



# Quaternary Times



Newsletter

November 2019

Volume 41, Number 2

Published biannually by the American Quaternary Association, Inc.



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The American Quaternary Association Newsletter

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[www.amqua.org](http://www.amqua.org)

...devoted to studying all aspects of the Quaternary Period since 1970

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**Cover:** Dust devil near the Quelccaya Ice Cap, Peru. Photo by Tom Lowell (2009).

## The View from the Moraine: the President's Message

By Tom Lowell  
University of Cincinnati, [lowelltv@ucmail.uc.edu](mailto:lowelltv@ucmail.uc.edu)



Shortly after I started at the University of Cincinnati, back in the 1980s, I was invited to the Cincinnati Museum of Natural History to consult as they developed an Ice Age exhibit. The museum was moving to larger facilities and wanted to build on the success of an immersion experience called the limestone cave. Museum planners envision another immersion experience, this time with a glacier cave and walk-through of the Ice Age landscape in Cincinnati.

I was asked to help re-create the glacier in as much detail as possible. Subsequently, I took some of the museum staff, ranging from the project director to educators to sculptors who would craft the fiberglass glacier, to Iceland with me on my Glacial Field methods trip.

As a result the staff was able to craft a rather realistic glacier and landscape. The glacier had details like basal ice, striated stones, flutes etc. etc. To support this immersion format, panels explaining the orbital theory of the ice age, a grindstone to simulate glacial erosion, an ice-core section from Greenland, numerous photographs of glaciers, and a host of life-sized ice age mammals were added. All nice examples for show and tell. The original intent was to show the museum visitor how “scientists are like detectives, they use clues from the past”. Looking at this collection of items several years later convinced me that a wonderful set of individual exhibits had emerged, but was the overarching message delivered to the visitor? Probably not.

Over time the staff moved on, administrations changed, and eventually plans to revitalize the now called Cincinnati Museum Center were generated and a multi-year face lift is underway. The reconstructed glacier and landscape were retained because of the large infrastructure investment. All other supporting materials were removed to allow a fresh take. Recently, I was asked again to help hone the staff's message that climate is a major player for change. Just how can a reconstructed landscape from the last ice age be used to deliver that message? It is safe to say more discussions, testing of visitor reactions are needed.

The advertising industry has shown us a message needs to be simple, focused on one point, and repeated over and over. As scientists we have many opportunities to engage the public and it may be worth asking ourselves what message it is we wish to deliver. The details are key to our collaborators and colleagues. To the layperson? What is the primary message you want to convey about your work?



Photo: T. Lowell

## 2020 Biennial AMQUA Meeting - News -

By Ben Fitzhugh

University of Washington, [fitzhugh@uw.edu](mailto:fitzhugh@uw.edu)

AMQUA 2020 - the AMQUA 50<sup>th</sup> Anniversary Bi-annual Meeting will be held **June 17-20, 2020** on the campus of the **University of Washington in Seattle** on the theme of "*Quaternary Futures*." We will honor the 50 year history of the Association and explore promising expansions and new directions poised to carry Quaternary research into our second half century. Educational field excursions are being planned for the day or two following the meeting. The Banquet and Awards ceremony will be held the evening of June 19<sup>th</sup>. **Registration** will open by December 1, 2019 at <https://sites.uw.edu/amqua50/>. Poster abstracts can be submitted anytime to [qrc@uw.edu](mailto:qrc@uw.edu), with a priority deadline of March 1, 2020. With a focus on the future of Quaternary science, we especially want to **encourage student and early career researcher participation**. Early registration and student discounts will be available, and students who wish to volunteer a few hours during the meeting in exchange for free registration should contact Erin Williamson ([qrc@uw.edu](mailto:qrc@uw.edu)) to get placed

on the list while spaces remain. Discounted hotel rooms have been reserved near campus at the University Inn, Watertown, and Graduate Seattle Hotels (see below). We also hope to be able to provide a "couch-matching" service to connect visiting students to local students and faculty with room to share.

