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QUATERNARY GEOLOGY & GEOMORPHOLOGY DIVISION

Quaternary Geologist & Geomorphologist

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2018 Kirk Bryan Field Trip

At the Edge of the Laurentide Ice Sheet: Stratigraphy and Chronology of Glacial Deposits in Central Indiana

Photo courtesy of Anne Jefferson

Get a sneak peek at the 2019 Kirk Bryan Field Trip on page 4 of the newsletter!

Quaternary Geology & Geomorphology Division
--- Officers and Panel Members – 2018/2019---

Officers – 6 Members, three of whom serve one-year terms: Chair, First Vice-Chair, and Second Vice-Chair; and three of whom serve two-year terms: Secretary, Treasurer, and Communications Coordinator.
Management Board – 9 Members: Division officers and the Chair of the preceding year; also includes the Historian and the Student Representative.

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PANEL MEMBERS

2017-2019 Panel	**2018-2020 Panel**
Greg Balco	Kristin Jaeger
Karen Gran	Shannon Mahan
Joanna Redwine	Eric McDonald

2019 JTPC Representatives:
Grant Meyer**,** M.C. (Missy) Eppes

GSA Councilor Liaison – Frank Pazzaglia
QG&G Division Liaison – Dominique Olvera
(Both appointed by the GSA President)

Springing Forward in 2019
--- Message from the Chair ---

Fellow Quaternary Geology and Geomorphology (QG&G) Members-

There's still time! With climate change, spring often comes alarmingly early these days, but the mid-February publication of this newsletter gives me the opportunity to encourage QG&G members to submit topical session proposals for the 2019 GSA Annual Meeting in Phoenix – also because the deadline has been extended to February 20 due to the federal government shutdown. Based on requests for sponsorship received so far, QG&G will have several sessions focusing on desert environments, but of course topics far removed from drylands are also needed and are very welcome. Please consider putting a session together in your area of interest.

Speaking of the Phoenix meeting, the annual Kirk Bryan field trip will take us to the spectacular Verde Valley-Sedona area of north-central Arizona, where the long-term history of Verde River incision and aggradational intervals is recorded in a diverse array of remnant alluvial fans and terraces, of ages spanning the entire Quaternary. Led by Phil Pearthree and Kyle House on Saturday, the excursion will also let us discuss evidence for climatic control of Verde alluvial activity, major paleofloods, and modern flood hazards and channel changes. This will be an exciting trip, so register early as it will fill up fast. QG&G will also cover the field trip fee for the first several students to register.

We also extended the deadline for nominations for the Kirk Bryan Award to February 20. So you'll need to act quickly, but please consider those groundbreaking papers you've read as candidates for the division's primary award, and round up some support! Nominations for the Distinguished Career Award and Farouk El-Baz Award for Desert Research are due a little later this spring on April 1.

Some great news for the division: GSA has received a generous bequest from the estate of Don Coates, a long-standing QG&G member. Along with Marie Morisawa, Don was a founder of the Binghamton Geomorphology Symposia and an early proponent of environmental applications of geomorphology. The endowment will be used to establish the Donald R. Coates Geomorphology Award to support graduate student research. When the funds become available in the next several years, this will bring the total number of QG&G graduate student grants up to six! We are very fortunate to have so many generous, forward-thinking members and donors.

GSA Council has now approved the revision of the QG&G Division Bylaws, ably accomplished by Secretary Sarah Lewis and now Past Chair Tammy Rittenour. The revisions are detailed in the May 2018 QG&G Newsletter and include provisions for impeachment of division officers as required by GSA. We have also changed the title of our Newsletter Editor/Webmaster to Communications Coordinator to reflect the broader responsibilities of the post, now capably filled by Anne Jefferson.

I will be attending GSA Division Chair's spring meeting on March 2 and 3. Please let me know of any topics or concerns that you would like to be discussed regarding QG&G and the society, and enjoy the coming spring!

Grant Meyer
Chair, Quaternary Geology and Geomorphology Division

Join us at the Annual Meeting
in Phoenix, September 22-25, 2019.
There are sure to be many great sessions,
short courses, and field trips as always!

--Sneak Peek: The 2019 Kirk Bryan Field Trip—

The Co-Evolution of Verde Valley and the Verde River, Central Arizona

Led by Phil Pearthree, Kyle House, Kelin Whipple, and Joe Cook

Join us for a 1-day field trip to the spectacularly scenic and interesting Verde Valley in north-central Arizona. We will consider landscape evolution over multiple timeframes, models for river integration in extensional terrains, impacts of Quaternary climate changes on these fluvial systems, and various geologic hazards in the valley.

