposal Submission Deadline: Friday, March 20, 2020
Proposal Acceptance Decision: Friday, May 29, 2020
Convention Chair: Christa Jackson (jacksonc@iastate.edu)

SSMA School Science and Mathematics Association
Founded in 1901



**Want to serve on the Board or
nominate someone
to serve?**

***Nominations for SSMA Board of
Directors***

To nominate a candidate to serve on the SSMA Board of Directors, a petition of twenty-five (25) signatures can be sent to Sandi Cooper, Chair of the Nomination and Election Committee. Self-nominations are accepted as well.

Please contact:

Sandi Cooper

Mathematics Education

School of Education Baylor University Waco, TX

Sandra_Cooper@baylor.edu

Call for SSMA 2020 Awards

Deadline for submission of nominations: March 15, 2020

The SSMA Awards Committee invites the membership to submit nominees to be considered for the following awards:

- **GEORGE G. MALLINSON DISTINGUISHED SERVICE AWARD**

The award is given to those who have been a member of SSMA for at least ten (10) years and who have shown substantial participation and leadership in SSMA activities such as paper presentations at meetings, committee work, membership work, reviewing for journal, and so forth. Nomination is limited to SSMA members who are nominated by a current member of SSMA.

- **AWARD FOR EXCELLENCE IN INTEGRATING SCIENCE AND MATHEMATICS**

The award is given to a person or group who/which has fostered, promoted, and extended the integration of mathematics/science. The nominee should be a person or group who is active in science/mathematics education and in the development of curricula for the preparation of teachers, educational research, or other activities of significant educational value; thereby showing an impact on science/mathematics education. The competition is open to non-SSMA members but all applicants must be nominated by an SSMA member.

- **SSMA CONNECTIONS AWARD**

The nominee should be a person working in K-12 who has been a leader of an exemplary teaching and learning project that is school-based and focused on connections between science and mathematics.

- **OUTSTANDING EARLY CAREER SCHOLAR AWARD**

The nominee should be a person, within five years of receiving a doctoral degree, with an exemplary and productive program of research related to science and/or mathematics education. The nominee must be an SSMA member in good standing for at least 1 year prior to the submission of an application.

- **SSMA OUTSTANDING DISSERTATION AWARD**

The Award is given for dissertations related to science education, mathematics education, or integrated science and mathematics education. Competition is open to non-members, but all applicants must be nominated by an SSMA member. The nominee's dissertation must have been completed within the last three years.

Criteria details for each award can be found online at <http://www.ssma.org/award-descriptions-and-requirements>. Any member of SSMA is free to nominate a person(s) satisfying the criteria noted above.

Send materials (for each award) electronically to

awards@ssma.org

prior to March 15, 2020.

About Our Organization...



**TONI IVEY, PH.D. &
STEPHANIE HATHCOCK, PH.D.**
CO-EXECUTIVE DIRECTORS
School Science and Mathematics Association
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Membership in the School Science and Mathematics Association is open to any person who supports the objectives of the Association, who has paid membership dues, and completed an application.

Benefits of SSMA Membership include:

- Membership in an association encompassing both science and mathematics teaching and learning.
- 8 issues of the official journal *School Science and Mathematics*.
- 2 issues of the SSMA newsletter *The Math-Science Connector*.
- Opportunities to submit presentation proposals for the Annual Convention.
- Voting privileges for Association business and election of officers.
- Opportunities to serve on an SSMA Committee or Leadership Team.

Additional information about SSMA is available at our website (<http://www.ssma.org>) or by contacting **Toni Ivey or Stephanie Hathcock** (office@ssma.org).

To contribute news items for the SSMA newsletter (*The Math-Science Connector*), please contact **Georgia Cobbs** (georgia.cobbs@umontana.edu)

Georgia Cobbs Newsletter Editor