I look forward to seeing you in Seattle!

**Ben Fitzhugh**

Director of the Quaternary Research Center, UW & chair of the AMQUA 2020 organizing committee

To book at **University Inn** (\$219/night), enter the conference code, AMQUAUI, at their website. To book at **The Watertown Hotel** (\$219/night), enter the conference code: AMQUAWT, at their website. To book at the **Graduate Seattle Hotel** (\$199/night), use the Group Code: 06172020AMQU and call 206-634-2000 *before May 18, 2020* or visit their website to book online.



Photo: <https://www.mha.uw.edu/about/uw-seattle/>



## Other AMQUA News

*By Colin Long*

*University of Wisconsin Oshkosh, longco@uwosh.edu*

# 2020 AMQUA COUNCIL AND EXECUTIVE COMMITTEE ELECTIONS

It is election season. In order to inform you regarding nominations, I have provided an overview of AMQUA governance. Which is followed by the official Call for Nominations for AMQUA Council and Executive Committee positions.

The American Quaternary Association (AMQUA) Council and Executive Committee comprise the governing body of AMQUA. The Council is made up of 14 councilors (two from each of seven sub-disciplines) that serve four-year terms. Each two years a cohort of seven (one from each sub-discipline) are elected. The Executive Committee consists of the AMQUA President, President-Elect, Secretary, and Treasurer. Each two years a President-Elect, Secretary, and Treasurer are elected. The President-Elect becomes President after a two year stand. Nominations are collected and a ballot is generated by the Nominating Committee comprised of the standing President-Elect and two other members. The Secretary and Treasurer are eligible for re-election without limitation. The President, President-Elect, or Councilors may not serve consecutive terms. The current roster of Councilors and Executive Committee can be found under the 'About' tab on the AMQUA website: <http://www.amqua.org/>

### **2020 AMQUA Elections — Call for Nominations**

Nominations are being solicited for individuals to

serve on the AMQUA Council and Executive Committee. Self-nominations for all positions are welcome. Each Councilor represents one of seven disciplinary groups and serves a four-year term. The disciplinary groups are: 1. Terrestrial Geoprocesses; 2. Marine Geoprocesses; 3. Geohistory; 4. Paleobiology; 5. Paleoclimatology; 6. Archaeology; and 7. Geochronology-Geochemistry-Geophysics.

The Executive Committee offices up for election are President-Elect, Secretary, and Treasurer. The President-Elect stands for two years and then succeeds to the office of President upon completion of the president's term. The role of President includes presiding at all meetings of AMQUA, overseeing AMQUA's mission, and acting as the official representative of AMQUA. The Secretary records the proceedings of AMQUA meetings and conducts or coordinates all correspondence of the Association. The Treasurer is responsible for the collection, disbursement, and accounting of funds. The Treasurer submits financial reports to the AMQUA Council at each Council meeting and conducts all financial correspondence of AMQUA.

Please send nominations by November 29, 2019 to Colin Long, AMQUA Secretary, at [longco@uwosh.edu](mailto:longco@uwosh.edu). Please note the disciplinary group with Councilor nominations. Ballots will be available online by mid-December and the results announced by mid-January 2020.

To be eligible for office, or to vote, your membership must be current. Contact Chris Hill at [amquatreasurer@gmail.com](mailto:amquatreasurer@gmail.com) or Colin Long at [longco@uwosh.edu](mailto:longco@uwosh.edu) with inquiries regarding your

membership status. To pay AMQUA's modest membership dues see <http://www.amqua.org/index.php?id=13>