We will travel from Phoenix to Verde Valley, a spectacularly scenic structural and alluvial basin in north-central Arizona. It is bounded on the north by the Mogollon Escarpment – the margin of the Colorado Plateau – composed of late Paleozoic red sedimentary rocks in the Sedona area (photo). Much of the topographic relief of the plateau margin formed in the early to middle Cenozoic, but the area has been subsequently modified by erosion and faulting. The main fault zone in Verde Valley is against the Black Hills on the southwest, where most displacement occurred 10-3 Ma.

There are abundant exposures of basin-filling sediment dated to the latest Miocene and Pliocene through a combination of K/Ar dates on basalt flows, vertebrate paleontology, and magnetic polarity stratigraphy. These deposits record a transition from playa to lacustrine or marsh environments up-section. Valley incision began ~2.5 Ma, likely as a result of diminished faulting, over-spilling and erosional lowering of a topographic divide at the southeastern end of the valley. The developing Verde River and its tributaries cut deeply into the basin deposits, driving incision throughout the region. Most of the river downcutting likely occurred in the early Pleistocene, as the ~770 ka Bishop Tuff has been found in fans deposits just above the level of a modern tributary wash. Long-term incision has been modulated by periods of (presumably climatically-driven) aggradation, resulting in the formation of classic inset remnant alluvial fans and terraces associated with the river and tributaries. These range in age from small, very high early Pleistocene fan remnants to extensive early, middle, and late Pleistocene fans and terraces, Holocene fans, terraces, and the active river corridor.

The Verde Valley is a geologic hazard wonderland. The Verde River and tributaries are dynamic fluvial systems that present significant flood hazards in Verde Valley and downstream through the Phoenix area. The largest historical floods have resulted in substantial floodplain inundation and significant channel changes; paleoflood investigations have found evidence for floods in the past 1000 years that are somewhat larger than any historical floods. Landslides, rockfalls, and debris flows occur in the steep terrain of the valley margins. Finally, ‘water is for fighting’ – defining local vs. downstream water rights is an on-going challenge with a somewhat curious geology/geomorphology component.

The eroded Mogolon Escarpment near Sedona, AZ, from Airport Mesa, a very high stream terrace.

Division Awards - 2018

The following awards were given by the Division at our annual awards ceremony Tuesday, November 6, 2018 in Indianapolis, Indiana.

--- The Kirk Bryan Award ---

The Kirk Bryan Award for Research Excellence was established in 1951 and given for a publication of distinction (within the past 5 years) advancing the science of geomorphology or Quaternary geology or a related field. Our 2018 award was presented to **Karen B. Gran** with Noah Finnegan, Andrea Johnson, Patrick Belmont, Chad Witkop, and Tammy Rittenour for: 2013, *Landscape evolution, valley excavation, and terrace development following abrupt post-glacial base-level fall*, GSA Bulletin 125(11/12) 1851-1864.

Citation by Amy East and Andrew Wilcox

The paper by Karen Gran and co-authors represents a comprehensive, creative approach to a suite of problems that have long been central to Quaternary Geology and Geomorphology investigations: postglacial landscape evolution, knickpoint migration, fluvial terrace development, and modern, anthropogenically altered watershed processes. Their study, focusing on the Le Sueur watershed, Minnesota, is a uniquely thorough contribution to two themes at the forefront of the earth-surface-process science today: understanding landscape evolution in response to changing climate, and understanding anthropogenic effects on landscapes and critical-zone processes. Gran and her colleagues evaluated landscape change (and drivers of change) at time scales spanning late Pleistocene deglaciation, Holocene climatic variations, and modern agricultural expansion and intensification.

2018 Kirk Bryan award winner Karen Gran (right) with coauthors Tammy Rittenour (center right) and Patrick Belmont (center left), and with citationist Amy East (left).

