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2021 Annual Meeting is Around the Corner

We are excited to see everyone at GSA’s annual meeting, whether in-person or virtually! In-person attendees will gather in Portland, Oregon for the meeting. For those who are not able to attend in person, GSA is providing an online-only registration option that will include selected live-streamed sessions and events.

The online program includes two Hydrogeology Division-sponsored technical sessions on Sunday (10/10), the Henry Darcy Lecture on Monday (10/11), the Birdsall-Dreiss Distinguished and LaMoreaux International Lecture on Tuesday (10/12), and another Hydrogeology Division-sponsored technical session on Wednesday (10/13).

There were no hybrid rooms available at the Portland Convention Center for the Hydrogeology Division Award Ceremony or Business Meeting; however, if the Convention Center’s internet bandwidth allows, we will broadcast these events via Zoom outside of the GSA Connects 2021 platform. To receive the details for the Zoom meeting, contact Andrea Brookfield (andrea.brookfield@uwaterloo.ca).

As usual, the Awards Ceremony and Business Meeting will be held on Tuesday (10/12). Instead of a catered luncheon, the awards ceremony will be a brown-bag event. It was clear during the remote meeting in 2020 that there is significant demand for this event, and the space limitations and cost of the luncheon were prohibitive to many. So, we encourage in-person attendees to grab their lunch from one of the convention center’s vendors and then join us to celebrate this year’s award winners. And internet willing, we hope to have a large virtual audience for the awards ceremony too.

We are excited to once again be hosting the following in-person events for students at the meeting: The Hydrogeology Division Student Reception, the Hydrogeology and Environmental and Engineering Geology Division Career and Networking Event, and A Showcase of Undergraduate Research in Hydrogeology. Additional details about the upcoming meeting are provided throughout this edition of the Hydrogeologist.
Chair’s Corner

Within a few days of writing this, the 2021 GSA Annual General Meeting, also known as GSA Connects 2021, will begin both in Portland and online. Unfortunately, due to travel restrictions, I will only be able to attend this meeting online but am excited for all of you who are able to attend in person. As usual, the Hydrogeology Division will host a number of events throughout the meeting, but some formats have changed. In particular, the awards ceremony at noon on Tuesday is not a ticketed event, and lunch will not be served. We encourage you to get lunch from any of the vendors in the convention center and join us to celebrate our 2021 awardees. We are working to make the awards ceremony a hybrid event, so pay attention to our social media accounts and emails from the Division for information about how to attend virtually if you are unable to be in Portland.

Many other Division events are occurring during the meeting, including the Darcy lecture on Monday at 4:00pm and the Birdsall-Dreiss Distinguished Lecturer and LaMoreaux International Lecturer on Tuesday at 4:30pm, which are both hybrid events. Also on Tuesday is the Division business meeting which is held immediately after the awards ceremony. Those who have attended the awards ceremony virtually are welcome to stay online and attend the business meeting. We will also host the Career and Networking event and the student reception on Tuesday, both as in-person events only. More information about these events is available in this newsletter and online.

This is my last Chair’s Corner as Chair of the Division. It was an interesting year, and certainly not what I had anticipated when I first joined the management board. I’m disappointed that I can’t attend the meeting in-person but am endlessly thankful for all of the management board, student volunteers, and past management board members who are helping to organize and run all Division activities at the meeting. When you see any of our members running an event or staffing our Division booth please tell them thank you. They are all carrying a heavier load to make up for those of us who can’t be there in person.

Regardless of how you attend, in-person or virtual, I hope you enjoy GSA Connects 2021. Stay safe, and stay healthy.

Cheers,

Andrea

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Stay current on developments in the Hydrogeology Division by joining our Facebook group, following us on Instagram, and tweeting us @GSAHydrogeology!

Facebook: https://www.facebook.com/groups/93897080123/
Instagram: https://www.instagram.com/gsa_hydrogeology/
Twitter: https://twitter.com/GSAHydrogeology
List of Division-Sponsored Technical Sessions at the 2021 Annual Meeting

Note: the online meeting program is the definitive schedule for the meeting.