## 2019 AND 2020 DISTINGUISHED CAREER AWARDS

Nominations are being solicited for the 2019 and 2020 AMQUA Distinguished Career Award. The award recognizes a Quaternary scientist who has contributed significantly and continuously to the advancement of Quaternary science in any discipline. This award is the highest one made by AMQUA and truly honors someone with a lifetime commitment to Quaternary science. We encourage everyone to consider and nominate those senior scientists who have contributed significantly to their field. The award is for scientists who have worked on North American Quaternary issues for a substantial part of their career. The nominee must be alive at the time of nomi-

nation but does not have to be a member of AMQUA. The award recipients will be recognized at the 2020 Biennial Meeting to be held June 17-20, 2020 in Seattle. The award will be announced prior to the Biennial Meeting on the AMQUA web site and listserv. To nominate a scientist, please send a letter outlining why the nominee is qualified for the Distinguished Career Award and forward her/his current CV. All nominees are retained as candidates for five years. Please send your nominations by December 2, 2019 to Tom Lowell, AMQUA President at [thomas.lowell@uc.edu](mailto:thomas.lowell@uc.edu). If you have any questions please feel free to contact me at [longco@uwosh.edu](mailto:longco@uwosh.edu)



## The XX<sup>th</sup> INQUA Congress Dublin, Ireland, 25<sup>th</sup>-31<sup>st</sup> July 2019

By Pete Coxon<sup>1</sup>, Keith Bennett<sup>2</sup>, Catherine Dalton<sup>3</sup>, Fraser Mitchell<sup>1</sup>, Stephen McCarron<sup>4</sup>  
<sup>1</sup>Trinity College Dublin, <sup>2</sup>University of St. Andrews, <sup>3</sup>Mary Immaculate College, <sup>4</sup>Maynooth University

*This article has been previously published in the Quaternary Newsletter Number 149, October 2019, pages 39-46. The publisher provided written permission to reproduce this article.*

INQUA 2019 was the largest INQUA congress to date with 2305 (56% male, 44% female) delegates from 75 countries. The Congress was held at the Convention Centre, Dublin and the professional conference organiser employed to assist with the organisation and hosting of the event was Keynote Ltd, a Dublin based specialist company. There were 139 sessions convened including 1185 oral presentations and 1476 posters. In addition, there were 6 plenary lectures by invited guests and a set of lunchtime presentations given by the INQUA medal winners with a well-received special presentation on 'Quaternary Mars' taking place on the final day. The flawless timetabling and organisation of this volume of presentations took a lot of care and patience by a number of people in IQUA and Keynote Ltd staff working in close collaboration in the months before and during the Congress.

There was an extremely good take-up for the fieldtrip programme which ran in tandem with the Congress meeting. 585 delegates attended 22 pre-, mid- and post Congress fieldtrips to all corners of the island of Ireland and several locations in Britain thanks to the excellent support of the QRA.

### **Background**

On 24th January 2014 the Irish Quaternary Association (IQUA) held an executive meeting in Kennedy's pub on Lincoln Place in central Dublin. One item that came up under AOB was that we should bid for the 20th INQUA congress to be held in 2019. After some uproarious laughter a semi-sane

case was made and a small group was tasked to think about an approach. Within seven days (!) representatives of the Convention Centre Dublin (CCD) and Tourism Ireland appeared in Trinity College to outline possibilities and to offer available funding to support a bid. With experience of being the Science Programme Chair for the 18th Congress in Bern, having been the Secretary-General of INQUA for two intercongress periods (2003-2015-2011) and having been the Irish International Council (IC) representative for Ireland 4 times in the past and at that time about to be the QRA President (and hence the UK IC representative) Pete Coxon took the Chair of the Local Organising Committee (LOC) and we (IQUA) all sought volunteers and support.

The original LOC (Figure 1) meetings and membership were large at about 30 members with the advantage that a large list showed a firm Irish commitment of a range of well-known Quaternary scientists that could be presented in a bid document – the later meetings required the identification of individual chairs of critical subcommittees.

