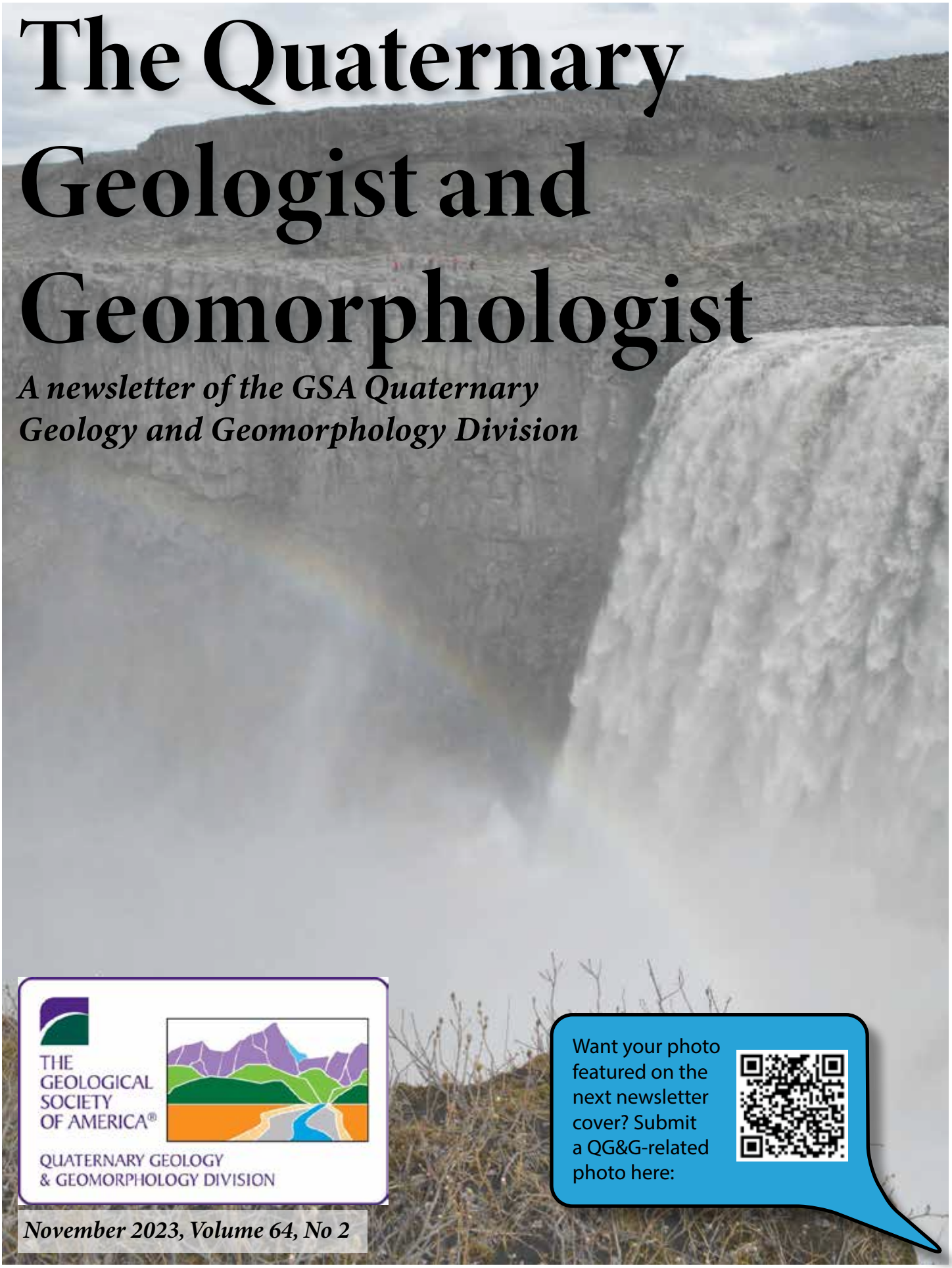
The Quaternary Geologist and Geomorphologist

A newsletter of the GSA Quaternary Geology and Geomorphology Division



THE GEOLOGICAL SOCIETY OF AMERICA®

QUATERNARY GEOLOGY & GEOMORPHOLOGY DIVISION

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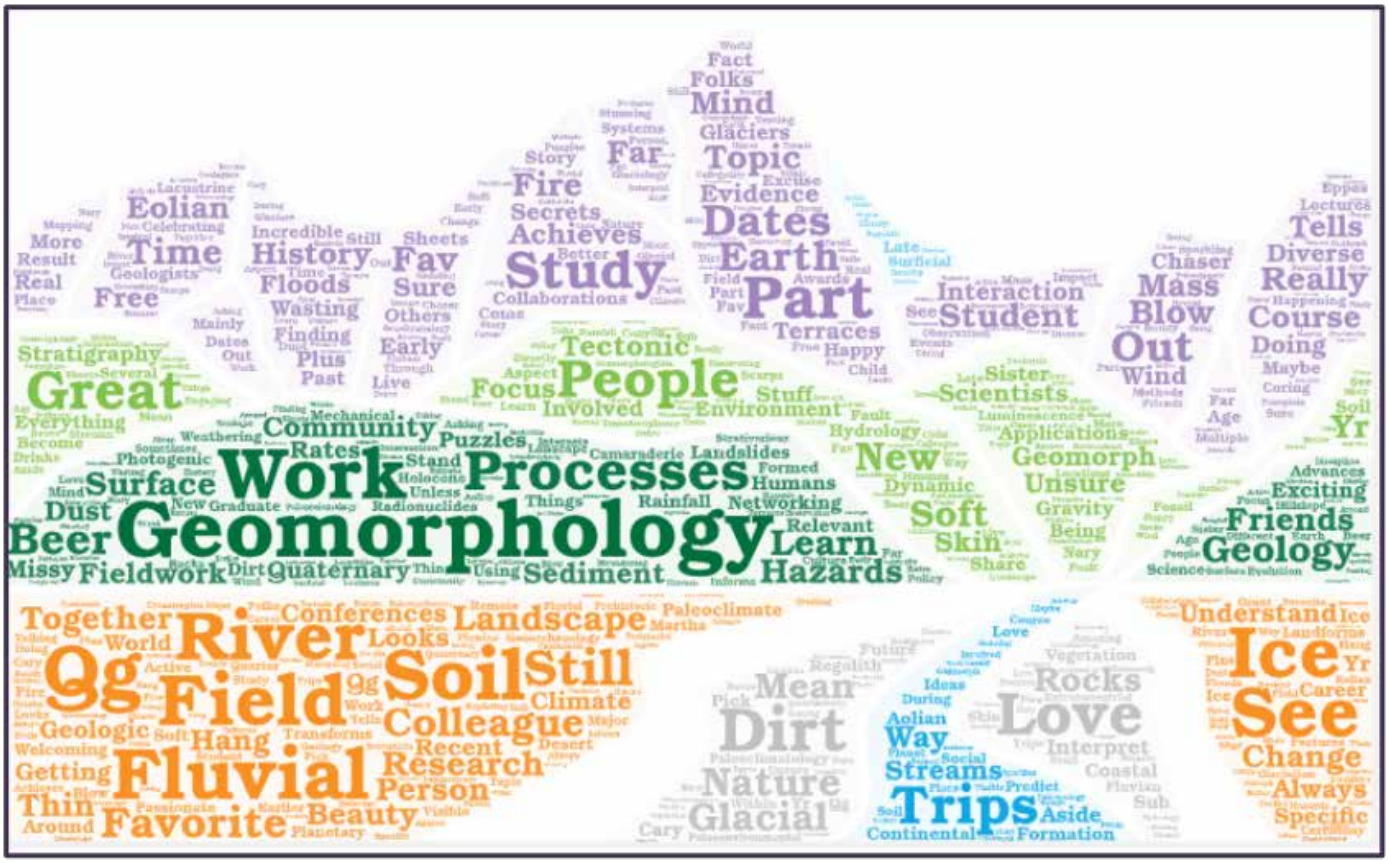
November 2023, Volume 64, No 2



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http://community.geosociety.org/qggdivision/home

Message from the Chair

Dear Quaternary Geology & Geomorphology Community,

I hope those of you who attended the GSA meeting in Pittsburgh, Pennsylvania, had a great time connecting with friends and colleagues, as well as learning about exciting research. To those of you who couldn't make it this year, we missed you, and hope to see you at the 2024 meeting in Anaheim, California. We also hope for peace in 2024 to our international colleagues who couldn't make the journey to the United States this year.

At the meeting in Pittsburgh, QG&G-related research was well-represented across the program. As usual, students brought their A-game to the meeting, showcasing the next generation of research in Quaternary geology and geomorphology. Of the 12 awards our division gives to students, 9 of them attended the meeting and accepted their awards at the QG&G Banquet on Tuesday night. In this issue, you can learn more about the 2023 graduate student winners, as well as the winners of our other prestigious division awards.

Looking ahead to 2024, the meeting in Anaheim on September 22-25 has two themes: Life on an Active Margin, and Water in our Changing World. Technical session and short course proposals are due February 1, 2024. When thinking about technical session proposals, keep these themes in mind, but proposals are welcome outside those themes.

I am happy to announce that after a several year hiatus, we will have a Kirk Bryan Field Trip for the 2024 meeting! Thanks to Andy Cyr, Dick Heermance, and Nathan Brown for proposing a trip to Stone Cabin in Mission Creek – stay tuned for more details. The deadline for field trip proposals is coming up quickly – December 8, 2023. Please consider submitting a field trip proposal for the 2024 meeting.

Please nominate your deserving colleagues for awards, including for GSA fellowship! On the following pages you can find more information along with deadlines in early 2024. If you haven't already, don't forget to renew your GSA and QG&G division membership. If you are feeling particularly generous, donations to any of our many awards are always appreciated.

It is my pleasure to serve you as chair of QG&G. Hopefully you will be hearing and seeing a lot more from your favorite division this coming year. I wish you the best as the year comes to a close, and best of luck to professors and students in finishing up the academic term.