They effectively linked a close, careful study of their field area to broad-scale surface-process problems to provide insights into, for example, how knickpoints propagate in transport- vs. detachment-limited systems; the interaction among lateral and vertical erosion and implications for terrace development; and downstream grain-size variation. Gran et al. addressed classic problems using state-of-the-art remote sensing techniques and geochronology, as well as more traditional field geomorphology, fitting a vast amount of work into one paper. They have thereby tackled the considerable challenge of understanding how transient systems evolved over a wide range of time scales. This paper not only represents a significant scientific advance in understanding landscape evolution, but also relate clearly to modern land use and watershed management applications. Such a merging of fundamental and applied science is what earth scientists generally know that our field needs to accomplish, and that most of us aspire to, but that is rarely achieved as comprehensively as in this study.

Response by Karen B. Gran

I want to thank Amy East and Andrew Wilcox for their kind words in support of our research and for nominating our paper for this award. We are deeply appreciative of the recognition and truly honored to be receiving the Kirk Bryan Award. We want to thank the Quaternary Geology and Geomorphology Division for making this award possible, and we are humbled to be joining the ranks of a very illustrious group of geomorphologists and Quaternary scientists.

This paper was truly an integrated effort, and I want to make sure my co-authors and collaborators get the recognition they deserve. Andrea Johnson was my first graduate student. She spent countless hours paddling the rivers in southern Minnesota, and it was her Master's thesis work on terrace history that formed the initial core of this paper. Patrick Belmont was the first to point out that our rivers were no normal, and they had a major knickpoint working its way upstream. He led the Lewis & Clark style expeditions down the Le Sueur, collecting in-stream field data that helped anchor the modeling work that was to follow, documenting among other things, the pervasive downstream coarsening seen in our channels. Noah Finnegan was the mastermind behind the numerical modeling, taking the dataset amassed in the field and using it to start answering questions about how a transient system like the Le Sueur carved its profile and valley over time. Tammy Rittenour provided excellent geochronology work, a necessary part of any project reliant upon rates and dates. Chad Wittkop first recognized a major stream capture event in our watershed, which helped explain gaps in our terraces and patterns in the ages of them. This paper would not have happened without everyone's contributions. In addition to the co-authors listed, we want to recognize the efforts of Carries Jennings, Stephanie Day, Peter Wilcock, and a large number of student field assistants for their help throughout the project.

Funding for this research was provided by NSF through the National Center for Earth-surface Dynamics and the Minnesota Pollution Control Agency. We appreciate the MPCA's progressive stance on environmental issues and desire for science-based decision-making. They not only got this project up and running, but they also listened to our results and helped put science into policy.

And finally, I hope our research inspires other people who work in post-glacial rivers to recognize the unique possibilities that come from these very young landscapes that are still actively responding to perturbations from the last glaciation. These transient systems can tell us a lot about how rivers evolve in more complex environments, and I will point out that most tills erode faster than bedrock and all of our terraces are young enough for radiocarbon. Try not to overlook the rivers of the upper Midwest - there is a lot we can learn from them.

On behalf of all my co-authors, thank-you very much for this honor.

--- The 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 2018 award to **Ellen Wohl**, Professor at Colorado State University.

Citation by Karen Gran and Sara Rathburn

It is our great pleasure to present Dr. Ellen Wohl as this year's QG&G Distinguished Career Award winner. As a global leader and visionary in fluvial geomorphology, Ellen has made important contributions across the discipline ranging from the fundamental behavior of bedrock rivers and mountain streams to the complex eco-geomorphic interactions of rivers and wood to human impacts on rivers and river restoration. Ellen has an incredible track record of "picking the next best thing" in river science, then tackling the problems with detailed field observations and analyses. SHe has given us a rich understanding of river history and processes in Colorado Front Range systems, while also working in river systems from the Arctic to the tropics.

Ellen's prolific career has produced over 200 publications and 15 books. As one colleague wrote in a letter of support, "Of course, her productivity is astonishing. But the real reason for her stature in the field is not the volume but the quality." Many of these books now have become textbooks for classes on mountain rivers, while others are focused on the general public, thus expanding her reach beyond the confines of the academy. Another letter of support states that "No other geomorphologist in the field today has left such an extensive legacy of both technical papers and book-length contributions." In addition, Ellen has given her time generously in service to the profession, serving in editorial roles and in leadership positions with the QG&G Division and national level of

GSA, as an NSF panelist, and she has chaired numerous working groups, panels, and workshops, including the 2016 Binghamton Geomorphology symposium.