During 2014 IQUA and the LOC had to make a number of important decisions including choosing a Chair for the Science Programme Committee (SPC) and interviewing potential professional conference organisers (PCO). Both of these actions were essential to success as the potential scale of an INQUA Congress is so large. In July 2014 Keith Bennett agreed to Chair the SPC, INQUA were told of our



**Figure 1.** *The Local Organising Committee (A) during a committee meeting in March 2016. From left to right: Steve Davies, Gayle McGlynn, Robin Edwards (obscured) Michael Sheehy (looking at noticeboard), Catherine Dalton, Catherine Delaney, Gill Scott, Noel Mitchell (Keynote PCO), Siobhan O'Hare (Keynote PCO), Margaret Brown and Bettina Stefanini (back to camera), (B) after the March 2018 meeting. From left to right: Gayle McGlynn, [Portrait of Frank Mitchell watching over events], Bettina Stefanini, Kieran Craven, Keith Bennett, Pete Coxon, Fraser Mitchell, Catherine Dalton and Rachel O'Hare (Keynote PCO).*

intention to bid also in July 2014 and 4 PCOs were interviewed at the CCD in November 2014.

The choice of Keynote as PCO and Keith as Chair of the SPC with Catherine Dalton as Vice Chair proved to be pivotal to the success of the Congress as firm commitment and serious engagement by a relatively small number of people soon became a key part of the whole exercise.

An important milestone was reporting the idea and what had subsequently transpired to the IQUA membership at the AGM in Maynooth in April 2015 where support for the plan and permission to present the bid in Nagoya was obtained and IQUA agreed to assist in what would eventually become essential administrative and practical support.

The bid document, including a detailed budget, had to be professionally prepared by Keynote (the PCO) and the LOC and the bid document was sent to the

INQUA Executive in April of 2015. The financial margins were so tight that only the exact number of copies of the bid could be printed to cover the IC membership. Keynote (Noel Mitchell) accompanied the Irish delegation to Nagoya to make the bid and the bid itself was presented by Fraser Mitchell, as the Irish representative to the International Council, and we won on the first count against Italy and Spain.

After celebrating the vote of confidence in the Irish bid and IQUA, the reality of the immense task ahead soon hit home, and there followed a number of meetings that identified key areas we needed to concentrate on, including: the scientific programme; fieldtrips; support for early career researchers; outreach events; promotion, marketing and local media; sponsorships and exhibition; social events and the overall management of tasks and the LOC.



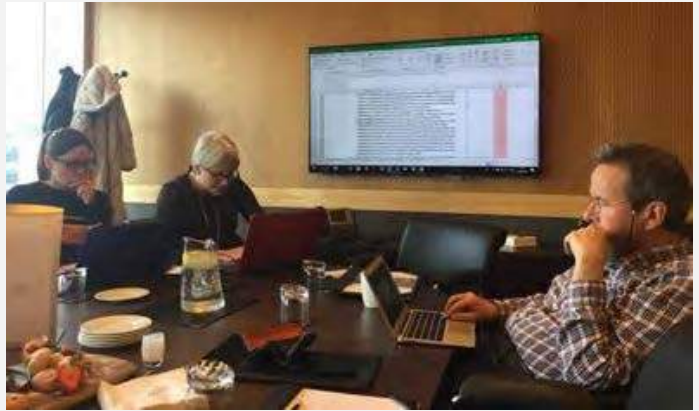
### *Science Programme*

Keith Bennett, with help from an international Scientific Programme Committee, led the monumental task of dealing with INQUA Commissions, choosing the six plenary speakers to represent the breadth of modern, relevant and Quaternary science, calling for the session topics, sorting the session suggestions, launching the abstract system and finalising the programme (Figure 2). Keynote had the experience of managing such a large body of abstracts and, in particular, Leone Mitchell of the PCO provided expert knowledge and spreadsheet wizardry at critical junctures.

The Congress opened with a wonderful address by Mary Robinson (Figure 3) who served as President of Ireland from 1990-1997 and as the UN High Commissioner for Human Rights from 1997-2002. She is Chair of The Elders and a member of the Club of Madrid and the recipient of numerous honours and awards including the Presidential Medal of Freedom in 2009 from the (then) President of the United States Barack Obama.