- **D10. The Role of Chemistry, Climate, and Geology in Controlling Subsurface Structure and Flow**
  - In-person only
  - Sunday, 10/10/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D135

- **T57. Secured Groundwater towards a Sustainable Earth**
  - Virtual and in-person
  - Sunday, 10/10/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D136

- **T50. Arsenic, Fluoride, and Other Geogenic Contaminants in Groundwater Basins: Linking Advances in Natural Sciences and Applications of Artificial Intelligence and Data Science for Long-Term Risk Prediction and Policy Interventions**
  - Virtual and in-person
  - Sunday, 10/10/21
  - 1:30 – 5:30 pm PDT
  - Oregon Convention Center, D136

- **T47. A Showcase of Undergraduate Research in Hydrogeology (Posters)**
  - In-person only
  - Sunday, 10/10/21
  - 2:30 – 6:30 pm PDT
  - Oregon Convention Center, Exhibit Hall A

- **D9. Recent Advances in Hydrogeology (Posters)**
  - In-person only
  - Sunday, 10/10/21
  - 2:30 – 6:30 pm PDT
  - Oregon Convention Center, Exhibit Hall A

- **T48. Addressing Complex Problems in Hydrogeology with Big Data and Machine Learning**
  - In-person only
  - Monday, 10/11/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D135

  - In-person only
  - Monday, 10/11/21
  - 2:30 pm – 6:30 pm PDT
  - Oregon Convention Center, Exhibit Hall A

- **T54. Geology, Hydrogeology, and Hydrochemistry of Non-Traditional Basin Resources**
  - In-person only
  - Tuesday, 10/12/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D139/D140

  - Virtual and in-person
  - Wednesday, 10/13/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D136

- **T51. Basic Data Innovations in Hydrogeological Investigations**
  - In-person only
  - Wednesday, 10/13/21
  - 8:00 am – 12:00 pm PDT
  - Oregon Convention Center, D138

- **D12. Coastal and Marine Hydrology in an Age of Rising Seas: From the Margin to the Oceanic Ridge**
  - In-person only
  - Wednesday, 10/13/21
  - 1:30 pm – 5:30 pm PDT
  - Oregon Convention Center, D137
Non-technical Division Events at the 2021 Annual Meeting

Henry Darcy Distinguished Lecture

Monday, Oct. 11th,
4:00 PM – 5:00 PM PDT,
Oregon Convention Center – Portland Ballroom 253
Virtual and in-person

Dr. Chen Zhu, Professor of Earth and Atmospheric Sciences and the Haydn Murray Chair at Indiana University and the Groundwater Foundation’s 2021-2022 Henry Darcy Lecturer, will present his talk, “Watershed-Scale Hydrological Models as a Community Cyberplatform for Research, Teaching, and Service to Society”.

For more information about the Darcy Lecture Series, visit the Groundwater Foundation’s Darcy Lecture Series in Groundwater Science website.

Hydrogeology Division Awards Ceremony and Business Meeting

Tuesday, Oct. 12th,
12:00 PM – 2:30 PM PDT,
Oregon Convention Center – Portland Ballroom 251/258
In-person (Unfortunately, a hybrid meeting room was not available for these events. However, the Division Management Board is hoping to set-up a Zoom connection, separate from the GSA Connects Platform, for virtual attendees. To receive the details for the Zoom meeting, email Andrea Brookfield at andrea.brookfield@uwaterloo.ca).

This year’s award ceremony is a non-ticketed brown bag event. If you are in Portland, grab a lunch from one of the Convention Center’s vendors and help us celebrate this year’s award winners. If you are a virtual attendee grab a snack from your kitchen and join us on Zoom (Internet willing!). Whether you are an in-person or virtual attendee, we hope you join us for the Division’s business meeting immediately following the awards ceremony.