But one of the most enduring contributions she has made to Quaternary Geology and Geomorphology is the many students whom she has mentored along the way, advising 29 M.S. theses and 26 Ph.D. dissertations. Ellen is one of the most in-demand and scientifically involved advisors, yet she always makes time for her students and take their mentoring very seriously. Her students write of her boundless energy in the field, dedication, and generosity of time and ideas. One former student, describing how Ellen generously shares her energy and ideas, wrote “She is willing to sacrifice efficiency to help others. (If you want to see Ellen’s head explode, put her in the back of an airplane and make her wait for the whole her of passengers to disembark before she can start her ultra-fast walk through the terminal.) Efficiency is important, but Ellen has taught me that even this should give way to community.”

Many people reach a point in their careers where we can look back upon their many accomplishments and laud them with awards like the Distinguished Career Award. With Ellen, she is still very much moving forward, and she shows no signs of slowing down. So don’t worry, Ellen isn’t stepping down any time soon! We just felt it was time to honor such a successful role model, mentor, and scientists.

Ellen’s career is an inspiration to us all, and the positive impact she has had and will continue to have on the fluvial geomorphology community cannot be overstated. We can think of no one more deserving of the QG&G Distinguished Career Award.

Response by Ellen Wohl (via pre-recorded video)

I’d like to start by thanking Karen Gran, who initiated my nomination for this award, and those who wrote letters in support of the award: Gary Brierly, Dan Cadol, Gordan Grant, Kris Jaeger, Stuart Lane, Dorothy Merritts, Dave Montgomery, Sara Rathburn, and Andrew Wilcox. There are many people in our community who deserve this award and I am honored to be selected for the award this year.

When I learned that I would receive this award, I thought about the many acceptance speeches I’ve heard at the Tuesday evening awards ceremony over the years. The DCA acceptance speech has always been one of my favorites. When I was a grad student and early-career professional, I felt that I gained interesting insights into the recent history of our field, as well as getting insight into what makes people successful in their careers. I heard many good acceptance speeches throughout the years, but on that I particularly remember emphasized fun - the sources of inspiration and pleasure in a professional career and the importance of having fun while doing your work.

I have been very fortunate to have a lot of fun. When I think about what has made my career fun, three things come to mind. Because I like alliteration, I’ll call them the 3 Fs: friends, focus, and field. I’ll start with friends. None of us work alone. SInce my undergrad days, I’ve been fortunate to have friends in Quaternary geology and geomorphology. As an undergrad, I moved through the geology classes at Arizona State University with a cohort of other geo majors and we did a lot together outside of the classroom, hiking and backpacking in the wonderland of the Arizona desert and mountains. At that time, I would not have been so presumptuous as to call my professors friends, but many of them were. I was inspired by their breadth and depth of knowledge, the enthusiasm with which they shared that knowledge, and their passion for geosciences. I looked forward to listening to them and taking fieldtrips with them, I appreciated their humor, and I tried to live up to their expectations.

I had a wonderfully fun experience in grad school because of the amazing people I worked and played with at the University of Arizona, including Lisa Ely, Dorothy Merritts, Jim O’Connor, and Sara Rathburn. Vic Baker and Bill Bull created a thoroughly supportive and stimulating environment for their grad students and showed us on a daily basis how to have fun, from dining on sourdough pancakes before sunrise on a fieldtrip to learning from the steady stream of scientists from diverse countries who visited the research group.When I got to Colorado

State University, I learned of the Schummposiums that Stan Schumm hosted for grad students at his home in the evenings and I quickly adopted the idea. Those evening seminars morphed into full-on, gourmet potlucks (it helps to have grad students who are competitive in a friendly, positive way), followed by a presentation and lively discussion. For nearly 30 years now, I've had a great deal of fun with my grad students. One of the joys of being at a university is that you have a perpetual fountain of youth in each new group of eager, energetic students who enter the program. I've also been lucky to be at a university that focuses on diverse aspects of water and includes many colleagues with whom I can collaborate on teaching and research. Chief among these is Sara Rathburn. It's wonderful to have such a close colleague and friend in the same department and I'd summarize the situation by saying: Geomorphologists - every department needs at least two.

DCA speeches provide a platform to offer advice to students and early career colleagues, so my first piece of advice is to find people you like and who stimulate your thinking, and stick with them.

