

THE GER EXCHANGE

"Promoting high quality scholarly research in geoscience education."

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Post 2015 GSA: Message from the President

Happy Fall, GER Community!

Many of us just returned from the Geological Society of America 2015 Annual Meeting in Baltimore, Maryland. It was an exciting meeting! One of the highlights was the session proposed by your GER officers: T83. Methods for Conducting Research about Teaching and Learning in the Geosciences. Many exciting talks were submitted to this session, and in fact, we had the unfortunate challenge of picking and choosing which talks could remain in the session. What a good problem to have! We invited talks from Julie Sexton, Glenn Dolphin, and Kim Kastens to offer broad perspectives on quantitative and qualitative methods. There were exciting talks that explored a mixed methods approach to

various research questions. A few talks explored new approaches for GER. For example, Lisa Lundgren gave a talk describing their use of social media as a research tool to explore engagement in a paleontology community. The GER officers were thrilled to see the room was nearly full most of the session, with an average attendance of 52 people per talk. We received positive feedback from a number of people about the quality of the talks. As we think about continuing to build our community of practice (<http://nagt-jge.org/doi/pdf/10.5408/1089-9995-63.1.1>), we are soliciting the speakers from Session T83 to send us a PDF of their talk so we can upload them to the GER Division website. To download presentations from this session, check here: <http://nagt.org/nagt/divisions/geoed/methods> We will upload the talks as we receive them from the authors. The authors' contact information is included. We encourage you to reach out to the authors with questions.



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Sunday evening at GSA included the NAGT division meetings (2YC, GER and TED) before the Geoscience Educators' Reception. This year, the divisions collaborated to ensure that our business meetings did not overlap for people who are members of more than one division. This seemed to be helpful, as we had 18 people participate in our business and social meetings, including the GER Officers. At the business meeting, we discussed the possibility of submitting a related set of geoscience papers to NARST, the National Association of Research in Science Teaching conference for 2017. This process may be unfamiliar to some GER colleagues; however, we have a few people in the community who have successfully navigated the process. Presenting at NARST would continue to raise the profile of the quality work being done within our community. Glenn Dolphin mentioned that NARST is talking about developing a website on best practices in science education research. This could be a nice source of information for people in GER to continue growing their practice. Are you interested in attending NARST, and fall into one of these camps? Let us know! If there is interest from the community, we can put together an opportunity for GER members to communicate about this topic. Vice President Todd Ellis has more to report on the social half of the meeting on page 4.

An important topic that was brought up by incoming NAGT-President Randy Richardson at the GER business meeting was the importance of defining some guidelines for tenure and promotion of GER faculty. This has been a subject of previous discussion among the GER Division leadership as well as the Long Range Planning committee. Our discussion at the business meeting included considering the type of support faculty will need to adequately assess a tenure packet from a GER colleague. Kristen St. John offers some ideas in her August 2015 commentary, *Being Your Own Best Advocate: Geoscience Education Researchers and the Tenure Track in Traditional Geoscience Programs* (<http://naqt-jge.org/doi/pdf/10.5408/1089-9995-63.3.165>). I encourage you to read Kristen's commentary and start a dialogue with your departmental colleagues about what constitutes scholarly work in GER and how we should be evaluated. Also, keep an eye out for Kristen's upcoming November 2016 commentary, *Is There a Better Model for P&T Preparation and Evaluation of Geoscience Education Research (GER) in Geoscience Departments?* If you are interested in participating in the growing conversation on this topic, please reach out to Todd Ellis (todd.ellis@wmich.edu) about participating in the Long Range Planning Committee. One item on the GER Division "to-do" list for this coming year is to support an AGU Heads and Chairs Webinar on Tenure and Promotion of GER Faculty. We are working with Pranoti Asher, Education and Public Outreach Manager for AGU, to identify people who can speak to this issue and offer insights to our Department Heads. Stay tuned for an announcement about this event in 2016!