GSA Hydrogeology and GSA Environmental and Engineering Geology Division Career and Networking Event

Tuesday, Oct. 12th,
3:00 PM – 4:30 PM PDT,
Oregon Convention Center – Portland Ballroom 251/258
In-person

Students, join us for this opportunity to meet with professionals from a variety of agencies, institutions, and companies for discussions about career paths in the fields of Hydrogeology and Environmental and Engineering Geology.
Non-technical Division Events at the 2021 Annual Meeting, Continued

Birdsall-Dreiss Distinguished and LaMoreaux International Lecture
Tuesday, Oct. 12th,
4:30 PM – 5:30 PM PDT,
Oregon Convention Center – Portland Ballroom 253
Virtual and in-person

Dr. Jonathan Martin, Professor of Geological Sciences at the University of Florida and the 2020 -2021 Birdsall-Dreiss Distinguished and LaMoreaux International Lecturer, will present his talk, “Greenland revisited: Lake effects on coastal solute fluxes”.

Dr. Jonathan Martin

Hydrogeology Division Student Reception
Tuesday, Oct. 12th,
6:00 PM – 8:00 PM PDT,
Oregon Convention Center – Portland Ballroom 251/258
In-person

Students, join us for free food, beverages, games, prizes, and networking. It doesn’t get better any than this!

From the Editor
Welcome to the Fall 2021 edition of The Hydrogeologist. This issue is focused on announcements relevant to GSA’s 2021 annual meeting. Although I am unable to attend the annual in person this year, I am looking forward to participating in the online events and sincerely hope that we are back to an all in-person meeting in 2022.

Please feel free to send me any articles, photos, or suggestions for the next edition of the Hydrogeologist, which will be published in early 2022.

Tara Root (troot@usgs.gov)

Do you have an interesting idea for a short scientific article? Perhaps an opinion on a new policy or technique? Any exciting news in your professional life? Upcoming conference? An announcement of interest to the hydrological community? If so, why not publish it in The Hydrogeologist? Send your submission ideas to troot@usgs.gov.

STUDENTS, WE WANT TO HEAR FROM YOU TOO!

We need photos to document the Annual Meeting in the next edition of the Hydrogeologist. If you are an in-person attendee, we encourage you to snap some photos of Division events, like the Awards Ceremony, the Student Reception, the career and networking event, the undergraduate student poster session, the Birdsall-Dreiss Distinguished and LaMoreaux International Lecture, the Darcy Lecture, etc. Please email the photos that you think best highlight the meeting experience to Tara Root, at troot@usgs.gov.
Dr. Mark Person Receives the 2021 O.E. Meinzer Award

Dr. Mark Person, Professor of Earth and Environmental Science at New Mexico Tech, will be presented with the O.E. Meinzer award at GSA’s upcoming annual meeting. The O.E. Meinzer Award is presented annually to the author or authors of a published paper or body of papers of distinction that advance the science of hydrogeology or some closely related field.

Dr. Person works mostly at the intersection of hydrology and geology, examining the effect of geological processes on hydrology, and vice versa. His primary tool is computer simulation supported by observations in the field.

With this approach he has examined and explained the origin of petroleum reservoirs and ore deposits, the co-evolution of tectonics and groundwater flow, carbon sequestration, and induced seismicity. For example, Dr. Person made significant strides studying new carbon sequestration technology to help moderate climate change by storing CO₂ underground. Regarding induced seismicity he conducted new research on small earthquakes caused by the injection of fluids associated with petroleum production, carbon sequestration and waste disposal.

Dr. Person also examined the relationship between groundwater and advancing glacial ice during the last ice age, where the weight of the ice controls groundwater flow. His work has led to new understanding of groundwater in glaciated regions in the North American interior and explains the origin of large off-shore, submarine freshwater deposits found off the coast of New England and New York. Together with colleagues he then looked for similar data around the planet and discovered that, due to changing sea level, vast offshore freshwater resources are common for certain geologic environments. He presented his finding in the prestigious scientific journal Nature. This has tremendous implications for coastal areas around the globe.