Mark Sweeney
University of South Dakota, Vermillion, SD

2023/2024 Division Officers and Panel Members

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Mark Sweeney
Department of Sustainability & Environment
University of South Dakota
Mark.Sweeney@usd.edu

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Lisa Ely
Department of Geological Sciences
Central Washington University
Lisa.Ely@cwu.edu

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Department of Geosciences
Boise State University
jenpierce@boisestate.edu

Treasurer
Scott F. Burns
Department of Geology
Portland State University
burnss@pdx.edu

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Earth & Env Sciences Dept
University of Minnesota Duluth
kgran@d.umn.edu

Historian
Janet Slate
U.S. Geological Survey
jslate@ultrasys.net

Past Chair
Arjun Heimsath
School of Earth and Space Exploration
Arizona State University
Arjun.Heimsath@asu.edu

Communications Coordinator
Sarah Schanz
Geology Department
Colorado College
sschanz@coloradocollege.edu

DEI Officer
Eric Portenga
Geography & Geology Dept
Eastern Michigan University
eric.portenga@emich.edu

Early Career Representative
Emily Apel
Dept of Earth, Atmospheric, and Planetary Sciences
Purdue University
eapel@purdue.edu

Panel Members

2022 - 2024
Jenn Aldred, New Mexico Highlands University
Allison Pfeiffer, Western Washington University
Brian Yanites, Indiana University Bloomington

2023 - 2025
Lee Corbett, University of Vermont
Helen Dow, U.S. Geological Survey
Jason Rech, Miami University

2024 Joint Technical Program Committee (JTPC) Representatives:
Mark Sweeney, Jen Pierce, Brad Johnson

QG&G Division Liaison (appointed by GSA President):
Rick Ortiz

Announcements

Submit a **Field Trip** proposal for GSA 2024 in Anaheim, California! Proposals are due **Dec 8th, 2023**. We encourage you to employ inclusive practices with regards to accessibility and racial/gender/LGBTQIA+ field safety.

GSA 2024 **session proposals** due February 1st, 2024! Contact our JTPC reps to be QG&G sponsored - let us help you advertise your session!

***Follow** QG&G on social media to learn more about events, grant opportunities, DEI initiatives, and to celebrate the amazing work of our members!*
Facebook: @GSAQGG *Instagram: @qgg_gsa*

Join our DEI and Communications teams!

DEI Team: Eric Portenga, Stephanie Shepherd
Contact Eric Portenga to be added

Communications Team: Sarah Schanz, Jenn Aldred, Jill Marshall, Allison Pfeiffer
Contact Sarah Schanz to be added

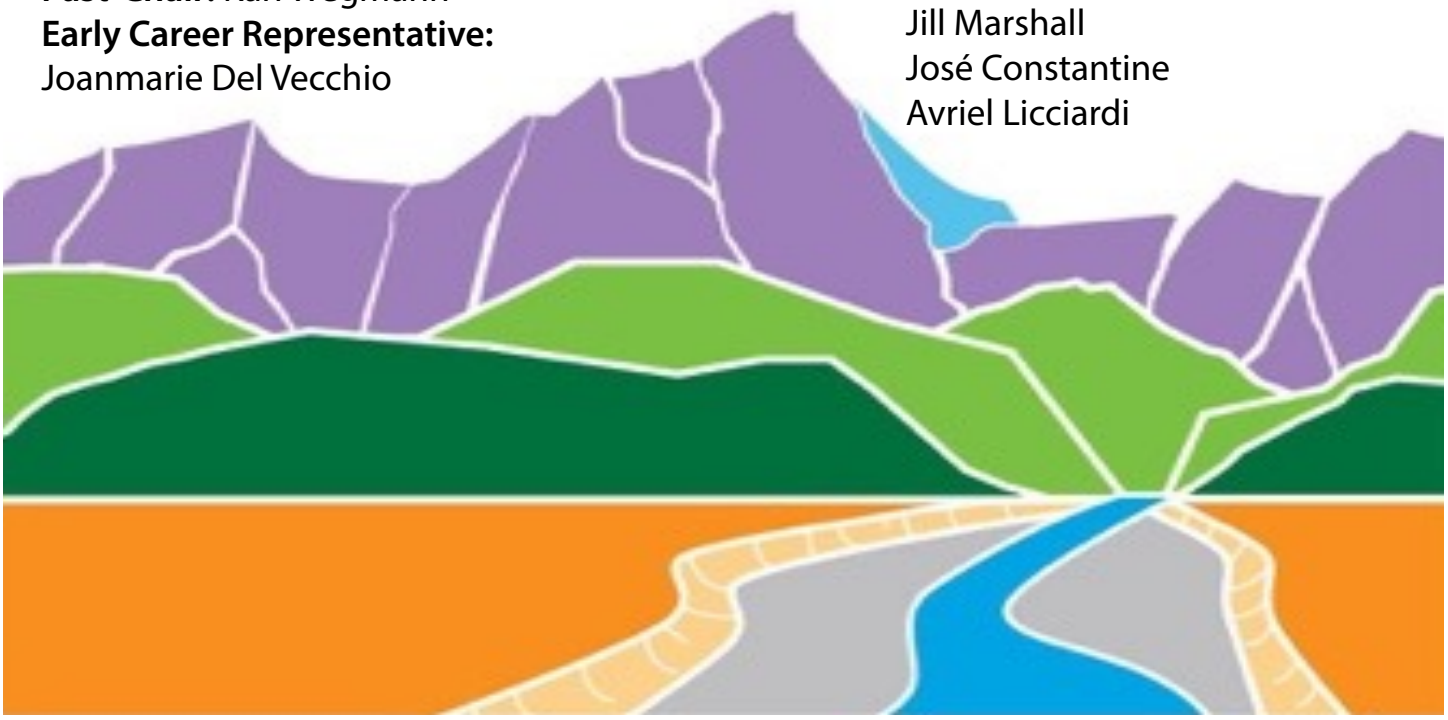
***Congratulations* to these QG&G members on becoming GSA Fellows!**

Keith Brugger, U of Minnesota, Morris
Peter Fawcett, U of New Mexico
Benjamin Laabs, North Dakota State U
Sarah Principato, Gettysburg College

***Thank you* to our outgoing board and panel members for their service!**

Past-Chair: Karl Wegmann
Early Career Representative: Joanmarie Del Vecchio

2021-2023 panelists:
Jill Marshall
José Constantine
Avriel Licciardi



QG&G Includes

The diversity, equity, justice, and inclusion committee for QG&G

A message from the QG&G DEI Officer:

The DEI Officer is appointed by the Chair in consultation with the QG&G Management Board. As this is not an elected position, I wanted to introduce myself:

My name is Eric Portenga and I am a gay geomorphologist at Eastern Michigan University where I work primarily with undergraduate students, and I am constantly on the lookout for large glacial erratics in the heavily altered landscapes of southeast Michigan. This is the first year of service for the QG&G Division's inaugural Diversity, Equity, and Inclusion (DEI) Officer, and I look forward to serving you and the QG&G community!

The QG&G DEI Officer is responsible for coordinating DEI initiatives, communicating between the Management Board and QG&G members about DEI initiatives, and appointing the members of the QG&G Includes committee.

Since its inception in 2020, the QG&G Includes committee has had very fruitful discussions about how DEI can be improved in our Division. The Committee's work helped to shape the scope of the Donald R. Coates Award and to revise the Division's Bylaws to establish a DEI Officer on the Management Board. We are excited to do more!

Who **are** the QG&G Includes Committee? What do we do? The short answer is: **YOU**

If you are interested in facilitating change that will make our Division **more** comfortable, **more** welcoming, and **safer** than it already is, please reach out to me and I will add you to our list. Specific goals for members of the Includes committee in the 2023-24 year will include:

- Keeping the DEI Officer aware of local/national/international DEI initiatives of relevance to the broader QG&G community
- Notifying the DEI Officer of specific DEI concerns among QG&G members
- Helping to host listening sessions with Division membership and/or running workshops for building inclusive and safe spaces at your home institutions and at GSA events
- Working with the QG&G Communications team to promote and create content for social media that highlights the great work ALL of our students and members do in their research, classrooms, and communities

More importantly, if you have ever **not** felt comfortable, or welcomed, or safe at a QG&G event, please reach out. I am a RISE Liaison with the responsibility of being a confidential listener and helping you find support you need. This may be listening to your concerns about how QG&G events and activities are run. Or, if it is a more serious issue, I can help ensure that your concerns are raised to Elizabeth Long (GSA's DEI Officer) or to the GSA Ethics Board for further, more direct guidance.

The RISE program (Respectful Inclusive Scientific Events) was on clear display at GSA Connects 2023 in Pittsburgh this year, and I encourage everyone to become a RISE Liaison (it takes about 30 minutes).

Division Awards

The following awards were given by the QG&G Division at our Annual Awards Ceremony at the 2023 GSA Connects in Pittsburgh, PA, on Tuesday, 17th of October 2023. Full award citations and responses are on Page 17 of the newsletter.

Nominate someone for the Kirk Bryan (**Feb 1st**), Distinguished Career (**April 1st**), or Farouk El-Baz (**April 1st**) awards!

Did you know? In addition to funding the most student awards of any GSA division, QG&G now supports a **Student Awardee Travel Fund** to help students attend the meeting and receive their award in person!

Apply for a student award by Feb 1st, 2024!
Submit a GSA Student Research Grant proposal and select "Quaternary Geology & Geomorphology" as the research area to be automatically considered.

Apply for the Gladys Cole Award!
Available to members 30-65 years old working in arid and semi-arid landscapes. See **page 11** for more details.

Thank you!

The Quaternary Geology and Geomorphology Division management board thanks the following people for their help in evaluating this year's award applications for the 2023 Farouk El Baz and division student awards:

Jen Pierce, Arjun Heimsath, Scott Burns, Katie Gibble, William Odom, Alison Anders, Allison Pfeiffer, Clay Roehner, Amanda Gaggioli, Joanmarie Del Vecchio, John Pitlick, Jason A Rech, John Kemper, Wesley von Dassow, Kerry Riley, Lyman Persico, Dan Cadol, Anna Bergstrom, Margaret E Berry, Lixin Jin, Kristen Cook, Rick Ortiz, Mark Sweeney, Brian Yanites, Danica Roth, Brad Johnson, Jaime Goode, Tammy Rittenour, Francis Rengers, David Wilkins, Bruce Harrison, Jose Luis Antinao, Sarah Lewis, Joe Desloges, Tao Liu, Christopher Halsted, Alexander Morgan, Corey Scheip, Mary Savina, Andrew Stumpf, Rebecca Taormina, R. Laurence Davis, Mark Johnson, David Dethier, Allen Gontz, David Vance, Sylvia Nicovich, Sarah Principato, Timothy Fisher, Pamela Tarquin, Karl Wegmann, Rebecca Caldwell, Glenn Bruck, Patrick Pringle, Rachel Oien, Umberto Fracassi, Steve Gordon, Tony Layzell, Tripti Bhattacharya, Rebekah Levine, Lisa Ely, Doug Clark, Paul Bierman, Joel Pederson, Will Ouimet, Nick Sutfin, Andrew Wilcox, Erin Murray, Kathleen Springer, Rivka Amit, Claudio Latorre, Marith Reheis, Ronald Amundson

Distinguished Career Award

The Distinguished Career Award was established in 1985. It is presented to Quaternary Geologists and Geomorphologists who have demonstrated excellence in their contributions to science.