An annual event that highlights leaders in geoscience education is the NAGT Awards Luncheon,

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held on Tuesday of GSA each year. This year two awards highlight significant contributions to our community. Kristen St. John, Editor-in-Chief of the Journal of Geoscience Education presented the Outstanding Reviewer Award to Kaatje Kraft (Whatcom Community College) and Roger Levine (Independent Consultant). Our community is fortunate to have colleagues who spend a great deal of time developing their practice with researchers outside of the geosciences for the benefit of our community. The Outstanding Paper Award was presented to Carol Ormand, Cathy Manduca, and Tim Shipley for their paper (with co-authors Basil Tikoff, Cara Harwood, Kinnari Atit, and Alexander Boone), *Evaluation Geoscience Students' Spatial Thinking Skills in a Multi-Institutional Classroom Study*. This study had two components that make it particularly strong and an exciting contribution to our community. First, the authors looked at spatial thinking across multiple types of institutions (ex. liberal arts colleges, comprehensive university, and research university) and a range of geoscience courses (ex. introductory, hydrology, structural geology, etc.). Second, the authors took into account the test-retest effect of cognitive tests of spatial skills. For this, they administered the spatial tests to a group of students not enrolled in a geoscience course twice and the beginning and end of a 4-week time period to evaluate whether gains achieved by students enrolled in geoscience courses showed higher than expected gains (<http://nagt-ige.org/doi/pdf/10.5408/13-027.1>). Papers like this one provide our community with an example of how to apply best practices for methods from psychology to understand learning in the geosciences.

We are looking forward to two other exciting events in 2016. First, as you will see in this GER Newsletter, there is a call for submissions to a Special Issue of JGE. Consider repurposing some of that literature review for your recent NSF proposal or use this as an opportunity to explore new literature outside the range of work already being done in our community. The JGE Editors (Kristen St. John, Heather Petcovic and Alison Stokes) and Associate Editors (Anthony Feig and Karen McNeal) will be working hard to connect authors interested in working on similar topics. Especially for our Early Career members, this could be a great opportunity to grow your network. This will be an exciting issue of JGE that has the potential to establish a baseline of what's been done in GER so far and move the community forward. Also coming in 2016 is the 2nd [Earth Educators Rendezvous \(EER\)](#) in Madison, Wisconsin, July 18-22. The program is currently being developed by leaders, David McConnell and Karen Viskupic. A draft schedule, including opportunities to grow your GER practice is available here: http://serc.carleton.edu/earth_rendezvous/2016/index.html.

Last but not least, at the GSA meeting, I officially became the second president of the GER Division. I am honored (and a little intimidated) to follow in the footsteps of our fantastic first president, Laura Lukes. Laura has been tireless in her efforts to get this division off the ground over the past year and a half. It was a pleasure working with Laura this year - she is thoughtful, encouraging, and

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enthusiastic. What better leader to kick off the largest division of NAGT? I hope we can keep the momentum going. Thankfully, Laura will serve as Past-President over the next year to continue her leadership in our community. Thank you for all of your hard work on our behalf this year, Laura! We hope you will consider getting involved in a committee and offering ideas to continue what Laura started: creating a community of practice for GER!

Looking forward to an exciting 2016 for the GER Division!

Nicole LaDue

NAGT-GER President

On the Horizon for 2016

As VP for our division, it falls to me to Chair the Long Range Planning committee, which is something I've been looking forward to working on this year. The main thrust of our current work is cohort building among the GER community members, and we already have efforts in full swing. The first of these efforts was GER "Speed Dating", held just prior to the GER business meeting at the GSA meeting in Baltimore. During this event, all the attendees got a chance to share their experiences and discuss the kinds of collaborations they would like to seek out (as much as possible during a 5-minute conversation). The conversations were meaningful and represented perspectives from seasoned professionals, new faculty, and graduate students. Our hope is that, as part of our meetings going forward we can keep seeking out new collaborations and ideas and grow our community. The other main thrust of our efforts will be reaching out to the meteorology and oceanography community to engage them more fully in the GER community. This effort will include evangelizing at the upcoming American Meteorology Society meeting in January, as well as ongoing conversations about NSF support for more of these professionals to attend the Earth Educator Rendezvous in Madison in 2016. This is a real priority for me, because University of Wisconsin has a large meteorology and oceanography community and it should be a major draw. My hope is that we can use that opportunity to draft a research agenda for the atmospheric and oceanic parts of the earth system (a.k.a. the squishy parts), and chart a path forward. If you'd like to be part of these efforts, please contact me and let's chat. If you have future directions you'd like the GER division to explore, please consider joining the long range planning team (again, by contacting me—todd.ellis@wmich.edu!).

Todd Ellis

NAGT-GER Vice President

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Submitting content to The GER Exchange

The GER division of NAGT provides regular updates to our membership on funding, scholarship and graduate/postdoc opportunities. We also distribute brief descriptions of publications our membership believe are worth sharing. Starting in Spring 2015, we began a GER Researcher Spotlight, shining the "spotlight" on researchers whose work the community should be aware of. **Self nominations are welcome!** If you know of an opportunity, publication, or researcher our community should know about, we would love to hear about it!