Papers cited in the nomination of Dr. Person for the Meinzer Award


Dr. Prosun Bhattacharya Awarded the 2021 George Burke Maxey Distinguished Service Award

The George Burke Maxey Award is given annually in recognition of distinguished service and contributions to the field of hydrogeology. This year’s recipient of the Maxey Award is Dr. Prosun Bhattacharya, professor of Groundwater Chemistry at the Department of Sustainable Development, Environmental Science and Engineering at KTH Royal Institute of Technology, Stockholm, Sweden. Dr. Prosun is also Coordinator of the KTH-International Groundwater Arsenic Research Group. His research interest is contamination in drinking water aquifers, especially focusing on geogenic contaminants like arsenic and fluoride.

Dr. Bhattacharya has an extraordinary record of service in the global hydrogeology community. He has supported efforts to expand hydrogeology teaching and research in several parts of the world including Argentina, Bangladesh, Bolivia, China, Chile, India, Nepal, Pakistan, Sweden, and the USA. He is a Fellow of the International Water Association and the Geological Society of America. He is actively involved in GSA’s (continued on page 7)
Dr. Prosun Bhattacharya Awarded the 2021 George Burke Maxey Distinguished Service Award, continued

Hydrogeology Division, where he serves as the Division’s representative to GSA’s International Section and regularly organizes technical sessions for the Annual Meetings.

Dr. Bhattacharya’s research has contributed to improved understanding of challenges linked with the occurrence of arsenic and fluoride in groundwater systems that are used for drinking water sources through the world. He is passionate about drinking water quality and public health and has worked tirelessly toward sustainable mitigation of geogenic contaminants in groundwater.

Dr. Abraham Springer is the 2022 Birdsall-Dreiss Distinguished and LaMoreaux International Lecturer

The Hydrogeology Division is pleased to announce Dr. Abraham Springer as the 2022 Birdsall-Dreiss Distinguished and LaMoreaux International Lecturer. Dr. Springer has been a member of the faculty in the School of Earth and Sustainability at Northern Arizona University since 1994. His research integrates physical and chemical hydrogeology with ecological assessment and economic valuation, and he is a leading expert on springs in North America. He and his collaborators have done groundbreaking research on the impacts of ecosystem restoration on water resources and watershed services, as well as the willingness of stakeholders to pay for those resources and services. Dr. Springer has authored or co-authored 45 journal papers in a wide variety of journals.

Dr. Springer is also an outstanding educator. In addition to supervising and serving on committees for dozens of graduate students, he advises undergraduate researchers, teaches several hydrogeology-related University courses, leads continuing education classes, and developed and led a study-abroad course on karst in Bosnia and Herzegovina, Montenegro, and Croatia.

Dr. Springer’s numerous contributions to the hydrogeology community include serving as chair of GSA’s Hydrogeology Division and serving on the Hydrogeology Division’s Management Board, Distinguished Award Committee, and Nominating Committee. Additionally, he has convened numerous technical sessions, led a field trip, and developed a short course for previous GSA annual meetings.

Details about the talks Dr. Springer will offer during his Birdsall-Dreiss Distinguished and LaMoreaux International Lecture Tour are available on the Hydrogeology Division’s website and will appear in future editions of the Hydrogeologist.

Congratulations to the 2021 Hydrogeology Division Graduate Student Research Award Winners

**Ryan Threndyle**, MSc student, Dalhousie
Supervisor: Dr. Barrett Kurylyk
Title: Impacts of sea-Level rise on contaminant loading from onsite wastewater treatment systems to groundwater and coastal waters

**Goabaone Ramatlapeng**, PhD student, University of Delaware
Supervisor: Eliot Atekwana
Title: Spatio-temporal controls on the chemical evolution of the Okavango River in the Okavango Delta in semi-arid Botswana

Continued on page 8
Congratulations to the 2021 Hydrogeology Division Graduate Student Research Award Winners, continued

**Favour Epuna.** MSc student, Syracuse University  
Supervisor: Tao Wen  
Title: Impacts of unconventional oil and gas drilling on water quality in rural area with mixed land uses

**Mario Soriano.** PhD student, Yale University  
Supervisor: James Saiers  
Title: Elucidating potential impacts of unconventional energy development on groundwater quality through physics-informed machine learning

**Lindsey Aman.** MSc student, West Virginia University  
Supervisor: Chris Russoniello  
Title: Active layer controls on seasonal water storage in an arctic delta within talik lakes

Where in the World is This?