We presented the 2023 award to **Gordon Grant**, US Forest Service and Oregon State University.

From Kyle House, USGS
Gordon Grant is truly a philosopher in geologist's clothing. His capacious brain is amazing as is his ability to brainstorm on any concept at any place and time. His pontificating rants are amazing and hilarious at times, and they often strike to the core of fundamental concepts in geology and geomorphology. I have enjoyed every minute I have spent in the field with Gordon, and I love to make him laugh uproariously.

From Chris Paola, University of Minnesota
If you had only been a leader in sustainable river management; if you had just done pioneering work in vegetation and woody dynamics; if you had simply brought a whole new perspective on critical flow; if you had merely been the most enthusiastic and generous of colleagues: any one of these would have been enough and more. Dayenu, Gordon, our "big two-hearted" comrade, and congratulations!


Gordon Grant (front, center) at the 2023 Awards Ceremony. Photo: Jen Pierce

From Laura Hempel, USGS (former student)
Beyond "distinguished," I would also describe Gordon's career as "enviable." Gordon's contributions to science are unequivocal and indelible and he's made those contributions in style to boot (e.g., working on [and floating down] some of the most interesting, diverse rivers in the world!). Gordon's ability to translate complex concepts into accessible, captivating, thought-provoking stories has inspired countless students and peers alike.

From Barbara Heitkamp (Burkholder), OSU Masters student 2005-2008
"...Gordon an amazing scientist, but he is also an amazing science communicator - able to take complex concepts and distill them in a way that makes them relatable and digestible for whatever audience he is in front of. His gift of metaphor and narrative is unparalleled! "What would Gordon say?" Or "How would Gordon build a story around this?" Are not uncommon thoughts for me to have on a regular basis, even though I have been out of graduate school for more than a decade!..."

Excerpt from response by Gordon Grant:
I am extremely grateful and honored to accept this year's Distinguished Career Award, or as my wife refers to it, the "Extinguished" Career Award. I am very gratified that this award comes from the QG&G community writ large – it means a lot that the group that I consider to be my intellectual "home waters" for over 40 years would choose to bestow this honor.

In reflecting on what this award means (aside from being an extremely polite way of encouraging me to retire), I find myself wondering: how did a hippy, dippy, and drippy whitewater river guide and dilettante banjo player find himself here today? And the answer is simple: I had a LOT of help. Which led me to thinking about how communities such as ours help each other along through different forms of mentorship. Like most of you, I have been mentored every step of that winding, meandering rivercourse that constitutes a career.

The 2023 DCA Awardee, Gordon Grant. Photo: Jim O'Connor

My many friends, colleagues, heroes, and heroines too numerous to name, (but you know who you are) have mentored and put up with me more than I probably deserve. Pretty much everything I've tried to learn along the way: how to recognize paleoflood deposits, conduct flume experiments, think deeply, write cogently, ask and answer good questions, has come from their mentorship. And to top it off, it's been a hell of a lot of fun. I can honestly say that the very best part of a scientific career has been the joy of sharing the ride with some of the brightest and most generous people around.

This list of mentors would be incomplete if I didn't acknowledge the greatest mentor of all: the Earth itself. What a privilege it has been to spend one's career studying the rivers, landforms and history of this loveliest of planets, and occasionally getting a glimpse of her secrets and mysteries. We are all lucky people, but I consider myself a very fortunate individual to have traded in my oars for this marvelous career with such a wonderful community, and I deeply thank all of you for this honor and for helping to make it happen.

Full award citation and response on page 17

Farouk El-Baz Award for Desert Research

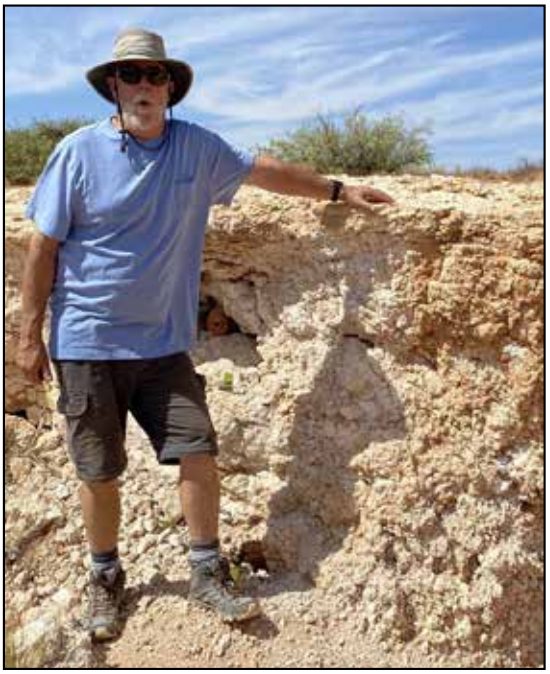
The Farouk El-Baz Award for Desert Research was established in 1999. Dr. Farouk El-Baz, Research Professor and Director of the Center for Remote Sensing at Boston University, contributed the initial endowment for the award. The award is given annually for an outstanding body of work in the field of desert research.

We presented the 2023 award to **Eric McDonald,** Desert Research Institute.

Excerpts from the award citation by Mark Sweeney:
It gives me great pleasure to honor Eric McDonald, this year's Farouk El Baz Award winner. This was a joint nomination between me, Amanda Keen-Zebert, and Brad Sion. Eric has made extraordinary contributions to research in desert environments and also provided excellent mentorship to the next generation of desert researchers.

Eric's scientific journey has resembled in some ways a soil climosequence, shifting ever more arid. His colleague Kiki Amit told me, "He is a real desert person, and in the hottest deserts he is like a fish in the water." Eric likes the desert hot like he likes hot Hatch chile, commenting on how it is "pleasantly warm" while sitting in a soil pit at 100 degrees.

Eric is commonly heard saying "soils don't lie." He links what he sees in the soil back to landforms and landscape evolution, making him a quintessential soil geomorphologist. At DRI, Eric built a cornerstone program focused on assisting the military in "reading the landscape" to improve maneuverability in desert environments and learning about the Quaternary history of desert landscapes through pedologic and geomorphic lenses. Eric's significant contributions to desert research are multidisciplinary but focus on three primary areas: 1) soil hydrology and its influence on geomorphic development, 2) causes and timing of alluvial fan activity, and 3) influence of dust on soils and geomorphology.



The 2023 Farouk El-Baz awardee, Eric McDonald

Eric McDonald's contributions to desert research have been wide-reaching, influencing not only academic thinking but applied research that has significantly advanced our knowledge of desert landscapes. Eric is now retired, but he has told me he is excited to continue to work and publish with his colleagues on the next big questions in desert research.

Excerpts from Eric McDonald's response:
I am so deeply honored to receive the 2023 Farouk El-Baz Award for Desert Research. I consider myself a true desert rat – so receiving the Farouk El-Baz award is personally for me the greatest research award I could ever hope to achieve. First, I would like to thank my colleagues Mark Sweeney, Brad Sion and Amanda Keen-Zebert for the nomination and support and my sincere thanks to Eric Kirby (UNC Chapel Hill), John Gosse (Dalhousie University), and Kiki Amit (Geological Survey of Israel) for their letters of support. I also thank the QG&G division for selecting me for this award. I am grateful to Dr. Farouk El-Baz for establishing this award, which highlights the critical importance of desert research. Dr. El-Baz had a profound impact on desert research through his novel application of remote-sensing to desert landscapes and played a central role in the determining landing sites during the Apollo Program. Dr. El-Baz has been further honored by the creators of the Star-Treks 'The Next Generation' with one of the USS Enterprise's shuttlecraft named the 'El-Baz' (how cool is that!).

I owe a special thank you to my wife Sarah and my two daughters, Rosalie and Monica, who have supported my career, my love of the desert, tolerated my frequent trips away from home, and all the dirt and dust that I brought home from my research trips.

I feel incredibly fortunate in my life to have fallen in love with the desert, geology, and soil science early in my career. I am so grateful to receive this award and to have had the joy and honor to work with some many outstanding friends from whom I have learned so much. Finally, I want to thank all my research sponsors, especially the National Science Foundation and the U.S. Department of Defense, who have provided much of my resources for the study of desert processes. It has been a tremendous honor to work with so many dedicated and talented scientists, engineers, and military officers who support our national defense.

Full award citation and response on page 23

Kirk Bryan Award

The Kirk Bryan Award for Research Excellence was established in 1951 and is given for a publication of distinction (within the past 5 years) advancing the science of geomorphology or Quaternary geology or a related field.

Our 2023 award was presented to **Simon Pendleton** for their 2019 publication:

Simon L. Pendleton, Gifford H. Miller, Nathaniel Lifton, Scott J. Lehman, John Southon, Sarah E. Crump, and Robert S. Anderson. *Rapidly receding Arctic Canada glaciers revealing landscapes continuously ice-covered for more than 40,000 years*. Nature Communications, v. 10, 445. https://doi.org/10.1038/s41467-019-08307-w

Excerpt from citation by P Thompson Davis:
The paper by Pendleton and co-authors is the most convincing report yet that current warming in the Arctic is the greatest since the Last Interglacial (MIS-5) ended about 115,000 years ago.... Pedestal ice caps respond to rapid equilibrium line altitude (ELA) rise that exposes new landscapes of varying ages at different altitudes as opposed to cirque glaciers that are commonly influenced by variables such as snow avalanching and shielding from solar insolation. The highest ice caps have remained cold-based allowing preservation of entombed plants since their burial. Within 1 meter of receding margins from 30 different ice caps, 48 *in situ* tundra plants were collected for AMS 14C dating... Of the 48 measurements of plant 14C, 26 are "greater than ages" (radiocarbon dead), 19 calibrated to >40 ka, and three calibrated to 28-38 ka, each of these three with >40 ka replicates. Given that some recently exposed dead tundra plants may begin to regrow ("zombie mosses") and then be re-entombed, *in situ* 14C measurements were made from adjacent rock samples...only one *in situ* 14C rock sample showed the possibility of early Holocene exposure when solar insolation was near peak. Thus, based on the two types of 14C data presented in the paper and the isotopic temperature record from the NGRIP ice core in Greenland, about 115 ka was the most likely time that these pedestal ice caps last receded as much as they are receded today.

