Geological Society of America

Limnogeology Division Newsletter

Volume 17 Number 2
July 2020

Laguna Espejo, Oaxaca, Mexico
(Photo Credit: Michelle Goman)

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Michelle Goman
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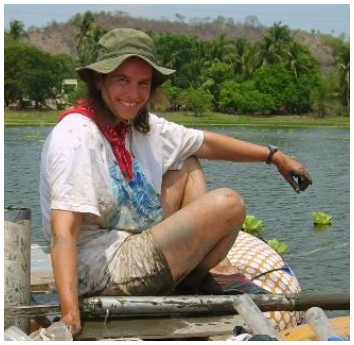


Dear Limnogeologists, I do hope you are all staying well and adapting to life, teaching and research with COVID-19 restrictions. This newsletter, while a wee bit later than normal, includes award news, updates and helpful websites for teaching online, amongst other items.

Sadly, the in-person GSA annual meeting to have been held in Montreal is a casualty of the current health emergency. The meeting will be held online and we hope you will contribute abstracts to the Limnogeology sponsored topical sessions (see page 12 for details).

This edition also includes biographies of candidates for officers of the Division. The GSA will be sending you all a ballot shortly, that will include Officer Positions, as well as a request for approval of a revised set of Division bylaws. Bylaw review and revision was requested of all Divisions by GSA. The intent was to ensure that each division's bylaws included the minimum basic information to legally and ethically inform governance of the divisions.

Best

Michelle (goman@sonoma.edu)

2019 Israel C. Russell Award

Presented to Thomas C. Johnson

Citation by Sheri Fritz, University of Nebraska – Lincoln and Paul Baker, Duke University

We are delighted to introduce Tom Johnson as the recipient of the 2019 Israel C. Russell Award in limnogeology. Tom, an expert on biogenic silica and carbonate dissolution in the ocean, was a pioneer in applying the approaches of paleoceanography to lakes. In the 1990s, he spearheaded the International Decade of East African Lakes (IDEAL), which helped catalyze investigations of Africa's large lakes. He also mobilized support for lake drilling and later was PI on the ambitious Lake Malawi Drilling Project. He was Founding Director of the Large Lakes Observatory at University Minnesota-Duluth, which rapidly became a leading center for interdisciplinary lake research.

Some of Tom's earliest limnological work dealt with sedimentation and silica cycling in Lake Superior, but he is best known for research on climate history in Central and Eastern Africa. With Bruce Rosendahl, he was one of the first to undertake single and multi-channel seismic reflection profiling in African lakes. His studies documented profound late-Pleistocene lake-level changes, including desiccation of Lake Victoria, with important implications for speciation of the endemic cichlid fauna. Studies of Lake Malawi drill cores, extending back over a million years, demonstrated the role of insolation and Indian Ocean SST in pacing precipitation and temperature variability in East Africa, as well as a surprising long-term evolution to progressively wetter conditions. Together with students and colleagues, Tom also promoted new organic geochemical techniques, generating some of the first long continental reconstructions of temperature in tropical East Africa. In short, Tom has been a leading figure in African paleoclimatology.

Tom has been an excellent mentor of graduate students and postdocs, and many have gone on to highly successful careers of their own. He has led and served on multiple committees and advisory boards, including as co-founder of the GSA Limnogeology Division in 2002.

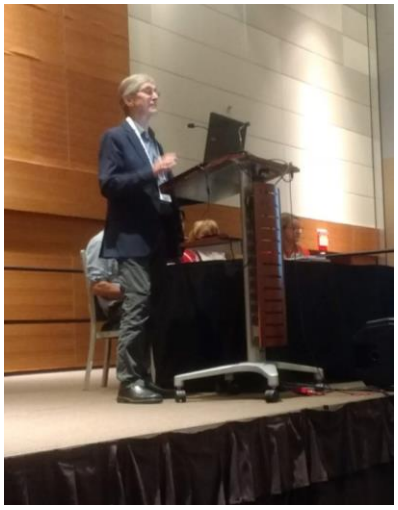
We congratulate Tom on this well-deserved recognition of his many accomplishments!