### *Fieldtrips*

The organisation of an array of potential fieldtrips of varying duration and timing (Pre- Mid- and Post-Congress) to different locations was a particularly difficult one due to a number of issues. Obtaining insurance was one, and having trips run in July/August when Irish tourism is at a peak was another. The issues raised here would be worth discussing in detail by any group attempting a similar exercise, and the team who worked on coordinating the fieldtrips, led by Stephen McCarron and Bettina Stefanini would be happy to do so. The scale of the enterprise meant that many others from the all-important fieldtrip leaders themselves to all suppliers and the staff of Keynote Ltd were involved too, over a period of several years and intensively in the final year before the Congress.



**Figure 2.** Critical meeting at the CCD to sort the final programme structure 25th February 2019. From left to right: Rachel O'Hare (Keynote PCO), Leone Mitchell (Keynote PCO) and Keith Bennett (Chair SPC).



**Figure 3.** Mrs Mary Robinson giving the opening address at the congress in the main auditorium of the Dublin Convention Centre. Mary is the President of the Mary Robinson Foundation – Climate Justice. She served as President of Ireland from 1990-1997 and was the UN High Commissioner for Human Rights from 1997-2002. She is Chair of The Elders and a member of the Club of Madrid. Mary is the recipient of numerous honours and awards including the Presidential Medal of Freedom from the President of the United States in 2009.



**Figure 4.** A lasting legacy in 15 specially produced fieldguides to accompany some of the many fieldtrips run by INQUA 2019. Design and production: Stephen McCarroll. (There is a Swanscombe handaxe collected by John Wymer's father and a ventifact from the Namib desert for scale).

The production of 15 new guidebooks (Figure 4) to accompany nearly all of the Irish-based trips was a formidable task, carried out by a combination of the fieldtrip leaders and Stephen, with the help of Gayle McGlynn on several guides.

The guides required extensive typesetting, design, editing and print production work, particularly in the weeks and months of 2019 leading up to the Congress. Stephen and IQUA are indebted to the printing company Digital Print Ireland for their ‘beyond the call of duty’ assistance in delivering all guides so professionally produced in time for the Congress. These books will provide a great legacy of the Congress and an unparalleled educational resource for years to come. They are on sale at the IQUA website: <http://iqua.ie>. The trips saw 585 people participating in what turned out to be (mostly) clement or outright stunningly pleasant weather (Figure 5).

### **Early Career Researchers**

Donna Hawthorne led the LOC work with Sabrina Renken helping. Registration numbers suggest that 29% of delegates were early career researchers. A range of events were held across the congress targeted at Early Career Researchers (ECRs). On Monday lunchtime there was an ECR Ice-breaker,

including a Quaternary themed quiz, which was a chance to network and meet fellow ECRs and have a bit of fun. Short talks were held on Academic Networking (Speakers: Nina Kuosmanen and Shilpa Pandey) and the INQUA ECR community (Speaker: Eduardo Alcheron). A series of workshops gave the opportunity for ECRs to enhance their analytical skills, with sessions on Neotoma Paleocology Database (Leaders: Jessica Blois and Simon Goring), Paleofire and the Global Charcoal Database (Leaders: Global Paleofire Working Group), Radiocarbon Dating and Chronology creation (Leader: Maarten Blaauw) and Statistical Analysis on climate time-series (Leaders: Tobias Erhardt and Florian Adolphi). Two splinter meetings were also held during the congress and targeted at ECRs; an INQUA ECR business meeting and a PAGES ECN business meeting, with a focus on how to get more involved in the organisations and participate in the planning of future activities and events. All events were well attended and supported by the ECR community.

### **Outreach events**

Catherine Dalton (as President of IQUA), Martha Coleman, Benjamin Thebaudeau and Kieran Craven organised and ran a great range of outreach events –amongst the most successful were the ‘Ireland and the Ice Age’ event held at the National Botanical Gardens in April 2019 and the accompanying official launch of a new IQUA booklet entitled ‘Giants of Irish Quaternary Science’. The latter booklet had been produced after a fascinating set of talks held at the Hunt Museum in Limerick as IQUA’s spring meeting in 2018 entitled ‘Standing on the shoulders of Giants’. The book and the ‘Giants’ meeting also led to the pull-up banners used at the CCD of famous Irish Quaternarists.