Simon Pendleton (center), with co-authors Nathaniel Lifton (left) and Gifford Miller (right). Photo credit: Jen Pierce

Excerpt from Simon Pendleton's response:
It is with a great sense of honor and, frankly, surprise, that I accept the 2023 QG&G Kirk Bryan Award on behalf of myself and my co-authors. The community of geomorphology and Quaternary Geology is filled with dedicated, creative, and supportive geologists all doing incredible work, and I am humbled to merely count myself amongst all of you. In truth, this paper is a reflection of that community; it was only possible through the coming together of a range of individuals, each with their unique sets of questions, approaches, and ideas.

And as our glaciers and landscapes continue to change under a warming climate, it was only recently that I fully appreciated the irony of this particular project. The irony that the warming of the climate - the very thing we are attempting to quantify and characterize – is revealing to us, through ice recession, the data we need to do just that. On one hand, the continued retreat of these ice margins reveals more preserved landscapes that can tell us much about past geomorphic, cryospheric, and climatic processes, but on the other hand, these newly exposed materials are ephemeral, and once they are gone, the record is lost forever. The recognition of this important work provided by this award further inspires me, especially as an early career geoscientist, to continue down this path, to continue working with this amazing community to advance this science.

I want to express my gratitude to Dr. Thom Davis for spearheading my nomination and to Drs. Meredith Kelly, Mike Retelle, and Nicolás Young who all lent their support. I also owe thanks to my masters advisor Jason Briner, who not only steered me towards Giff and Baffin Island work, but also for helping me refine my science writing ability, a not insignificant task I assure you. I must also thank Giff Miller, who as my PhD advisor at the time was instrumental in guiding me through this project, and continues to mentor me to this day. Giff has also always underscored the value of developing a wide network of collaborators- without which multi-disciplinary work such as this would not be possible. Finally, my most sincere thanks to the Quaternary Geology and Geomorphology Division of GSA for this recognition.

Full award citation and response on page 25

"This [Kirk Bryan] award does not come without mixed emotions, as I am sad that my late colleague and dear friend Dr. Sarah Crump is not here to celebrate with us. Not only was she a key contributor to this work but also a source of endless support professionally and personally. The Kirk Bryan award is given to a paper that advances the field, but in Sarah's case, during her all too brief but shining career, she advanced the geosciences in her own way: through mentorship, inclusion, and community building in addition to her science. It is in that spirit of advancing the community that my co-authors and I are dedicating the monetary portion of this award to the **Sarah Crump Fellowship** to support the next generation of geoscientists in shining just as bright as Sarah."

- Simon Pendleton, Kirk Bryan award response

Sarah Crump Graduate Fellowship Fund

"Science is one of the loves of my life, and I wish with my whole heart that I could continue the work that I started. The opportunity to create a fellowship that enables young women and other underrepresented groups to study earth or environmental science in Arctic or alpine regions is the next best thing. I'm honored to introduce the Sarah Crump Graduate Fellowship Fund. I have so much confidence in and hope for the next generation of scientists."

- Sarah Crump, 16 November 2022

Gladys Cole Award

The Gladys W. Cole Memorial Research Award is restricted to investigation of the geomorphology of semi-arid and arid terrains in the United States and Mexico. It is given each year to a GSA Member or Fellow between 30 and 65 years of age who has published one or more significant papers in geomorphology. The fund was established in 1980 by Dr. W. Storrs Cole in memory of his wife.

There were no applications for the Glady's Cole Memorial Award in 2023! The QG&G Management Board encourages applications for 2024. To apply, submit a research proposal by February 1st, 2024 via this form.

Student Research Awards

QGG is proud to provide funds for 12 student research awards, the most of any GSA division! To apply for these, select "Quaternary Geology and Geomorphology" as the field of research when submitting a GSA student research grant.

The following awards were presented at the 2023 Awards Ceremony in Pittsuburgh, PA.

Peter Birkeland Soil Geomorphology Award

The Peter Birkeland Soil Geomorphology Award was established in 2016 to contribute to the advancement of soil geomorphology. The 2023 Birkeland Award was given to **Adrian Wackett**, Stanford University, for their proposal "Global w'o'rming: assessing whether earthworms weather silicates in soils." Advisor: Dr. Jane Willenbring

John A Black Award

The John A. Black Award supports graduate student field-based research on coastal processes for geomorphology research located in the USA, Puerto Rico or Canada. The 2023 award was given to **Erin Dowling**, Queen's University, for their proposal "Sedimentological and paleoenvironmental evolution of the Hopewell Cape, New Brunswick, Canada". Adviser: Dr. Elizabeth Steel.

Donald R Coates Award

The Donald Coates Award Fund was established in 2020 to support MS or PhD graduate student research on Quaternary Geology and Geomorphology. The 2023 award was given to **Abigail Axness**, Colorado State University, for their proposal titled "Uncovering the Drivers of Mountain Relief in the Granodiorite and Volcaniclastic Bedrock of Puerto Rico". Advisor: Dr. Sean Gallen

Denton, Andrews, Porter Glacial Geology Award

The Denton, Andrews, Porter Glacial Geology Award (DAP-GGA) was established in 2020 in honor of the initial primary donor's academic advisors: George H. Denton, John T. Andrews, and Stephen C. Porter. The 2023 award was given to **Kurt Lindberg**, University of Buffalo, for their proposal titled "Reconstructing vegetation and biomass changes around a southern Baffin Island lake in response to Holocene shrub colonization." Advisor: Dr. Elizabeth Thomas

Robert K Fahnestock Memorial Award

The Fahnestock Memorial Award from GSA honors the memory of the former member of the Research Grants Committee, who died indirectly as a result of his service on the committee. The award is given for the best proposal in sediment transport or related aspect of fluvial geomorphology. The 2023 recipient was **Emma Krolczyk**, Utah State University, for their proposal titled "Using single-grain OSL of anthropogenically placed rocks to determine headward gully migration in Wyoming, USA". Advisor: Dr. Tammy Rittenour.

Arthur D Howard Award

The Arthur D. Howard Research Award was established in 1992 to support graduate student research in Quaternary geography or geomorphology. The 2023 Howard Award for MS research was given to **Aman KC**, Boise State University, for their proposal titled "Bridging Science to Public: Analyzing Freshwater Flux (FWF) in Kalallit Nunnaat (Greenland)." Advisor: Dr. Ellyn Enderlin

J. Hoover Mackin Award

The J. Hoover Mackin Research Award was created in 1974 to support PhD graduate research in Quaternary geology/geomorphology. The 2023 recipient was **Raja Das**, North Carolina State University, for their proposal "Developing an empirical relationship between deep-seated landslide surface roughness, age, and velocity within the Rio Grande Canyon between Espanola and Pilar, New Mexico." Advised by Dr. Karl Wegmann

Marie Morisawa Award

The Marie Morisawa Award was established in 2006 to support promising female graduate students in geomorphology. The 2023 Morisawa Award was given to **Yueyi Che**, Stanford University, for their proposal titled "The Ghosts of Yosemite Past, Present... and Future? New Meteoric Be-10 Method to Constrain the Stability and Dynamics of Glacier Margins." Advisor: Dr. Jane Willenbring

Troy Péwé Award

The Troy Péwé Award was established in 2019 to support research grants to graduate students focusing on periglacial geomorphology or environmental geomorphology in the context of better understanding and mitigating hazards. The 2023 recipient was **Zack DeLuca**, University of Montana, for their proposal "Hydrogeomorphic response to severe flooding in Yellowstone National Park." Advisor: Dr. Andrew Wilcox

Stanley A Schumm Award

This award was established in 2012 in honor of Stanley Schumm and recognizes the contributions of graduate students in the field of fluvial geomorphology. The 2023 recipient was given to **Mariel Nelson**, University of Texas at Austin, for their proposal titled "Controls on river bank erosion timing and meander bend evolution using time-lapse lidar of the Trinity River in Texas." Advisor: Dr. David Mohrig.

Jack Shroder Award

The Jack Shroder Award was established in 2020 to support MS or PhD student research on Quaternary Geology and Geomorphology. The 2023 award was given to **Okedoyin Omololu,** Western Washington University, for their proposal "Quantifying the carbon sink of woody debris in submarine fans: An example from the Nitinat Fan in the Cascadia margin", Advisor: Dr. Camilo Ponton

Richard & Cynthia Waitt Award

The Richard B. & Cynthia A. Waitt Research Award was established in 2022 to support MS or PhD research in field-based research of surficial geology and/or volcanic processes. The 2023 award was given to **Natalie Tanski**, Utah State University, for their proposal "The role of uplift rate and tectonic mechanism in the formation of marine terrace sequences within the Calabrian forearc, NE Sicily." Advisor: Dr Tammy Rittenour

Student Awardees at the 2023 QG&G Award Ceremony, Pittsburgh, PA

2023 QG&G student awardees at the Awards Banquet. Photo credit: Jen Pierce

QG&G shirts, hats, and more!

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QG&G Endorsement at GSA Section Meetings

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acyr@usgs.gov

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alayzell@ku.edu

Northeastern
Julie Brigham-Grette
juliebg@geo.umass.edu

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South-central
Needs filling!!

Southeastern
Karl Wegmann
karl_wegmann@ncsu.edu

Full award citations & responses

The Distinguished Career Award

Citations

From Jim O'Connor, USGS
Gordon G. Grant is a geomorphologist and hydrologist for the Pacific Northwest Research Station of the U.S.D.A. Forest Service. For nearly four decades he has worked to increase understanding of how rivers and landscapes work, ranging from detailed channel morphology studies to broadscale watershed and ecosystem assessments. His work has significant applied implications, manifest in leadership in developing concepts such as 'watershed analysis' and guiding dam removal and 'critical zone' research. He has incorporated students and colleagues in all aspects of his work, developing a body of research and researchers that span the hydrologic and geological sciences. Finally, by his world renowned appetite for boondoggles, he has probably accumulated more airline miles than all other QG&G members combined!