Response by Thomas C. Johnson

Thank you, Sheri Fritz and Paul Baker, for your flattering and very kind words. I am truly honored to be receiving the Israel C. Russell Award, especially when nominated by such eminent scientists as yourselves.

One's path through life is truly fickle – Twists and turns along the way may lead to joy and stimulation, or to tedium, or even to tragedy. I am one of the lucky ones. I knew from quite an early age that I wanted to do something on the oceans. Despite growing up in a small mining town in northern Minnesota, I managed to head out to Seattle to major in oceanography at the University of Washington. What followed was 4 years at UW, 3 years in the Coast Guard, and 5 years at Scripps Institution of Oceanography, followed by over 40

wonderful years in academia, at the University of Minnesota (Twin Cities and Duluth), Duke University, and now, somewhat retired, at the University of Massachusetts Amherst.

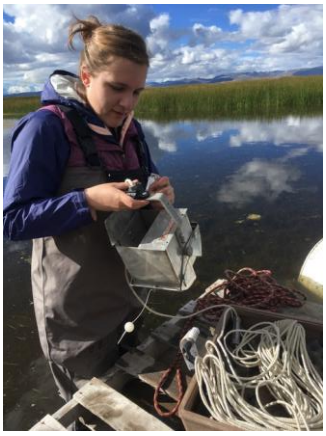


I want to acknowledge a few of the many people who particularly influenced my career – those lucky encounters that led to such a rewarding, professional life. Dick Sternberg at the UW, who taught me the attraction of a life in academia, and how to calmly respond to the challenges of science at sea. Wolfgang Berger, my Ph.D. advisor at Scripps, whose keen mind taught me to think globally, to write professionally, and yes, to take a break at noon once in awhile for some body surfing and a run on the beach. Herb Wright, who led the Limnological Research Center in Minneapolis, home of a most impressive stream of graduate students and post-docs from whom I gained so much insight into Quaternary geology and limnology. Bruce Rosendahl at Duke University, who drew me to Duke and into the great lakes of East Africa, where I subsequently focused most of my research, on the climate history of the African tropics. Kerry Kelts, who convinced me to return to Minnesota, to set up the Large Lakes Observatory on the Duluth campus. Kerry and I co-conspired to set up IDEAL (the International Decade for East African Lakes). We had embarked on a productive collaboration on Lakes Victoria and Edward, which most unfortunately ended when he passed away at too early an age. Joe Werne, who established an organic geochemistry lab at LLO and soon led to our co-advising several excellent graduate students who were the first to use TEX86 as a paleo-thermometer in lakes, and to obtain leaf wax isotopic records of past precipitation. Eric Brown, who set up an excellent core scanning XRF facility at LLO, at the time just the second one in the United States. Captain Mike King and the crew of LLO's R/V Blue Heron, which has become a most capable research vessel in the Laurentian Great Lakes, now used by scientists from many universities in the region. To the many excellent graduate students I have had over the years, some of whom are in the room tonight, I extend my warmest regards and gratitude for your very important contributions to our science, and for the pleasant environment in which we collaborated. Finally, I thank my dear wife, Kate Whittaker, for contributing so often as a graphic designer, social organizer, and field companion, and for adding such a warm and artistic dimension to my life.

Tom Johnson (2019 Russell Awardee) and Lisa Park Boush (Chair Limnogeology Division)

2019 Kerry Kelts Awardee

Sarah Katz



Dear Limnogeology Division members,

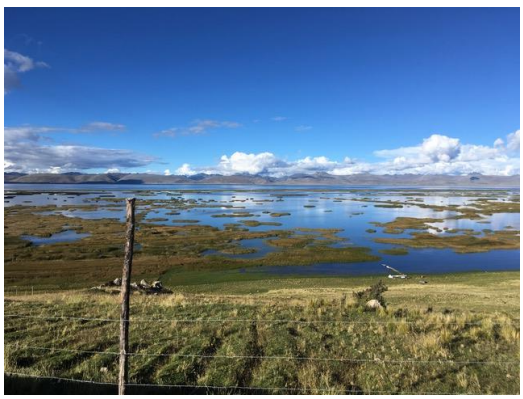
As recipient of the 2019 Kerry Kelts Student Research Award I would like to extend my thanks to the award committee members and to the Limnogeology members who made contributions to the award. As a second-year PhD student at the University of Michigan, my research is focused on developing triple oxygen isotopes in modern waters and carbonates from the Lake Junín watershed. Triple oxygen isotopes (commonly referred to as $\Delta^{17}O$ or ^{17}O-excess) record mass dependent isotope fractionation between the three stable isotopes of oxygen (^{16}O, ^{17}O, and ^{18}O). In particular, $\Delta^{17}O$ has been shown to track evaporation, making it a valuable proxy for hydrologic processes in modern and paleo-lacustrine systems.