Submit your newsletter items here:

<http://nagt.org/nagt/divisions/geoed/newsletter>


We look forward to hearing from you!

The GER Communication Committee

Co-Chairs: Kelsey Bitting (k.bitting@neu.edu) and Adrianne Leinbach (aaleinbach@waketech.edu)

Membership renewal

Ready to renew your NAGT (and division) membership, or need to update your information? [Head over to the NAGT website for more.](#)



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Journal of Geoscience Education

Dear NAGT members,

I am please to announce a new call for papers for the following theme:

Synthesizing Results and Defining Future Directions of Geoscience Education Research

The objective of the theme issue is to compile a collection of articles that describes the evolution, current status, and future directions of Geoscience Education Research (GER), with a focus on undergraduate education and the community of practice among GER workers.

Commentaries, Curriculum & Instruction Papers, Research Papers, and Literature Review Articles are all encouraged.

Submitting authors should send an email Letter of Intent to jge@jmu.edu by January 3, 2016 indicating the type (e.g., literature review) and topic of their intended paper. This will allow editors to gauge submission pressure and identify any potential overlap in literature review article topics. Should overlaps exist, editors will suggest ways for authors to either combine efforts or divide topics more narrowly. The manuscript submission deadline is August 31, 2016.

I hope you will consider submitting a manuscript; I expect this theme issue will be a great resource for the GER community. Please see the linked below for additional submission information, as well as guidelines for preparing literature reviews.

Kind regards,
Kristen
Dr. Kristen St. John
Editor-in-Chief
Journal of Geoscience Education
jge@jmu.edu

Want to learn more?

Check out the official call here: <http://nagt-jge.org/>
Click on the Call for Papers for additional guidelines.

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Finding GER Collaborators

Want to find other GERers or potential collaborators? Update your profile on SERC by logging in—there is a link on the top left to “Your Profile Page.” You can create a bio, change your photo, link to your research website, and add information about your current GER membership and projects.

To help network the community better, here are some suggestions for what you might include—taken from our researcher spotlight guide: GER Spotlight.

- ◇ What is the focus of your current geoscience education research?
- ◇ What research methods/approaches do you prefer and why?
- ◇ What has been the best tool/resource you’ve found for developing as a geoscience education researcher (organization, conferences, webinar, person, online resource)?
- ◇ What is your favorite or “must read” education research paper? Why is this paper meaningful for your work?
- ◇ What is the most interesting paper you have read in the field recently? How did it spark your researcher curiosity?
- ◇ What type of project would you like to collaborate with other researchers on?
- ◇ What is your advice for an early career geoscience education researcher?
- ◇ What is your advice for someone who is interested in starting out in geoscience education research or scholarship of teaching and learning?
- ◇ What does GER look like at your institution, in your position? (ex. Are you in a geology department or college of education? Do you work with other DBER folks? Do you have graduate students? Are you looking for graduate or undergraduate students?)

Interested in being featured in the GER Spotlight? Know someone deserving? Nominate someone here: <http://nagt.org/nagt/divisions/geoed/newsletter>

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Opportunities to Get Involved with the Division

The NAGT-GER is seeking members and chairs for the following committees. If you are interested in learning more, please contact the listed officer.

- **Communications Committee:** Help us spread the word about the GER division and geoscience education research to our members and external groups and individuals. We need people who will create or oversee a variety of ways to share our message, like a Division website, listserv, e-newsletter, presence on social media, etc. Looking to build your resume and get involved? For more information, contact Secretary Katherine Ryker (kryker@emich.edu).
- **Long-Range Planning Committee:** Are you interested in helping to shape the long-range vision of the Division and its mission? If so, the Long-Range Planning Committee needs you! This committee shall identify and develop resources to achieve the Division's mission, including identifying and soliciting potential sustaining members. The GER Vice President is the Chair of this committee, so please contact Todd Ellis (todd.ellis@wmich.edu) to help shape the future of the GER Division!
- **Conference Committee:** We need people who are willing to organize collaborative activities at conferences and meetings like those of GSA, AGU, NAGT, NARST, or their sections. This committee will work with the NAGT leadership to coordinate activities like endorsing sessions. For more information, contact President Nicole LaDue (nladue@niu.edu) .

Other Opportunities: Publishing, Funding, Jobs and Events

The NAGT-GER provides regular updates to our members on any opportunities that may be of interest. If you know of an opportunity our community should know about, submit it here:

<http://nagt.org/nagt/divisions/geoed/newsletter>

PUBLISHING

Call for Papers: Synthesizing Results and Defining Future Directions of Geoscience Education Research

See page 6 of the newsletter for more details on this opportunity!