From Tom Dunne, University of California, Santa Barbara
In the 1990s, Gordon and colleagues pioneered the systematic study of mountain stream channels and valley-floor landforms, encouraging a generation of geomorphologists to realize that these landscape elements could be explained quantitatively in terms of flow regimes and sediment supplies. He has since assembled teams of young collaborators to bring a consistently geological approach to the analysis of streamflow regimes and their response to climate change, landscape evolution, and the downstream effects of dams and their removal.

From Robb Jacobson, USGS
Gordon and I met during the hot, humid Baltimore August of 1979. We were in Ames Hall of The Johns Hopkins University, home of the Department of Geography and Environmental Engineering, affectionately known as DOGEE. Gordon meandered down the hall an into my office with a quizzical look on his face, in search of a fellow traveler. I think Gordon and I were working our way through the same questions during the first days of grad school: Who are these people in this odd department? What in the world is this DOGEE all about? Will they make me take a course in Marxist geography or sewage treatment, or both? Maybe I should, anyway? And why isn't my office air conditioned? Fortunately, we found like souls at Hopkins with interests in geomorphology, sediment transport, hydrology, backpacking, and white-water rafting.

Gordon has always been a consummate conceptualizer and while I think a lot of that is in his nature. I also know that DOGEE nurtured that tendency because the broad array of disciplines and expertise surrounding us required grad students to communicate science efficiently and effectively. In a nutshell: what is your science and how does it relate to societal needs? Bill Emmett referred to DOGEE with some accuracy as the "The Johns Hopkins School of Public Speaking". But for Gordon it has been more than efficiency of communication. It has been finding just the right words and using them with eloquence and enthusiasm – for example, "the geologic knife", a concept Gordon made famous in the Marmot Dam removal Youtube video, which shows Gordon at his most enthusiastic. Other examples: in his seminal paper on critical flow Gordon captured the importance of hydraulic jumps as the "brake" to flow acceleration. Or the concepts within a paper on conceptual models in the Treatise of Geomorphology: "This history of fluvial geomorphological models can be viewed as a braided river of ideas beginning with a bifurcation in thinking between Gilbert's concept of landscape processes as a balance among pertinent forces, and Davis' concept of the geographic cycle."

And that effectively conceptualizes Gordon's diverse contributions to the geomorphic and hydrologic sciences – steep rivers, critical flows, dams, groundwater, and even physics of lava flows: "A braided river of ideas..." that has, and will continue to be, foundational to the understanding of rivers.

Gordon's Garden

springs, boulders, banjo
your voice, your joy, your insight
water us, we grow

-William Dietrich, University of California, Berkeley

From Jon Major, USGS

The 2023 DCA Awardee, Gordon Grant. Photo: Jim O'Connor

Gordon Grant, scientific statesman and raconteur extraordinaire, is a most deserving recipient of the QG&G Distinguished Career Award. Several tonight will describe his noteworthy accomplishments that serve as the foundation for this honor. But it's not just his keen eye and instinct that make him an influential scientist—it's also his ability to easily connect with people, establish long-lasting collaborations and friendships, to work across disciplinary boundaries, to regale the masses and the few with colorful accounts of scientific findings and their significance [be careful standing between Gordon and a reporter!], and to just have fun doing science that makes him such an enjoyable, entertaining, and valued colleague.

I've had the pleasure of working with Gordon on projects related to fluvial responses following dam removals, risk assessments and geomorphic analyses of landscapes reset by volcanic eruptions, and analyses of the hydraulics of lava flows. Regardless of whether the driving fluids were inviscid or highly viscous, Gordon had the keen ability to focus in on the critical issues at hand and to distinguish whether those issues represented 'big numbers' or 'little numbers', that is whether the solutions would contribute to and seriously advance science or influence policy decisions, or whether they were just interesting but incremental advances. Many times, Gordon has poked holes in my thoughts, ideas, or explanations and forced me to refocus more carefully on the 'big' versus the 'little'. This slogging through the trenches together has forged a professional and personal relationship that is truly treasured.

For much of his career, Gordon has used a page from the playbook of a famous geomorphologist—Luna Leopold—and managed to wend his way into field work and field visits (with extraordinary ease but with little apparent financial means for research) along river systems in many locales. For someone who works for a Federal Agency that, shall we say, is not excessively flush with financial resources for research, he has managed to connect himself to what we might call 'exotic' projects—particularly involving raft trips along rivers in spectacular places. I hope someday he writes his memoir and tells us all his secret sauce.

But as much as we chide Gordon for his many boondoggles—er projects—therein lies the impact of the collaborations and personal connections he has forged, which have allowed him the ability to tackle, debate, and contribute to problems of scientific and social significance.
Congratulations, Gordon, on receipt of this Distinguished Career Award.

From Frank Magilligan, Dartmouth University

There is no single criterion for nominating someone for a Career Award as there are many metrics that typify an illustrious career. One could of course simply count the number of publications and their associated citations, but that approach, although important, fails to truly capture an individual's impact on the discipline. Another way would be to evaluate whether the individual has helped shape the discipline, and Gordon Grant has done so – and done so often.

There are many profound paradoxes that characterize Gordon Grant but perhaps the most profound is: how could someone with such [terrible] eyesight be so intellectually and professionally visionary? And so visionary in so many sub-fields? Whether publishing on hillslope processes, sediment transport, the role of large woody debris on stream processes, or the conceptual development of dam removal, Gordon has moved the needle on key geomorphic topics and helped set the research trajectory of these fields. That visionary perspective started early. Perhaps because of his...vision, he kept his ear to the ground of other disciplines and was able to adroitly combine emerging topics in forestry and aquatic ecology with his geomorphic acumen. There was a fear in the 1980s that fluvial geomorphology had become intellectually stagnant, and some of the best empirical and theoretical work in fluvial geomorphology was being done by aquatic ecologists. But in 1987 Gordon and co-authors Kathleen Sullivan and Tom Lisle published one of the first geomorphic papers documenting the links between channel bed architecture and salmonid habitat. Perhaps this combination of pan-disciplinary vision and his geomorphic prescience is best represented

by Gordon's 1990 GSAB paper "Pattern and origin of stepped-bed morphology in high-gradient streams, Western Cascades, Oregon". With its focus on habitat units, channel gradient, local-to-watershed-scale controls on sediment transport, this paper helped launch the saliency of fluvial geomorphology. I remember reading this paper in high school, and it changed my life.

Moreover – and in part why he has well-earned this Career Award – he has engaged in this research trajectory as someone deeply committed to the science and policy of resource management while at the same time serving as an important mentor to junior faculty, graduate students, and federal personnel. Gordon has an insatiable curiosity and a heartfelt commitment to protecting and managing our nation's resources, and I can say without reservation that he is someone that clearly merits this recognition.

From Chris Paola, University of Minnesota
If you had only been a leader in sustainable river management; if you had just done pioneering work in vegetation and woody dynamics; if you had simply brought a whole new perspective on critical flow; if you had merely been the most enthusiastic and generous of colleagues: any one of these would have been enough and more. Dayenu, Gordon, our "big two-hearted" comrade, and congratulations!

From Kyle House, USGS
Gordon Grant is truly a philosopher in geologist's clothing. His capacious brain is amazing as is his ability to brainstorm on any concept at any place and time. His pontificating rants are amazing and hilarious at times, and they often strike to the core of fundamental concepts in geology and geomorphology. I have enjoyed every minute I have spent in the field with Gordon, and I love to make him laugh uproariously.

From Roy Haggerty, Louisiana State University
Working with Gordon has always been a true pleasure. His combination of enthusiasm for geomorphology, his keen intellect, and his great sense of humor have always been a treasure for me. I co-advised several students with Gordon, and while he was never paid by OSU, you would never have known it. He treats every student well, and always gives generously of his time and advise. I remember one anecdote. A team of us worked for several months – unsuccessfully, unfortunately – to get a Critical Zone Observatory in the Willamette Basin. We learned of a meeting where a key individual would be present, and we wanted to work every angle to be successful. The meeting was on the east coast, and Gordon agreed to go and present a poster for the express purpose of having a single conversation. On the day of the poster presentation, his session wasn't until the afternoon, so Gordon decided to do a little sightseeing. Gordon caught a bus to his destination. The only problem was that he got on the wrong bus – an express bus that was going a couple of hours away. Upon arriving the return bus wasn't for several hours. He got back on the express bus back to the conference location, the day was over, no conversation. He had a good, quick getaway to the east coast, though!

Graduate school at Johns Hopkins. Photo: Robb Jacobson

From John Selker, Oregon State University
The Best Question
You know the guy who, after a seminar, asks the best question almost every time. At OSU that would be Gordon Grant. Kind but penetrating, Gordon has an absolute knack for putting his finger on the key point. Asking a strategic question is the crux of scientific advancement. Gordon is not cagey, trying to keep his ideas to himself, nor is he seeking to boost his own ego. He is just "all in" in the science of geomorphology, and motivated by the joy of exploring ideas to see which float to the top, and which fall by the wayside after deeper consideration. Beyond his questions, Gordon's papers have shown him to be a distinguished scientist in his field for decades now, and it is fitting and gratifying that he was selected for this award.

From Arjun Heimsath, Arizona State University and QG&G Division Chair

Gordon played a very important role for me as well while I was a student (a lot of my work back then was in the Oregon Coast Range). Gordon's approachability, enthusiasm and relatability to all the topics that I was interested in was memorable and he's remained a friend ever since. The engaged twinkle in his eye is truly infectious! I am thrilled he's getting the DCA this year!