With respect to the second F, focus, it's really fun - and an amazing privilege - to be able to follow my curiosity about Earth's environments. Many of us have a privileged life: We can ask questions about the things that intrigue us and we can fully employ our imagination and intellect to do our best to answer those questions. It's a source of great pleasure to really focus on a research problem and metaphorically sink your teeth into it. I 'be had a few 'aha' or 'Eureka' moments in my research, but many of my most useful insights have come from just continuing to think about a particular problem off and on for weeks or months, allowing ideas to gradually mature. An interesting article was published in 2017 about transformative research in ecology. Almost without exception, those who performed this research didn't realize ahead of time or during the process that their were going transformative research: that recognition came later. Although it's important to keep thinking about the most important research questions in a particular area, there is always the potential for the unexpected.

My second piece of advice, therefore, is to think about whether what you're doing is likely to be important in the sense of providing useful insights, but don't pass by questions that interest you just because they don't necessarily promist to be transformative. And don't let yourself be completely restricted by funding in pursuing interesting research. I've done a lot of unfunded research that cost me my time and maybe a couple tanks of gas. I've had an advantage in that Rocky Mountain National Park is my backyard, but wherever you live, there are interesting and important questions that can be addressed without huge amounts of funding.

That brings me to the third F, the field. I love the outdoors. I like hiking, camping, backpacking, skiing, paddling – just being out in the natural world. I know that many of us are attracted to the study of surface processes and landforms and their changes throughout the Quaternary because we enjoy the natural world. I strongly believe that grounding our understanding of Earth's surface and recent history in field observations remains the core of our discipline. The recent advances in space-based remote sensing and in numerical modeling provide us with fantastic tools extend our ability to ask and answer questions, and provide us with new ways of thinking about Earth's surface. Our interpretations of these sources of information are most effective, however, if they remain grounded in field experience. Besides the fun of seeing different regions of the world, I feel that the diversity of environments I've been able to visit has been crucial to informing my understanding of geomorphology. I've been privileged to live and work in the Southern Rockies for nearly 30 years, which has allowed me to pursue long-term lines of inquiry and to develop deeper insights into this particular place, but I've also been privileged to work in a wide variety of landscapes. Visiting and working in diverse natural environments facilitates conceiving of new possibilities. I would amend the very cynical expression 'he who dies with the most toys, wins', to 'he or she who sees the most environments wins a great deal of satisfaction and insight.' My third piece of advice is, never stop going to the field. Even if it's an environment with which you're very familiar, new observations and insights can come when you least expect it.

I'll close by first thanking my family and friends, who have helped me to get where I am now and made my lfie and work so much fun, and second by hoping that those of you starting your career can follow where your intellectual curiosity wherever it may lead you, and never stop looking at the real world beyond your doorstep or your computer screen. And I hope that your career gives you a great deal of fun.

--- The Farouk El-Baz Award for Desert Research ---

The Farouk El-Baz Research Award was established in 1999 and given for outstanding work in the field of warm desert research. The award is intended to encourage and reward arid-land studies. The 2018 award was presented to **Paul Hesse** of Macquarie University.

Citation by Nicholas Lancaster

On behalf of his many colleagues and collaborators, it is my pleasure to provide the citation for Dr. Paul Hesse of Macquarie University, Sydney, Australia for the 2018 El Baz Award for Desert Research.

Paul is one of the most active of a small group of Australian workers in the arid zone of the continent. His contributions to understanding the long-term paleo-environmental history of the Australian arid zone are many and include studies of dunes, dust, and most recently, fluvial systems. In addition, he has engaged in a variety of studies of the modern dynamics of vegetated linear and parabolic dunes and their responses to climate variability and fire; as well as the dynamics of dust source areas. These process-oriented investigations provide context for understanding the responses of dunes and dust sources to long-term (Quaternary) climate and hydrologic changes. Although most of Paul's research has been conducted in an Australian context, his insights contribute to a broader understanding of the responses of desert geomorphic systems to climate change on multiple timescales.

Paul Hesse came to desert research via an unusual path – his PhD studies of dust in ocean cores off the eastern coasts of Australia. He was the first to demonstrate the linkages between dust emissions in the Australian interior and circulation and aridity shifts during the Quaternary. It remains a study that has both had international importance, as well as being the benchmark for subsequent work by others in the region. This interest continues with studies of the dynamics of dust sources on Quaternary timescales, linking volumes of eroded material to paleohydrology and dust transport to oceans and desert margin areas.