**Figure 5.** Some highlights from fieldtrips. (A) 'Wicklow in the Grip of an Ice Age' - one of the Mid Congress trips on Sunday 28th July 2019 - co-led by Pete Coxon (with corer, Chair of the Local Organising Committee) and Fraser Mitchell (holding guidebook) on the Liffey Head Bog, (B) Lunchtime stop planned as a picnic on the grass for the 64 participants on the 'Wicklow in the Grip of an Ice Age' trip. Luckily the weather was perfect. (C) Post Congress fieldtrip to Clare Island off the coast of Mayo. Summit of Knockmore (462m) in perfect weather.

A novel and hardy outreach event was Sam Roberson's 'Irish Quaternary Cycle' along the length (1000km) of much of the western coast of Ireland. Sam was joined along the way by like-minded cyclists including Michael Sheehy and Catherine Dalton.

### ***Promotion, Marketing and Social Media***

An early start was required here with a Facebook launch by Gayle McGlynn on 13th March 2015 quickly followed by a St. Patrick's Day card on Facebook and information in 5 languages sent out to Quaternary lists. Gayle and Cathy Delaney kept up disseminating information through Facebook and

Twitter right through the important pre-bid period and after to generate interest in Congress attendance. A wide range of people participated in posts and the Congress trended every day on Twitter.

### ***Sponsorship and exhibition***

The important work on garnering sponsorship was spearheaded by Fraser Mitchell and Keynote. The task of getting commercial sponsorship of any amount was very important in enabling the success of the Congress as the registration fee would not have provided the level of comfort required during a seven day event.

### ***Social Events***

The social events subcommittee headed by Cathy Delaney and Gayle McGlynn toured several Dublin venues and decided that despite the cost that the Guinness Brewery was by far the best venue. Whilst cheaper venues were good and could accommodate a sizable proportion of the attendees the cost difference was not substantial. Dublin is a busy and prosperous place and it is a sellers' market so we had a great night at Guinness's!

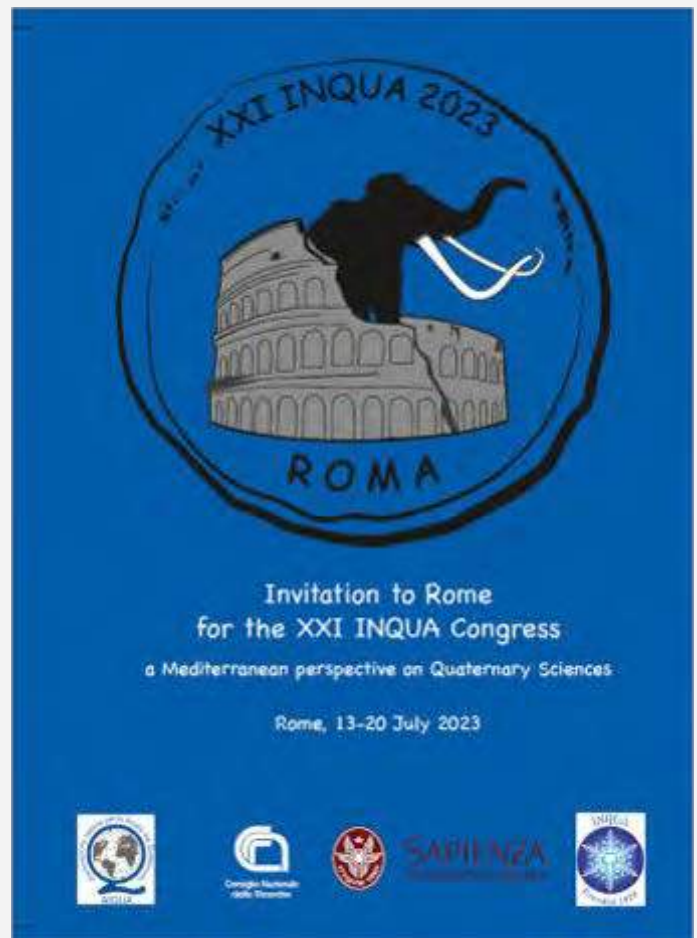
### ***Overall management of tasks and the Local Organising Committee***