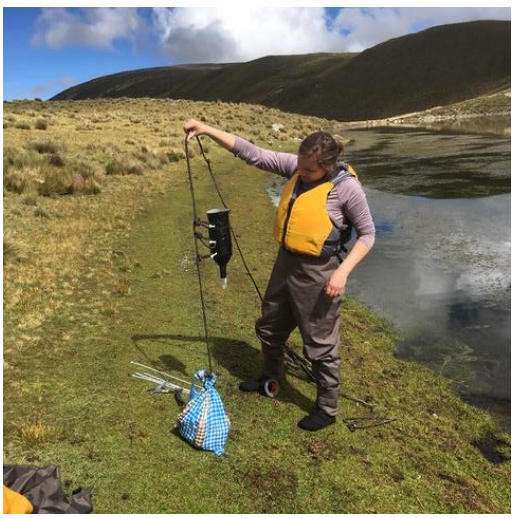
Funds granted by the Kelts award will be used for XRD work on lake sediments from the Lake Junín region to determine the mineralogy the lacustrine carbonates. Funds will also be used for the purchase of laboratory consumables.

All the best,

Sarah Katz

skatzees@umich.edu





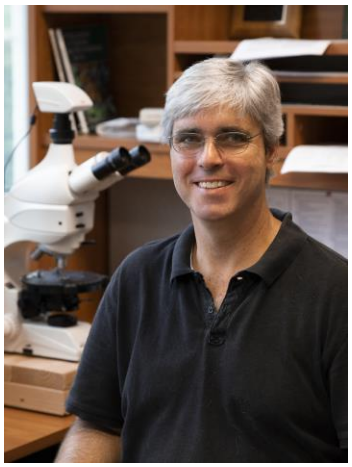
Left image: View from Lake Junín's western shore. Sedge mats ring the peripheral of the relatively shallow lake. In the background, glacially carved valleys of the eastern Andes are visible. Right image: Preparing a sediment trap for deployment at Laguna Mehcocha.

Nominees for the Limnogeology Division Board

Ballot will be arriving in your inbox sometime this summer.

Nominee for Vice Chair

Jason R. Price



[Paleo]limnogeochemistry, hydrobiogeochemistry, mineral weathering. **Education**: B.S. Geology, Northern Illinois University; M.S. and Ph.D. Geological Sciences, Michigan State University. Professional Experience: Hydrogeologist/Project Manager, T E D Environmental, Inc., 1995-2000; Associate Professor of Geology, Millersville University (Department of Earth Science, 2003-2014); Associate Professor and Coordinator of Environmental Studies, Illinois College (Environmental Studies Program and Department of Chemistry, 2014-2018); Senior Geologist and Laboratory Manager, Bowser-Morner, Inc., 2018-2019; Associate Professor of Earth Science, Wayne State College (Department of Physical Sciences and Mathematics, 2019-present). Professional Service: Field trip leader, Eastern Section Meeting, AAPG, 1994; Forensic geoscientist for Lancaster County, Pennsylvania District Attorney's Office, 2004-2005; Lancaster County Conservancy Science Advisory Committee, 2005-2014; Technical Session Chair, GSA Annual Meeting, 2007; Technical Session Chair, V.M. Goldschmidt Conference, 2012; Exhibit developer for The Lancaster Science Factory, 2010-2013; Field trip leader, Southeast Friends of the Pleistocene Field Trip, 2013; Guest editor of Aquatic Geochemistry, 2012-2014; Member, Student Grants Committee of the Clay Minerals Society, 2013-2017; Symposia Chair, Northeast Section of the GSA, 2014.