Paul's has made major contributions to understanding the linear dune systems of the interior of Australia. In addition to updating and improving existing maps of their extent and morphology using satellite images, Paul has examined the diversity of Australian dune patterns and their relationships to winds and sediment supply. He was one of the first to recognize their distinctive features and long term stability, highlighting the importance of paleosol development in addition to vegetation in stabilizing them. This has major implications for understanding the development of similar linear dune systems in the Negev and Kalahari deserts, as well as the response of these systems to changes in sediment supply, availability and mobility. In subsequent papers, Paul analyzed the spatial and temporal patterns of luminescence dates from the Australian dunefield, concluding that the vegetated dunes exhibit conservative behavior with a limited response to the range of climate forcing in the late Pleistocene. His suggestion that a more complete understanding of dune field response to Quaternary climates requires an intensive and structured dating program to overcome the 'noise' from stochastic processes leading to small-scale activity in these dunes and the

2018 Farouk El-Baz Award winner, Paul Hesse (center), with citationist Nicholas Lancaster (right) and Division chair Tammy Rittenour (left.).

simultaneous removal of parts of the sedimentary record, is a major guide to future research and luminescence dating programs, both in Australia and elsewhere.

In recent years, Paul (with his students) has turned his attention to fluvial systems in the arid core of Australia, demonstrating their importance as dust sources as well as their complex morphology and dynamics on Quaternary timescales.

Paul's contribution to the research community extends beyond his multiple research projects. He has been very active in mentoring graduate students and early career scientists; editing scientific journals, contributing to reviews of paleoenvironments in the Australian arid zone, and acting in a leadership role in the Australian Quaternary community.

I have always felt that the El-Baz Award for Desert Research should recognize the achievements of early- to mid-career scientists and provide them with a springboard to greater success. Paul Hesse clearly fits this model and is a worthy recipient of the award based on his outstanding body of work in a variety of aspects of desert research.

Response by Paul Hesse

Dr. Hesse gave a heartfelt response and spoke extemporaneously from a few notes. No recording or transcript exists, but Dr. Hesse expressed his sincere appreciation for the award and he graciously thanked his mentors, colleagues, and collaborators.

--- The Gladys M. Cole Memorial Research Award ---

The Glady 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. The first award was presented in 1982. The 2018 award was given to **Joan Florsheim**, University of California, Santa Barbara, for the proposal "*Quantification of Geomorphic Disturbance and Recovery Following Wildfire*."

The 2018 winner of the Gladys W. Cole Research Award, Joan Florsheim.

Thank You

The Quaternary Geology and Geomorphology Division management board thanks the following people for their help in evaluating this year's award applications: Brian D. Collins (USGS), Brian Collins (UW), Dennis Dahms, Susannah Erwin, Pat Fall, Terry Ferguson, David Harbor, Bruce Harrison, Vance Holiday, Brad Johnson, Tony Lazell, Shannon Mahan, Kyle Nichols, Tom Pierson, Sara Rathburn, Daniella Rempe, Greg Stock, Nicole West, Brian Yanites

Student Research Awards

--- J. Hoover Mackin Award ---

The J. Hoover Mackin Research Award was created in 1974 to support graduate student research in Quaternary geology/geomorphology. The 2018 Mackin Award for PhD research was given to **Ian Reeves**, University of North Carolina Chapel Hill, for his proposal *"Aggregate Impacts of Shrubs on Barrier Island Overwash Deposition."* Advisor: Laura Moore

--- Peter Birkeland Award ---

The **Peter Birkeland Soil Geomorphology Award** was established in 2016 to contribute to the advancement of soil geomorphology. The 2018 Birkeland Award was given to **Charles Abolt**, University of Texas Austin, for his proposal *"Quantifying the influence of ice wedge polygon geomorphology on landscape-scale hydrology and carbon cycling."* Advisor: Michael Young

--Stanley A. Schumm Award--

This award was established in honor of Stanley Schumm and recognizes the contributions of graduate students in the field of fluvial geomorphology. Established in 2012, the inaugural award was given in 2018. The 2018 recipient was **Rebecca Beers**, Northern Arizona University, for her proposal *Channel Refill Rates and Processes Following Post-Fire Debris Flows, Pinaleño Mountains, Arizona, USA*." Advisor: Taylor Joyal

--- 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 2018 Howard Award for MS research was given **Nathaniel Norris**, University of Cincinnati, for his proposal *"Reconstructing Glacial Lake Agassiz Lowering to the Moorhead Low."* Advisor: Thomas Lowell