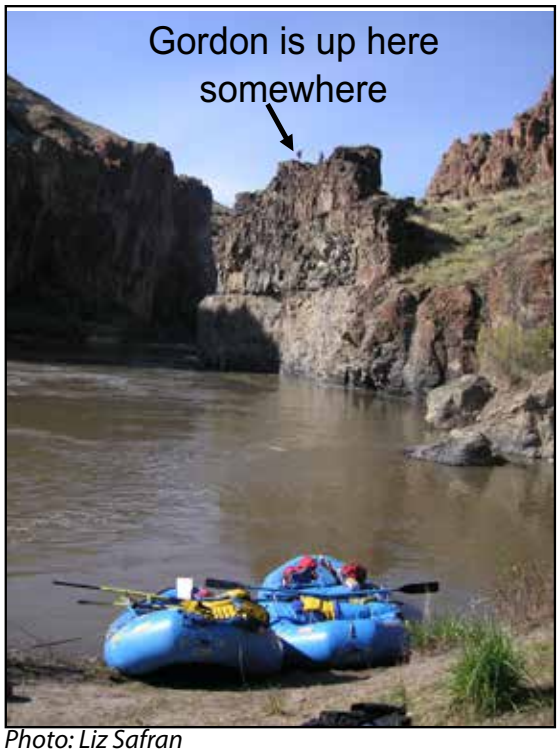

Photo: Liz Safran

From Dorothy Merritts, Franklin and Marshall College

Long ago, while a graduate student at the University of Arizona in the labs of Bill Bull and Vic Baker, I attended a geomorphology field trip that included many student contemporaries from The Johns Hopkins graduate program of M. Gordon "Reds" Wolman. One of these was Gordon Grant, and as I was quite reserved at the time, I watched quietly from afar as he talked in an animated fashion at various outcrops and played his banjo at night around the campfire. For decades I wistfully hoped to get a chance to interact with him, as he had such a joyful presence and personality and fascinating research. Of course, I also read his papers and was struck by how he was shifting the field of geomorphology in new directions, including toward the role of plants and animals in landscape-forming processes. Given my early focus on tectonics, we didn't cross paths often, but fortunately, he became President-Elect of AGU's Earth and Planetary Surface Processes when I moved up to become President in 2020. Together we worked closely for two years, which just happened to coincide with the global pandemic and AGU's first virtual meeting in 2020. We became close friends and allies in our efforts to help the geomorphology community during such a difficult time. Now when I see him at meetings and on field trips, we sit together for meals and laugh over drinks. Sometimes we talk on the phone about all sorts of fascinating things for an hour, and I count my blessings that I got the chance to become a close friend of Gordon Grant, an amazing geomorphologist and human being.

From Rachel LovellFord, former student

Words of reflection on Gordon: I have a sincere and deep respect for Gordon because he embodies three values that he also encouraged me and his other students to embrace: curiosity, camaraderie, and kindness. My graduate school experience in Gordon's lab taught me how these are at the root of how to be a good scientist. He welcomed me into his lab even though I was a non-traditional student, encouraged healthy debate ("Is a wading measurement a measurement or an estimate?"), and taught me to ask,"is it a big or a small number?". Also, as I'm sure many can attest, he always greeted me with a generous spirit when I came to visit him for office hours. Although his scientific contributions proved critical to the advancement of the field of fluvial geomorphology, what I most want to honor is how Gordon approaches his work. Thank you for who you are and how you have built and supported your community Gordon.

From Barbara Heitkamp (Burkholder), OSU Masters student 2005-2008

I had the privilege to work with Gordon for my masters degree, and those brief years serve as a cornerstone for my current career and how I approach my work as a water resources educator. Gordon an amazing scientist, but he is also an amazing science communicator - able to take complex concepts and distill them in a way that makes them relatable and digestible for whatever audience he is in front of. His gift of metaphor and narrative is unparalleled! "What would Gordon say?" Or "How would Gordon build a story around this?" Are not uncommon thoughts for me to have on a regular basis, even though I have been out of graduate school for more than a decade!

There are countless moments with Gordon that I remember with fondness - the great conversations we would have driving to and from Portland to meet with my research sponsor, the look of pride on his face when I could pick out the wine whose grapes were grown from volcanically-derived soil, the whitewater rafting trips down the Clackamas and Sandy rivers (best way to do science ever!), his squeals (yes, squeals) of delight as the Marmot Dam came down

in 2007, the interactions and lasting friendships I developed with the other students and staff in his research group - I am forever thankful for all of them.

One interaction that was a keystone moment for me was very early on in my masters. Gordon took me to visit the Clackamas River that was in flood stage. We stood on a bridge overlooking the turbid river with and I made the comment, "Wow! That's an angry river!" Gordon immediately pulled back, looked at me and said, "It's not angry - it's just stretching its legs! It's what rivers do." That simple statement challenged my perception of how rivers move and operate and how we humans respond to them. It helped me look at the landscape from the river's perspective versus how it impacted human lives (and the decisions we make that don't manage the risk posited by rivers seriously). It's a distinction I continue to make in my work today as I work with the public and their perception of nature and watersheds.

Many many congratulations to Gordon!

From Laura Hempel, USGS (former student)
Beyond "distinguished," I would also describe Gordon's career as "enviable." Gordon's contributions to science are unequivocal and indelible and he's made those contributions in style to boot (e.g., working on [and floating down] some of the most interesting, diverse rivers in the world!). Gordon's ability to translate complex concepts into accessible, captivating, thought-provoking stories has inspired countless students and peers alike.

One of his most important contributions though has been fostering a welcoming, collaborative, collegial community. Gordon was my graduate advisor and we used to joke that through Gordon we were no more than a few degrees removed from *literally* anyone in the fluvial geomorphology community. That's because Gordon makes connections easily and frequently, and he freely passes on those connections to those around him. Whether Gordon's bringing folks together at conferences or around the campfire while he plays the banjo into the wee hours, he has the rare ability to foster the kind of engaging, collaborative experiences that leave an impression.

From Safeeq Khan, University of California Division of Agriculture and Natural Resources (former post-doc)
"My interaction with Gordon started in 2010 when I joined Oregon State University as a postdoc under his mentorship. I was actually planning to go to Canada but one phone call with Gordon clicked and I decided to join his lab. As it turned out, I could have not asked for any better, Gordon turned out to be an awesome colleague, a friend, and a hell of a mentor. I owe everything that I achieved to Gordon. In academia we are all used to learning the tools of science from your mentors, Gordon is different. He would tell me that you know the tools better than me and emphasized on teaching me the essence of science and why we do what we do. He gave me the freedom to explore, ask questions, and pursue new ideas. Most importantly, he cared about me and my loved ones and always ensured that I was doing OK. He is the most selfless scientist I have met who can talk hours sharing his ideas to others with zero expectations. I will admit, at times, I would get jealous and wish that he could hold on to some of those ideas until we get our own proposals funded and papers published. But his mission was to advance science and address issues, hands don't mean much. If you are really looking for a role model in academia, look no further than Gordon. He truly deserves this distinguished career award."

Response from Gordon Grant

I am extremely grateful and honored to accept this year's Distinguished Career Award, or as my wife refers to it, the "Extinguished" Career Award. I am very gratified that this award comes from the QG&G community writ large – it means a lot that the group that I consider to be my intellectual "home waters" for over 40 years would choose to bestow this honor.

In reflecting on what this award means (aside from being an extremely polite way of encouraging me to retire), I find myself wondering: how did a hippy, dippy, and drippy whitewater river guide and dilettante banjo player find himself here today? And the answer is simple: I had a LOT of help. Which led me to thinking about how communities such as ours help each other along through different forms of mentorship. Like most of you, I have been mentored every step of that winding, meandering rivercourse that constitutes a career.
First and foremost, I was mentored by my family: my neurobiologist father who was fond of beginning our dinner time conversation with the provocative question: "What did you learn today?", my younger siblings who all competed with me (generally unsuccessfully) for air time in answering that question, and my mother who made the

dinner that made all of this possible. From this I took away a deep pleasure in the importance of asking questions, and the give and take that can happen over good food.

Then by my wife Barbara and sons, Daniel and Michael, who mentored me by patiently enduring my long-winded lectures about the importance of the Froude number (Michael, age 7, once interrupted one of my diatribes by saying "Dad, you're like a book with a mouth!"), by gracefully accepting my frequent absences from family events, and by teaching me the hard lesson of how to occasionally say no to yet another junket. And to love me in spite of all of this.

Then of course my formal and semi-formal academic mentors: Reds Wolman, who taught me how to have confidence in my own instincts, and the importance in distinguishing between big and little numbers, Fred Swanson, who taught me of the poetry of field work, how to navigate the Federal research bureaucracy without losing my soul, and how to not take myself too seriously. Tom Dunne, my academic elder brother, who taught me how to ask the right questions and appreciate a nuanced answer. Vic Baker, who reminded me that the geomorphic discipline has a rich intellectual history that's worth knowing. And to Bill Dietrich, Dick Iverson, Michael Manga, Jim Kirchner, Gary Parker, and Chris Paola, who taught this mathematically-challenged soul of the rich beauty of a fundamental equation.

And strange as it may sound, I consider my employer, the research branch of the U.S. Forest Service, Pacific Northwest Research Station, to have been a mentor as well: by allowing me to have one of the least encumbered careers in the U.S. government, encouraging me to follow my curiosity, supporting my work even when controversial, and wisely not requiring me to supervise other Federal employees. They may not have always understood what I was up to, but they let me do it freely, and thereby demonstrated that it's possible to have a truly satisfying scientific career while working for Uncle Sam.

But beyond these foundational mentors are the astonishing panoply of my sustaining mentors: my colleagues, research assistants, students, and friends (and the lines between these categories have faded over time). They have taught me more about doing science than I could ever have figured out on my own. First, I can assure you that I would not be here were it not for the exceptional support of my relay team of research assistants: Shannon Hayes, Sarah Lewis, and Becky Fasth. If I made one intelligent choice in my career it was to acknowledge that there are many important things that I am not very good at, and I needed to address that by hiring a cadre of extremely talented co-workers. They were my colleagues in every aspect of the work, from the field to the analysis, to the writing to the many presentations. They were my right and left hands, and a good portion of my brain as well. I can't thank them enough...they really should be up here with me.

My students were part of this mentoring as well. I think I learned more from them than they from me. I got to be part of their journeys, which continue to this day. And there are few experiences more satisfying than to watch your former students stretch their wings and fly high.

My many friends, colleagues, heroes, and heroines too numerous to name, (but you know who you are) have mentored and put up with me more than I probably deserve. Pretty much everything I've tried to learn along the way: how to recognize paleoflood deposits, conduct flume experiments, think deeply, write cogently, ask and answer good questions, has come from their mentorship. And to top it off, it's been a hell of a lot of fun. I can honestly say that the very best part of a scientific career has been the joy of sharing the ride with some of the brightest and most generous people around.

This list of mentors would be incomplete if I didn't acknowledge the greatest mentor of all: the Earth itself. What a privilege it has been to spend one's career studying the rivers, landforms and history of this loveliest of planets, and occasionally getting a glimpse of her secrets and mysteries. We are all lucky people, but I consider myself a very fortunate individual to have traded in my oars for this marvelous career with such a wonderful community, and I deeply thank all of you for this honor and for helping to make it happen.