Research interests: post-LGM [paleo]limnogeochemistry of alpine to subalpine Rocky Mountain lakes; mineral weathering as sources of nutrients to modern and ancient lacustrine ecosystems; hydrobiogeochemistry of headwater watersheds; solubility of radiation-damaged accessory bedrock minerals.

Statement: Although originally trained as a small watershed-scale geochemical kineticist and mineralogist, limnogeology quickly became my passion approximately 10 years ago. While attempting to develop a geochemical mass-balance model for a Rocky Mountain watershed, it became evident that quantifying elemental fluxes into lacustrine sediments was necessary. That recognition lead to multiple field expeditions to recover lake-bottom sediments from a remote ice-covered lake, an activity previously unknown to me. The initial chemical analyses of the sediment has since yielded more questions than answers with respect to the climatic influence on Late Pleistocene and Holocene mineral weathering within the watershed. Such findings have greatly rejuvenated my excitement for research. The people of the Limnogeology Division have been an invaluable resources for helping me gain

knowledge into what was once an unknown field of study to me. As Vice Chair I hope to convey the merits, importance, and transdisciplinary nature of limnogeology to the greater scientific community. I also would like to improve the division's visibility with, and attractiveness to, individuals of diverse backgrounds, with emphasis on undergraduates who are the future of limnogeology.

Nominee for Secretary

Andrea M. Shilling

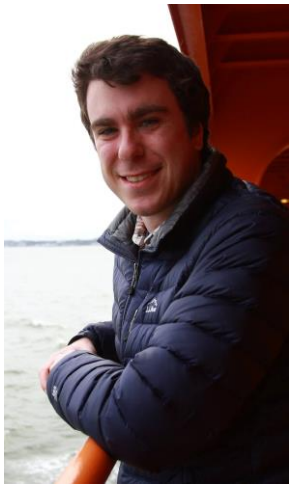
[Paleo]limnobiogeochemistry, isotope geochemistry, paleoclimate reconstructions. **Education**: B.A. Geological Sciences, Franklin and Marshall College; M.S. Geological Sciences, Rutgers University; Ph.D. Geological Sciences, Indiana University. Professional Experience: Adjunct Professor, University of Southern Indiana 2019; Postdoc, University of Pittsburgh [pending funding availability] stay tuned!

Research interests: [paleo]limnobiogeochemistry to recreate past climate and environmental changes during the last 2 mya in East Africa; influence of lake size on biomarker proxies; biomarker proxy refinement and development; compound specific isotopes.

Statement: My first encounter with research was studying cut bank erosion rates in a stream running through legacy mill sediments, while this was very interesting I wanted to focus more on records through time. Then, in 2010, I moved on to studying the sediment record of a lake-adjacent groundwater fed wetland. It was during this work I had my first introduction to the field of limnology, and joined the Limnogeology Division of GSA. My latest research involved a paleoclimate reconstruction of 1.8 Mya sediment from Paleolake Olduvai in Tanzania. I see many more lakes in my future and am eager to explore the mysteries contained within. My interest in lakes comes from their ability to record local, regional, and global changes and the complex dynamics acting within lake systems. During my career the wonderful people I have met through the Limnogeology division have been a major help in furthering my knowledge of the field, guiding my career as it develops, and are and endless source of knowledge. Additionally, fun fact, I met my husband at the 2013 "Seds & Suds" gathering at GSA in Denver, CO, so the Limnogeology Division has already been a major influence on my life in more ways than one. While I may not bring a great amount of professional experience to the table, I hope to make up for that in enthusiasm and eagerness to contribute to the Limnogeology Division. During my time as Secretary I aim to increase awareness of the Limnogeology Division, focusing on new membership/undergraduates and increasing social media presence.

Nominee for Student Representative

Joseph E. Thomas



Education: Ph. D student (2019-present) in Earth Sciences and Environmental Sustainability program at Northern Arizona University; Advisor: Dr. Darrell Kaufman; Presidential Doctoral Fellow (2019-2023); Current projects: Palaeoclimatological interpretations from a 2,300-year-old varved lake sequence in southern Alaska; Paleoclimate inferred from stable isotope and radiocarbon analysis of permafrost and lake sediments from central Alaska; Paleohydrology of Morrison Lake, MT; M.S. Geology, Idaho State University, Advisor: Dr. Bruce Finney (2017-2019), Outstanding Graduate Teaching Assistant (2019); B.S. Geology, Western Colorado University, Outstanding Junior and Senior Geology Student (2016,2017).