--- Marie Morisawa Award ---

The **Marie Morisawa Award** was established in 2006 to support promising female graduate students in geomorphology. The 2018 Morisawa Award was given to **Annette Patton**, Colorado State University, for her proposal *"Landslide Response to Climate Change in Denali National Park and Preserve, Alaska."* Advisor: Sara Rathburn

--- 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 his service on the committee. The award is given for the best proposal in sediment transport or related aspect of fluvial geomorphology. The 2018 recipient was **Megan Doughty**, Colorado School of Mines, for her proposal *"Changes in Hyporheic Exchange Flows within Mountain Streams Due to Channel Spanning Logjams."* Advisor: Kamini Singha

Management Board Meeting Minutes
Sunday, November 4, 2018
7:00 PM-9:00 PM, JW Marriott Indianapolis, White Ballroom C

Attending:
Management Board: Tammy Rittenour, Chair; Grant Meyer, 1st Vice Chair; Missy Eppes, 2nd Vice Chair; Julie Brigham-Grette, 2nd Vice Chair elect; Sarah Lewis, Secretary; Scott Burns, Treasurer; Anne Jefferson, Communications Coordinator; Thom Davis, Historian; Sarah Crump, Student Representative; Glenn Thackray, Past Chair

Panel*:* *Stephanie Shepherd, Mark Sweeney, *Karl Wegmann 2016-2018 Panel *(outgoing)*
*Greg Balco, Karen Gran, *Joanna Redwine 2017-2019 Panel *(midterm)*
*Kristin Jaeger, Shannon Mahan and Eric McDonald 2018-2020 Panel *(incoming)*
**Sent regrets for not attending*

Others Present: Frank Pazzaglia, QG&G Council Liaison; Dominique Olvera, GSA Liaison to Divisions

Meeting was called to order at 7:20pm and began with introductions.

Treasurer's report:
Scott Burns (Treasurer) reported that in fiscal year 2018 (July 2017 to June 2018) the Division had a total income of $14,515, and total expenses of $14,841 for a net loss of $326. This reflects a decrease in income from dues for the third year in a row. For fiscal year 2019, Scott presented a budget with projected income of $8200 from dues, $9000 from donors (including a $1170 subsidy for students for the Kirk Bryan field trip), and projected expenses of $16,720, including $2900 toward supplementing awards and International Association of Geomorphologists (IAG) dues of $950/yr for a projected surplus of $480 (see attached report). Despite net losses in the last three fiscal years, the Division still has a reserve balance of ~$4500. Motion to approve the financials and the proposed budget for 2018-19 was seconded and unanimously approved. Scott also presented a review of the QG&G accounts with GSA Foundation. All accounts have grown in the last fiscal year, and providing standard amounts to award recipients did not require supplements from the QG&G budget as it did in 2017. For those considering donations (tax-deductible), the Birkeland Award is the fund of highest need, followed by the Howard & Schumm Awards. The inaugural Schumm Award was given in 2018.

GSA Division Chair's Meeting Report:
Items on the chairs' meeting agenda that **Tammy Rittenour** (Chair) shared with the division are below. Sub-bullets represent items discussed specifically at the board meeting.

(1) The 2019 Annual Meeting will be held in Phoenix, Arizona from September 22nd to 25th; Field Trip Proposal Deadline is December 3. Session Proposals, Student Award Applications & GSA Fellow nominations due February 1. Abstract Deadline June 25th (early early!).
(2) GSA launched a long-term strategic planning effort in August 2017 and expects completion by the end of 2018. A task force will specifically address concerns around membership, finances, and programs.
(3) GSA welcomes Nan Stout into the newly created position of Ethics & Compliance Officer. She will be reviewing the existing GSA Code of Conduct(s) and developing a risk assessment for the Society. She welcomes engagement and feedback.
(4) There was discussion around the Student Advisory Committee and the roles of the students in the Division; please see the section below for Sarah Crump's (Student Rep) report on the SAC meeting on Monday Nov. 5th.
(5) It was noted that Divisions (21) and Sections (6) exist largely independent of each other, and it was suggested that Divisions seek to improve communication and explore how to best merge science. One suggestion is for Divisions to initiate engagement around sponsoring technical sessions at Section Meetings.
(6) Not all Divisions had complete the Bylaw revision requested by GSA in spring 2018. There was push back on some of the requested language, and discussions around what GSA could require. At the QG&G Board meeting the following clarifications were provided:
    a. **Frank Pazzaglia** (Division Liaison to Council) reinforced the importance of the Divisions to the structure of GSA and emphasized the legal obligations of the Divisions to provide adequate procedures and protections for running the Divisions.
    b. **Dominique Olvera** (GSA Liaison to Divisions) confirmed that QG&G had submitted their membership-approved bylaw revision with the Annual Report in September and was scheduled for review and approval by Council on Wednesday Nov 7th.
(7) GSA continues to see declines in membership across all Divisions since 2014
    a. **Frank Pazzaglia** shared the GSA perspective and concerns, specifically around retaining and growing the member base. He welcomes ideas and feedback from the board and the membership to bring to the GSA Council.