The Farouk El-Baz Award for Desert Research

Citation by Mark Sweeney

It gives me great pleasure to honor Eric McDonald, this year's Farouk El Baz Award winner. This was a joint nomination between me, Amanda Keen-Zebert, and Brad Sion. Eric has made extraordinary contributions to research in desert environments and also provided excellent mentorship to the next generation of desert researchers.

Eric's scientific journey has resembled in some ways a soil climosequence, shifting ever more arid. His studies began not in a desert, but in the temperate climate of Arcata, California (MAP 53") where he learned soils and geology from Bud Burke at Humboldt State. He moved to the semi-arid climate of southeastern Washington (MAP 20") where he worked with Alan Busacca at Washington State University on loess, soils, and the Channeled Scabland. He earned his Ph.D. at the University of New Mexico in Albuquerque (MAP 9") where he worked on alluvial fan sequences and dust additions to soils in the Mojave Desert with Les McFadden and Steve Wells. To achieve full desiccation, in 1997 he began his career at the Desert Research Institute in Reno, Nevada (MAP 7.5"). His colleague Kiki Amit told me, "He is a real desert person, and in the hottest deserts he is like a fish in the water." Eric likes the desert hot like he likes hot Hatch chile, commenting on how it is "pleasantly warm" while sitting in a soil pit at 100 degrees.

Eric's research has been rich with collaboration extending across an incredible breadth of geoscience disciplines including pedology and soil chemistry, geochronology, hydrology, sedimentology and geomorphology. He enjoys sharing his knowledge and experiences with others and learning from his colleagues. He encourages his mentees to bring their strengths to the table and take ownership of their research, and he instills confidence in their abilities.

Eric is commonly heard saying "soils don't lie." He links what he sees in the soil back to landforms and landscape evolution, making him a quintessential soil geomorphologist. At DRI, Eric built a cornerstone program focused on assisting the military in "reading the landscape" to improve maneuverability in desert environments and learning about the Quaternary history of desert landscapes through pedologic and geomorphic lenses. Eric's significant contributions to desert research are multidisciplinary but focus on three primary areas: 1) soil hydrology and its influence on geomorphic development, 2) causes and timing of alluvial fan activity, and 3) influence of dust on soils and geomorphology.

In the Mojave Desert, Eric applied a soil-water balance model to evaluate calcium carbonate distributions in desert soils, the results of which directly influenced conceptual models of carbonate development in response to Pleistocene-Holocene climate change. Also in the Mojave, he documented the influence of dust on pedogenic development and the formation of desert pavements. Building on this work, Eric and his colleagues revealed how hydraulic properties changed along desert soil chronosequences revealing important linkages between hydrologic processes, climate variations, vegetation community structure, and soil morphologic observations that remain in use for evaluating desert landscape processes globally.

Eric's early work on soil development on alluvial fans in many corners of the Mojave Desert later extended to southwest Arizona, Baja Mexico, and Chile. The results of this work led Eric to present an interesting hypothesis: that alluvial fan activity was driven primarily by increased tropical cyclone activity, rather than by monsoons or summer thunderstorms. His work with Jose Luis Antinao concluded that ENSO-driven tropical moisture could likely produce fan activity with or without vegetation change.

Eric and his collaborators have also worked to better understand dust emissions in the southwest U.S. and map landscapes that may serve as analogs to desert regions where the US military is deployed. Eric's research assists the military in avoiding dust-prone areas that might cause issues with mobility, visibility, functionality of weaponry and electronics, and health of personnel.

To conclude, Eric McDonald's contributions to desert research have been wide-reaching, influencing not only academic thinking but applied research that has significantly advanced our knowledge of desert landscapes. Eric is now retired, but he has told me he is excited to continue to work and publish with his colleagues on the next big questions in desert research.

Response from Eric McDonald

I am so deeply honored to receive the 2023 Farouk El-Baz Award for Desert Research. I consider myself a true desert rat – so receiving the Farouk El-Baz award is personally for me the greatest research award I could ever hope to achieve. First, I would like to thank my colleagues Mark Sweeney, Brad Sion and Amanda Keen-Zebert for the nomination and support and my sincere thanks to Eric Kirby (UNC Chapel Hill), John Gosse (Dalhousie University), and Kiki Amit (Geological Survey of Israel) for their letters of support. I also thank the QG&G division for selecting me for this award. I am grateful to Dr. Farouk El-Baz for establishing this award, which highlights the critical importance of desert research. Dr. El-Baz had a profound impact on desert research through his novel application of remote-sensing to desert landscapes and played a central role in the determining landing sites during the Apollo Program. Dr. El-Baz has been further honored by the creators of the Star-Treks 'The Next Generation' with one of the USS Enterprise's shuttlecraft named the 'El-Baz' (how cool is that!).

I owe a special thank you to my wife Sarah and my two daughters, Rosalie and Monica, who have supported my career, my love of the desert, tolerated my frequent trips away from home, and all the dirt and dust that I brought home from my research trips.

I am so grateful to have had the good fortune to study the many wonders of arid landscapes, to conduct research in many of the world's great deserts and share my thoughts regarding soils and desert surficial processes with many friends and colleagues. Most of my research over the last 40 years attempted to bring together soil science with a range of surficial processes, ecohydrology, dust emission, and Quaternary climate and tectonic histories. This work has convinced me (and I hope a few others) that soil characterization is essential in establishing both local and regional stratigraphic correlations among a wide variety of desert landforms and deposits. Moreover, linking soil hydrology across a range of soil processes from infiltration to evapotranspiration has formed a foundation is to establish both patterns of local desert-plant community structure to illuminating how regional climate change is recorded in desert soils. Chasing distinct soils across desert regions has been an exciting venture to establish propound relations among climate, tectonics, and regional deposition of eolian and fluvial deposits. I have also focused much research over the years on supporting military operations in desert environments, primarily through efforts for improving the mitigation and management of federal lands in the SW U.S. and supporting the testing and evaluation of materiel for use in extreme desert environments. Through my research endeavors, I have come to believe that deserts soils are the most complex soils to describe, sample, and study due to a myriad of physical, hydrological, and geochemical processes that drive their formation and stability. I have focused my research on how to use this complexity to elucidate a wide range of desert features, mysteries, and histories.

Science is a wonderfully social enterprise, and I am fortunate to have journeyed with friends and colleagues across a wide range of desert settings. The early friendship and mentoring of Bud Burke (Humboldt State), Alan Busacca (Washington State University), Les McFadden and Steve Wells (University of New Mexico), and Steve Reneau (Los Alamos Nation Laboratory) were formative, establishing a critical foundation for my work. Collaboration with outstanding colleagues in a wide range of fields were sources of continual insight. These include desert plant ecology from Joe McAuliffe (Desert Botanical Gardens), soil hydrology from Michael Young (Jackson School of Geosciences) and Todd Caldwell (USGS), desert soils from Bruce Harrison and Kiki Amit, geochronology from John Gosse (Dalhousie University), Jose Luis Antinao (Indiana Geological Survey), Brad Sion (Desert Research Institute), and Ed Rhodes (University of Sheffield), neotectonics and surficial geology from Eric Kirby (University of North Carolina, Chapel Hill), Claudia Lewis (Los Alamos National Laboratory), and Carlos Sancho (University of Zaragoza), dust and eolian processes from Mark Sweeney (University of South Dakota), and the testing and evaluation of military equipment and operations from Graham Stullenbarger (U.S. Army, Yuma Proving Ground).

I feel incredibly fortunate in my life to have fallen in love with the desert, geology, and soil science early in my career. I am so grateful to receive this award and to have had the joy and honor to work with some many outstanding friends from whom I have learned so much. Finally, I want to thank all my research sponsors, especially the National Science Foundation and the U.S. Department of Defense, who have provided much of my resources for the study of desert processes. It has been a tremendous honor to work with so many dedicated and talented scientists, engineers, and military officers who support our national defense.

The Kirk Bryan Award

Citation by P Thompson Davis

The paper by Pendleton and co-authors is the most convincing report yet that current warming in the Arctic is the greatest since the Last Interglacial (MIS-5) ended about 115,000 years ago. The paper is one result from Simon Pendleton's Ph.D. dissertation at the University of Colorado. The paper benefited greatly by Pendleton's six co-authors, especially Giff Miller for his guidance of the overall project. Pedestal ice caps respond to rapid equilibrium line altitude (ELA) rise that exposes new landscapes of varying ages at different altitudes as opposed to cirque glaciers that are commonly influenced by variables such as snow avalanching and shielding from solar insolation. The highest ice caps have remained cold-based allowing preservation of entombed plants since their burial. Within 1 meter of receding margins from 30 different ice caps, 48 in situ tundra plants were collected for AMS 14C dating, thus the dead plants, primarily Polytrichum moss, only became exposed the same year that they were collected. Of the 48 measurements of plant 14C, 26 are "greater than ages" (radiocarbon dead), 19 calibrated to >40 ka, and three calibrated to 28-38 ka, each of these three with >40 ka replicates. Given that some recently exposed dead tundra plants may begin to regrow ("zombie mosses") and then be re-entombed, in situ 14C measurements were made from adjacent rock samples to model cumulative exposure and burial history. Of the nine in situ 14C study sites with plant 14C ages >40 ka, only one in situ 14C rock sample showed the possibility of early Holocene exposure when solar insolation was near peak. Thus, based on the two types of 14C data presented in the paper and the isotopic temperature record from the NGRIP ice core in Greenland, about 115 ka was the most likely time that these pedestal ice caps last receded as much as they are receded today.

Response from Simon Pendleton

It is with a great sense of honor and, frankly, surprise, that I accept the 2023 QG&G Kirk Bryan Award on behalf of myself and my co-authors. The community of geomorphology and Quaternary Geology is filled with dedicated, creative, and supportive geologists all doing incredible work, and I am humbled to merely count myself amongst all of you. In truth, this paper is a reflection of that community; it was only possible through the coming together of a range of individuals, each with their unique sets of questions, approaches, and ideas. With that I want to begin by thanking all my co-authors for their input, expertise, and support.