Presentations: Late-glacial to Holocene climate of the northern Rocky Mountains inferred from stable isotope analysis of sediments from Morrison Lake, MT, Geological Society of America Conference (2019); Stable Isotope Analysis of Carbonate Sediment and Organic Matter from Morrison Lake Montana: Implications for Paleoclimatic Reconstructions of the Northern Rocky Mountains, American Geophysical Union Conference (2018).

Work Experience: Research Assistant, South Alaska Lakes Project, Northern Arizona University (2019-present); Teaching Assistant, Idaho State University (2017-2019); Research Assistant, Stable Isotope Lab, Idaho State University (2019); Teaching Assistant, Western Colorado University (2017).

Additional Positions: Graduate Student Intern, Green Fund, Northern Arizona University (2019-present); Geology Club Graduate Advisor, Idaho State University (2017-2019); Head Delegate, Model United Nations Club, Western Colorado University (2018).

Statement: Over the course of my education thus far, I have found a deep appreciation for the scientific value of limnogeology. This interest first began after taking an undergraduate course in stable isotopes and their applications to paleoclimatology. I pursued this interest at Idaho State University where I worked on a variety of limnogeology projects and attended summer short courses at both the University of Utah (Isocamp) and LacCore (Summer coring and drilling workshop). My passion for using limnogeology to explore a wide range of questions, and the inherent interdisciplinary aspect of the field, expanded throughout my masters and led me to apply for a PhD position at Northern Arizona University where I am currently working on the Southern Alaska Lakes project. I hope to pursue a career utilizing limnogeologic techniques to address a wide range of environmental questions. As Student Representative of the Limnogeology Division I hope to increase the number of student members, facilitate conversation between student members themselves, and increase awareness of opportunities for career advancement.

Nominate your outstanding colleagues for the Israel Russell Award!

Do you have an outstanding colleague in the field of Limnogeology? It is never too early to start thinking about nominating that person for the Israel C. Russell Award! The Russell Award is awarded for major achievements in Limnogeology through contributions in research, teaching and service.

Nominations should consist of a letter describing the Nominee's accomplishments in the field of limnogeology (broadly defined and including limnogeology, limnology and paleolimnology), service to students and teaching, and contributions to GSA, as well as a Curriculum Vitae. The Nominee need not be a member of the Division or of GSA, but must have made valuable contributions to the Society. The dossiers of nominees who did not receive the award in any given year will be retained and considered for two succeeding years; thus, nominations are valid for a total of three years. Updated information for carry-over candidates may be sent to the Division Treasurer during the ordinary call for nominations. Israel C. Russell Award Committee members are encouraged to initiate nominations for the Award.

Nominations should be forwarded electronically to the Division Treasurer David Finkelstein, (finkelstein@hws.edu). **Deadline is February 1st 2021**, but you can nominate EARLY!

~*~

Kerry Kelts Submission Information

Kerry Kelts Limnogeology Student Research Award ($1000)

Did you know that the Limnogeology Division has a student research award? The Kelts Award supports an undergraduate or graduate student research related to limnogeology, limnology, or paleolimnology for up to $1000.

To apply, please prepare your application as a PDF (or PDFs) with your last name on all file names. The application files should contain a research summary and a short CV (two pages max.). The research summary must include a description of the proposed research, its limnogeological significance, why the award funds are needed for the project, and a brief description of the student's other funding sources. Be sure to include a title. The maximum length for the summary is five pages, including figures and captions; the list of references cited is not included in this limit. Send your application to the Division Chair. Please include "Kelts Award application" in the subject line.

Deadline is February 1st 2021, 12 a.m. EST.

Support the Kerry Kelts Fund

GSA and the limnogeology Division hope to increase the number of Kelts awards, named for the visionary limnogeologist and inspiring teacher Kerry Kelts, in the future. If you can help support this award, please send your donation, labeled "Kerry Kelts Research Awards of the Limnogeology Division," to GSA at P.O. Box 9140, Boulder, CO 80301-9140, USA.