Review of Groundhog Day Document (GDD):
Sarah Lewis (Secretary) requested feedback on the 2018 version of the Groundhog Day Document distributed to the board and panel prior to the meeting. Edits and contributions should be directed to Sarah, who will compile and report any significant changes or concerns to the board. Specific requests and assignments included:

- All board and panel members will review sections of GDD relevant to their positions and responsibilities, especially outgoing members.
- Glenn, Tammy & Grant will review and update the JTPC section
- Grant, Missy & SHannon will review the Farouk El-Baz Award section
- Grant requested review of student award procedures re: honorary mention

Student Awards Procedures:
In spring 2018, an email discussion was initiated regarding overlap and coordination between the student QG&G awards and students selected for awards by the GSA Research Grant Committee (RGC). While the QG&G awards pull from the pool of applications submitted to the RCG, they are awarded in addition or "add-on" to the RGC grants. Other Divisions are the "primary" source of funding for a student selected by the RGC. With a growing number of QG&G student awards (one new award each in 2017 and 2018 and one more in development), there has been practical concern over increased overlap between the awards. This overlap would potentially result in a single student receiving an amount much greater (>2x) than their proposal budget, at the cost of another student receiving less or no funds. Sarah Lewis (Secretary) provided a summary of the concern, and the alternate proposal developed from earlier email discussions, for board consideration. The proposal would be to "cap" the amount of any combined award to an amount some amount higher than the

proposal budget. The QG&G award would always be the primary award, and a student could still receive additional funds from RGC up to this pre-determined total award amount. This continues to rewards the student for developing a highly meritorious proposal, while potentially freeing up GSA funds for additional RGC awards. Motion to present this option to the RGC and if acceptable, determine the procedure for determining the “cap”, was seconded and unanimously approved. Sarah, Julie & Missy will work with GSA staff to explore the option and return to the board for potential approval and adoption for 2019. If no proposal is developed in time, the 2019 procedure will remain to consider the QG&G awards as “add-on” asin previous years.

Kirk Bryan Field Trip for Phoenix 2019 meeting:
Ideas for one-day field trips before or after the meeting were discussed. Grant and Missy as JTPC reps will coordinate with those interested and Phil Pearthree, the Field Trip Chair, for the Phoenix meeting to designate an appropriate trip as the Kirk Bryan for 2019.

Student Advisory Council (SAC) Meeting Notes
Sarah Crump (Student Rep) represented QG&G at the SAC meeting on Monday November 5th. Topics discussed at the meeting included:

- Discussed each student rep creating a “transition document” to serve as a written summary of what a student rep does for the Division/Section
- Brainstormed ways to promote the Student Forum on the GSA Member Community and turn it into a useful resource for GSA student members
- Elected a new chair-elect of SAC
- Held a general discussion about the role of student reps within each Division?Section and ways in which SAC can best serve GSA students

Recognition of Service:
We thank outgoing Past Chair Glenn Thackray, and 2016-2018 Panel Members Stephanie Shepherd, Mark Sweeney, Karl Wegmann for their service to QG&G.

Business Meeting and Awards Ceremony:
The annual awards ceremony and reception was held Tuesday, November 6th, 7-11 PM at the Indiana Convention Center. In addition to presenting the Division’s student and professional awards, the management board provided an update to the membership on the financial status of the division and solicited nominations and proposals for the coming year and the Phoenix 2019 meeting.

Meeting adjourned at 9 pm

Minutes approved via email vote December 9, 2018.

Necrology

In the last year, we have received notice of the passing of the following of our colleagues:

William Monaghan

GSA Quaternary Geology and Geomorphology Division Newsletter
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Down by the river, looking at late Pleistocene sediments on the opposite bank at the last stop of the Kirk Bryan Field trip, November 2018