Call for Papers: Human Dimensions in Geoscience

GEOSPHERE, an online journal published by the Geological Society of America (ISI impact: 2.7) has an open call for papers to the theme: **Human Dimensions in the Geosciences**. The editors have already processed the first paper, and hope to receive many more! The Human Dimensions in Geoscience theme is intended to bring together research that sits at the boundary between geoscience, broadly construed, and social science. Political science, education, history, philosophy, communication, information science, diversity studies, and similar fields can help illuminate some of the most vexing issues facing the geosciences. This special issue will provide a

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venue for researchers investigating human dimensions in geoscience to share research findings with each other and the broader geoscience community. Submissions are processed as they arrive, and will be published as soon as they are ready. To submit a paper for this issue, go to <http://geosphere.gsapubs.org/site/misc/smargins.xhtml> and be sure to note in your cover letter that this submission is for the "Human Dimensions in Geoscience" themed issue. This special issue will remain open for two years and submissions will be accepted on a rolling basis.

FUNDING

Discovery Research PreK-12 (DRK-12) Solicitation 15-592

The Discovery Research PreK-12 program (DRK-12) seeks to significantly enhance the learning and teaching of science, technology, engineering and mathematics (STEM) by PreK-12 students and teachers, through research and development of STEM education innovations and approaches. Projects in the DRK-12 program build on fundamental research in STEM education and prior research and development efforts that provide theoretical and empirical justification for proposed projects. Projects should result in research-informed and field-tested outcomes and products that inform teaching and learning. Teachers and students who participate in DRK-12 studies are expected to enhance their understanding and use of STEM content, practices and skills. For more information: <http://www.nsf.gov/pubs/2015/nsf15592/nsf15592.htm> Full proposal deadline: December 7, 2015.

Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR) Solicitation 15-585

The Improving Undergraduate STEM Education (IUSE: EHR) program invites proposals that address immediate challenges and opportunities that are facing undergraduate STEM education, as well as those that anticipate new structures (e.g. organizational changes, new methods for certification or credentialing, course re-conception, cyberlearning, etc.) and new functions of the undergraduate learning and teaching enterprise. The IUSE: EHR program recognizes and respects the variety of discipline-specific challenges and opportunities facing STEM faculty as they strive to incorporate results from educational research into classroom practice and work with education research colleagues and social science learning scholars to advance our understanding of effective teaching and learning. For more information: <http://www.nsf.gov/pubs/2015/nsf15585/nsf15585.htm> Full proposal deadline: January 13, 2016.

Tribal Colleges and Universities Program (TCUP) Solicitation 14-572

The Tribal Colleges and Universities Program (TCUP) provides awards to Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high quality science (including sociology, psychology, anthropology, economics, statistics, and other social and behavioral science as well as natural science and education disciplines), technology, engineering and mathematics (STEM) education, research, and outreach. For more information:

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http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5483 Next deadlines: December 9, 2015; March 16, 2016.

National Education Association Foundation Grants to Educators

Provides grants to improve academic achievement of students in U.S. public schools and public higher education institutions in any subject areas. Student Achievement Grants (up to \$5,000) support initiatives to improve academic achievement. Learning and Leadership Grants support high-quality professional development--\$2,000 for individuals and \$5,000 for groups. Higher education faculty and staff may apply. For more information: <http://www.neafoundation.org/pages/grants-to-educators/> Next deadline: February 1, 2016.

JOBS

Postdoctoral Associate / Research Scientist opportunity at Michigan Technological University

Michigan Technological University (Houghton, MI) is searching for one or more researchers specializing in science education research. The successful candidate will become a part of a vibrant team of researchers that are developing and implementing a NGSS-aligned middle-school science curriculum and associated teacher training and professional development. For more information: <http://www.pathwaystoscience.org/programhub.aspx?sort=PDC-MichTech-ScEducResearch>

EVENTS

2016 Earth Educators' Rendezvous

Save the dates! The 2016 Earth Educators' Rendezvous will be at the University of Wisconsin, Madison, July 18-22. For more information http://serc.carleton.edu/earth_rendezvous/2016/index.html We look forward to seeing many of you there!



Contact Information for Division Officers

President Nicole LaDue: nladue@niu.edu

Vice President Todd Ellis: todd.ellis@wmich.edu

Secretary Katherine Ryker: kryker@emich.edu

Treasurer Kim Cheek: k.cheek@unf.edu

Past President Laura Lukes: llukes@gmu.edu