As described in the citation, this work has involved many individuals over several decades to come to fruition. It took the chance collection of preserved plants nearly 60 years ago, some not insignificant improvements in radiocarbon dating, the invention of an entirely new surface dating technique (cosmogenic exposure dating), and the perseverance of individuals in the pursuit of understanding these landscapes and the climate secrets they hold. Of course, there was much hard work, including many hours of walking ice margins, and the processing of hundreds of preserved plants through Scott Lehman and John Southon's labs. Not to mention three days tent-bound in a snowstorm on Baffin Island where Giff, Scott and I realized the need for independent surface exposure constraints. Here we had Nat Lifton to thank for providing those needed constraints through in situ cosmogenic radiocarbon. The final piece of the puzzle came through modeling ice cover histories, which was only possible with collaboration with Bob Anderson and Sarah Crump. In many ways, this paper encapsulates the theme of the Kirk Bryan award: the innovations made by others over past decades enabled our team to continue to advance the field and our understanding of these glacier-climate systems.

And as our glaciers and landscapes continue to change under a warming climate, it was only recently that I fully appreciated the irony this particular project. The irony that the warming of the climate - the very thing we are attempting to quantify and characterize – is revealing to us, through ice recession, the data we need to do just that. On one hand, the continued retreat of these ice margins reveals more preserved landscapes that can tell us much about past geomorphic, cryospheric, and climatic processes, but on the other hand, these newly exposed materials are ephemeral, and once they are gone, the record is lost forever. The recognition of this important work provided

by this award further inspires me, especially as an early career geoscientist, to continue down this path, to continue working with this amazing community to advance this science.

This science would not be possible without the contributions and encouragement of so many. I want to express my gratitude to Dr. Thom Davis for spearheading my nomination and to Drs. Meredith Kelly, Mike Retelle, and Nicolás Young who all lent their support. I also owe thanks to my masters advisor Jason Briner, who not only steered me towards Giff and Baffin Island work, but also for helping me refine my science writing ability, a not insignificant task I assure you. I must also thank Giff Miller, who as my PhD advisor at the time was instrumental in guiding me through this project, and continues to mentor me to this day. Giff has also always underscored the value of developing a wide network of collaborators- without which multi-disciplinary work such as this would not be possible. Finally, my most sincere thanks to the Quaternary Geology and Geomorphology Division of GSA for this recognition.

This award does not come without mixed emotions, as I am sad that my late colleague and dear friend Dr. Sarah Crump is not here to celebrate with us. Not only was she a key contributor to this work but also a source of endless support professionally and personally. The Kirk Bryan award is given to a paper that advances the field, but in Sarah's case, during her all too brief but shining career, she advanced the geosciences in her own way: through mentorship, inclusion, and community building in addition to her science. It is in that spirit of advancing the community that my co-authors and I are dedicating the monetary portion of this award to the Sarah Crump Fellowship to support the next generation of geoscientists in shining just as bright as Sarah.

Necrology

In the last year, we received notice of the passing of our colleagues listed below:

Sarah E. Crump
Kenneth L. Cole
Brian B. Tormey
Allan James
Ed Keller
Richard C Heathcote
Richard J. Gentile
Richard E. Faflak
Carol S. Breed-McCauley
Ed Evensong

QG&G Division Management Board Meeting

Sunday, October 15, 7-10 PM
In person at the Westin Pittsburgh Hotel, Cambria East Room, Pittsburgh, PA
Remote participation via Zoom

1. Introductions:
   - In person: Rick Ortiz (GSA Council liaison), Karen Gran, Jen Pierce, Nick Sutfin, Eric Portenga, Mark Sweeney, Brad, Johnson, Lee Corbett, Scott Burns, Arjun Heimsath, Lisa Ely, Karl Wegmann, Jenn Aldred, Jill Marshall, Jason Rech, Brian Yanites
   - Remote: Janet Slate, Sarah Schanz, Helen Dow, Emily Apel
2. Vote of Management Board on Sarah Schanz as Communications Coordinator
   - Unanimous vote in favor of this appointment.
3. Update on 5-year report (Arjun)
   - Diversity—Goes hand-in-hand with increasing membership and publicizing societal relevance of our research.
   - Communications and getting our message out. We now have a Division Communications team.
   - Changing the name from Quaternary Geology and Geomorphology to something that can be better comprehended. Discussed later in the meeting
   - Data needed on why geosciences numbers are decreasing.
   - Promotion and marketing of our division and science is one of our greatest challenges.
   - We will post the 5-year report on QG&G website
4. Arjun proposed a discussion of name change of our division
   - It might upset some people who are attached to the name, but Quaternary is something that many people don't recognize
   - Several of the early career panel members agreed with the idea of a name change
   - This is a name that defines us in Geology to a geological audience. Geologists know what Quaternary Geology and Geomorphology is all about. Other divisions have names that define their branch of geology. We don't want to alienate the older members.
   - We need to determine who is our target audience.
   - We want to recruit new people, young people.
   - If we do it, we should have a transition period so that people know that it has changed
   - Proposed action: Form a committee to gather responses, explore possible names and propose a course of action.
     - » Ask the membership for feedback, name suggestions and opinions on the name change before moving forward with any action.
     - » Would we have a vote from the community? Create a poll.
5. Diversity, Equity and Inclusion
   - Eric Portenga is the new DEI coordinator on the QG&G Management Board. This position was added to the QG&G Board via a change in the bylaws voted on by the participants at the Division Membership Meeting at the 2022 GSA meeting.
   - Eric will spend this first year figuring out where we are and what we want to do. Reach out to Nan Stout (Ethics at GSA) and Elizabeth Long (Director of DEI for GSA) to find out what GSA has been doing. Focus on the DEI issues that we as a division can have more control over for our division.
   - Revisit goals that were set by original Division DEI ad-hoc committee, QG&G Includes
   - Upload the new Division Bylaws that include this position to the Division website
   - Eric suggested that all QG&G board members take online RISE training on GSA's website
   - Set up listening sessions for different demographics within our division
   - Communicate via social media and website.
   - There is currently nothing on GSA's main page about DEI issues or diversity in the geosciences. It's in a drop-down menu, but takes some effort to find it.
6. Communications Committee—Sarah Schanz is coordinator, Jill Marshall co-leader. Jenn Aldred and Allison P. are on committee
   - 3 newsletters planned—
     - » 1---Fall business meeting, awards,
     - » 2—who's running for panel and board
     - » 3—summer, what do you need to know for GSA
   - Social media--we have ways to advertise relevant research avenues in QG&G, post our funding for students who are doing relevant research. Get the word out about jobs and opportunities for people in the geosciences. Reach out to different communities
     - » Committee decided to move off Twitter/X platform. Does not align with our values.
     - » Committee created survey for our QG&G booth and at business meeting asking what platforms people use. What

are the most effective for us to use?
    - » Our student board rep suggested Tik Tok and Instagram.
- There are different posts for different audiences—outreach vs information to existing members, posts should be cultivated for different ages, groups
- Student award winners send something about their research; board members send posts
- Communications committee has the mandate from the Management Board to take these suggestions and move forward with the social media as they see fit. Make sure that committee fact checks or checks DEI before resharing.

7. Financial report (Scott Burns)
    - New fund to pay for hotel, travel and registration to student awardees. Next year this will go into their award letter.
        - » Next year we might limit the funds for hotel to encourage students to reserve early and share
        - » Is there a way to get the funds to the students ahead of time rather than reimbursing them afterward. Go through the departments?
    - Scott presented the financial report from 2022 and the proposed 2023 budget. Proposed expenses $19,850. Surplus of $5593. Financial report on file in QGG Dropbox
8. Nomination process for panel and board elections—how to simplify? (Karl)
    - Do a better job of soliciting nominations at the meeting
    - Difficult to get full slate of 2 candidates for each panel position and 2 for 2nd vice chair
        - » Could we nominate 4 or 5 for panel and ballot says vote for 3?
        - » What if there were only 1 candidate for 2nd vice chair in some years?
9. Student awards
    - Student award selection procedure—how to simplify?
        - » Reduce number of reviewers and increase number of proposal that each one reviews to about 8 per reviewer
        - » Jen automatically added the advisor of each student who submitted a proposal to the review panel. That made more people aware of the QG&G awards and was a successful approach. Repeat again next year.
        - » Suggestion—start with management board + student advisors as reviewers. Then see if you need to add more at-large reviewers
        - » Assign a few people to cull the volcanology awards to those that meet the Richard Waitt award eligibility terms.
10. Nominations for Distinguished Career Award
    - This year Arjun, Mark, Jen and Lisa solicited list of names and selected 4 to nominate
    - Continue this practice. It's a way to broaden the pool under consideration
    - We could have a nominating committee select 1-2 new names each year. Candidates remain in the pool for 3 years.
11. Other professional awards
    - Gladys Cole—no applications in last 2 years. Need to advertise.
12. We have an official QG&G Division Booth. GSA created banner, brochures.
    - Tell people that there are 3 QR codes—scan one to become a division members, one to purchase QG&G merchandise, one to take our communication survey.
    - Circulated a sign-up sheet for board members to volunteer time at the booth
13. Membership: Our membership is steadily declining.
    - We discussed this last year, but didn't act on the ideas. The Division booth is one new way of reaching out.
14. Start thinking about and working on ideas and conveners for topical sessions, field trips and short courses at 2024 GSA meeting in Anaheim
    - Kirk Bryan Field Trip. We need to make sure that one is organized for the 2024 meeting in Anaheim. Possible topics and field trip leaders:
        - » Coastal geomorphology, marine terraces, Tom Rockwell (soils), tectonics, Palos Verdes, urban stream restoration, Catalina Island
    - Division Chair (Mark Sweeney) is primary person responsible for drumming up fields trips and topical session proposals
15. Division Chairs' meeting report (Mark Sweeney)
    - GSA will take photos of people at the division booths
    - GSA priority is to increase membership
    - GSA is running in a deficit, but has plans to turn that around by 2026
    - Why no virtual option this year?
        - » It was underutilized last year and very expensive
    - GSA Student advisory committee—17 members.
    - Geoscene on GSA website—directed to students. Jen Nocerino wants all information that we have that benefits students and she will advertise.
    - GSA International Program (Ester Stein). She would work with us on any international topics that we have.
16. Meeting adjourned

Minutes prepared by Lisa Ely, QG&G Board Secretary. Approved via email by meeting participants on November 14, 2023.

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QUATERNARY GEOLOGY & GEOMORPHOLOGY DIVISION

Thank you for reading, and stay tuned for our Spring Newsletter and QG&G elections!