Kerry Kelts just before receiving the first Bradley Medal at the ILIC meeting in Brest, France. (Photo credit: Michael Rosen).

Online Teaching Resources for the Limnogeologist

Teaching Geoscience Online

Do you teach geoscience online? Are you making a rapid transition to teaching geoscience online as a result of your institution's response to COVID-19? Online classroom environments offer unique ways of teaching and interacting. Online classrooms also have unique challenges and require specialized strategies for success. These challenges can be particularly acute for geoscience courses with laboratory and field components. Join a new community of geoscience educators focused on teaching their students in online environments. Ask questions, share experiences, and find resources that meet the needs unique to educators teaching geoscience online.
https://serc.carleton.edu/teachearth/teach_geo_online/index.html

Using the Neotoma Database in the Classroom

The Neotoma Paleoecology Database is an online hub for data, research, education, and discussion about paleoenvironments. The NSF-funded Neotoma database has North American pollen and fossil mammal data for the past 5 million years. The database is designed to make it easier for community members to discover, explore, and share datasets that illustrate paleoenvironmental conditions.

https://serc.carleton.edu/neotoma/index.html

Virtual Palaeoscience (ViPs)

This appears to be in progress: The goal is to create a shared archive of virtual palaeoenvironmental teaching resources to support the teaching of environmental change science. The need for these resources has been greatly accelerated in the short-term in response to COVID19 but we hope to incorporate plans for longer-term creation of digital teaching resources leading to improvements in environmental change teaching, accessibility of teaching and outreach.

https://virtualpalaeoscience.wordpress.com/

Sessions Sponsored by Limnogeology Division at 132nd GSA at ONLINE

Abstract deadline: 4th August (Tuesday), 11:59 p.m. PST

https://community.geosociety.org/gsa2020/home

Due to the COVID-19 health emergency the annual meeting will be held online this year. Topical sessions organized by Limnogeology for the 2020 meeting are as follows:

T164. Crossing the Salinity Divide—Life through the Gateway between Marine and Freshwater Systems Leaders: Lisa Park Boush and Eric Schultz

This session will investigate lifeforms across the tree of life and through space and time, that have successfully transitioned from marine to freshwater environments or that have adapted to life in a spectrum of halohabitats.

T165. Walden Pond: From Glaciation to Thoreau and Beyond Leaders: J. Bradford Hubeny and Francine M.G. McCarthy

We encourage contributions on the environmental and ecological history of Thoreau's iconic Walden Pond, the region, and similarly impacted ponds. Contributions on intersections between humans and nature, or changes since Thoreau's time are especially welcome.

T166. Lakes of the World through Time and Space Leader: Scott W. Starratt,

This session celebrates lacustrine research across the globe. Lakes contain important historical records as their sediments are archives of global change, local human impact, and ecological succession.

T167. Sedimentary Records of Neogene and Quaternary Environmental Change from Eastern Africa Leaders: Michael M. McGlue, Sarah Ivory, Anne L. Billingsley and Catherine C. Beck

This session explores the Neogene and Quaternary history of eastern Africa, including linkages among rift tectonics, volcanism, and hydroclimate change. Contributions that use the sedimentary record to reconstruct paleoenvironments, paleoclimate, and paleoecology are welcome.

Upcoming Meetings

International Association of Limnogeology (IAL)
and
International Paleolimnology Association (IPA) Joint Conference
Bariloche, Argentina, Postponed to: *20-24 March 2022*
https://www.ial-ipa2021.com/

The 18th World Lakes Conference (WLC18)

Virtual conference November 9th, 2020 (Central Mexico time)

http://www.worldlakeconference.ugto.mx/en/

PACIFIC CLIMATE WORKSHOP

Paclim 2022

February 13-16th 2022

(Note: new date due to Covid-19)

Asilomar, California

https://sites.google.com/site/paclimconference/

Go to the Limnogeology Division website at:
http://rock.geosociety.org/limno/index.html
To get the latest information on other Limnogeology meetings and workshops…
David Warburton, Webmaster