Think you know where this is? Let me know by submitting your guess to: troot@usgs.gov.
Where in the World was That?

The photos in the Summer 2021 issue of the Hydrogeologist were taken in the Sheep Creek Canyon Geological Area in northern Utah. Sheep Creek Cave is located near the top of ridge shown in the picture above. The cave entrance is located about 50 ft above the discharge point for Big Springs (above right). The cave and the springs are part of a long, narrow karst system. A dye test traced the water in Big Springs to a sinking stream located 14 miles to the west of the location shown in these photos. It took the dye approximately 21 days to travel the 14 miles.

Sheep Creek Canyon Geological Area is located adjacent to the Flaming Gorge National Recreation Area. The road cuts in the area provide a unique opportunity to see exposed rock formations ranging in age from Pre-Cambrian to Cretaceous as well as the Uinta Fault Zone.
Important Dates

- **GSA Connects 2021** 10 - 13 Oct
- **Earth Science Week** 10-16 Oct
- **Happy Thanksgiving!** 25 Nov
- **GeoCorps America** and **NPS Scientist in Parks** Summer positions posted 1 Dec
- **GSA Graduate Student Research Grant program** opens to applications 1 Dec

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**THE HYDROGEOLOGIST**

The Hydrogeologist is a publication of the Hydrogeology Division of the Geological Society of America. It is published electronically three times a year to communicate news of interest to members of the Hydrogeology Division and can be accessed at: [https://community.geosociety.org/hydrodivision/home](https://community.geosociety.org/hydrodivision/home). Members of the Hydrogeology Division who have electronic mail will receive notification of all new issues. Other members will receive paper copies.

Contributions and material are most welcome and should be directed to the Editor. The deadline for the winter issue is January 31, 2022.

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2021 Management Board

- **Chair**: Andrea Brookfield, andrea.brookfield@uwaterloo.ca
- **First Vice-Chair**: Yu-Feng Lin, yflin@illinois.edu
- **Second Vice-Chair**: Chris Gellasch, chris.gellasch@emich.edu
- **Secretary-Treasurer**: Cara Peterman, cpeterman@usgs.gov
- **Past-Chair**: Ben Rostron, ben.rostron@ualberta.ca
- **Student Representatives**: Miguel Valencia and Jacob B. Clyne, mvale095@fiu.edu and clyne.5@buckeyemail.osu.edu

Standing Committees

- **Technical Program Committee**: Don Rosenberry, Andrea Brookfield, Ben Rostron (acting co-Chairs)
- **Nominating Committee**: Abe Springer (Chair), Stephen Van der Hoven, William Cunningham
- **Meinzer Award Committee**: Shemin Ge (Chair), Don Rosenberry, Bridgett Scanlon, Tom McKenna, Laura Lautz
- **Kohout Early Career Committee**: Dorothy Vesper (Chair), Martin Briggs, Scott Jasechko, Barret Kurylyk
- **Maxey Distinguished Service Award Committee**: Carol Wicks (Chair), Todd Hallihan, Alan Fyar
- **Birdsall-Dreiss Lecturer Committee**: David Boutt (Chair), Laura Crossley, Randy Hunt, Susan Swanson, Eric Peterson
- **Archives**: Jim Thomas

GSA Councilor/Division Liaison Representative

- Ed Harvey

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  - Northeastern, Todd Rayne
  - North Central, Sue Swanson
  - South Central, Marcia Schulmeister
  - Rocky Mountain, Andrew Manning
  - Southeastern, Jeffrey Wilcox
  - International, Prosun Bhattacharya

Representatives to Other Societies:
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  - CUAHSI, Holly Michael
  - National Groundwater Association, Bill Alley
  - International Association of Hydrogeologists, Jack Sharp
  - SEPM, Gary Weissman
  - Soil Science Society of America, Michael Young

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  - Website Administrator Assistant, Martina Rogers
  - Newsletter Editor, Tara Root