Keynote were represented at every LOC meeting and many of the fieldtrip subcommittee meetings as well as organising and liaising meetings and terms with the CCD. Without Keynote's work we could not have run the Congress. It is worth noting that throughout the planning and organisation of all of the INQUA 2019 activities all of the LOC and SPC were volunteers who carried out their everyday duties at Universities, Colleges, in Surveys, in companies and as research students etc. Over the years that INQUA 2019 was conceived and executed, IQUA's officers and members were also running their traditional annual programme including a spring meeting, a fieldtrip and an autumn symposium every year without fail – the commitment of all concerned was immense. This commitment by many to IQUA and the hosting of this major international event in turn was demonstrated by the ability of a relatively small association to host.

The first INQUA fieldtrips in late July and then the opening of the Congress at the CCD venue went as planned and scheduled. Five years of planning had paid off and once started, the single site venue proved a very comfortable and easy to navigate location for the hosting of multiple parallel sessions. The attendees were able to relax into a most enjoya-

ble and fruitful scientific congress and their engagement and efforts to come to Dublin are greatly appreciated by the organisers. INQUA 2019 is now complete and we'd like to thank all those 2000+ delegates that made the journey to Dublin, and made the Congress a resounding success that will hopefully lead to an energised new inter-Congress period.

All in IQUA look forward to attending the next Congress in Rome.



<http://www.inquaroma2023.it/>



## Supporting U.S. Students and Early Career Quaternarists: The 2019 INQUA Congress Travel Fellowship Program

*By Rolfe D. Mandel, Chair, U.S. National Committee for Quaternary Research, University of Kansas  
Ester Sztein, Assistant Director, Board on International Scientific Organizations, The National Academies  
of Sciences, Engineering, and Medicine*

The U.S. National Committee (USNC) for Quaternary Research represents the interests of the U.S. Quaternary community in the International Union for Quaternary Research (INQUA), advances Quaternary research both in the United States and abroad, and formally represents the United States in INQUA through the National Academy of Sciences, the U.S. adhering body to INQUA. INQUA holds a quadrennial International Congress, which represents the foremost opportunity for Quaternary scientists from around the world to present their research and discuss the latest developments in their disciplines. USNC/INQUA organized a Congress Travel Fellowship Program for U.S. graduate students and early career scientists presenting their research at the 20th INQUA International Congress, which was held in Dublin, Ireland, on July 25-31, 2019. This program was supported by NSF award #1927092 with an additional contribution by AMQUA. We, on behalf of the USNC/INQUA, are very grateful to both NSF and AMQUA for their assistance.

The 20th INQUA Congress gave U.S. graduate students and early career scientists the unique opportunity to discuss their original research among their cohort of awardees and with U.S. and international scientists at all career stages. A subcommittee composed by Julio Betancourt (USGS, USNC/INQUA member, subcommittee chair), Tammy Rittenour (Utah State University, USNC/INQUA member), and J.J. Shinker (University of WY, on behalf of AMQUA), evaluated the applications and the USNC competitively awarded 26 fellowships.

In addition to the travel fellowships, the USNC/INQUA organized a mentoring dinner for the awardees and senior scientists at the beginning of the Congress, which was highly rated by the attendees. The goals of this dinner were to create a sense of cohort among the awardees, share with them information about INQUA's, USNC/INQUA's and AMQUA's goals and functions, provide guidance for navigating the Congress, and give them the opportunity of having one-on-one conversations with experienced scientists and with their peers. We also organized a WhatsApp group that facilitated communications within the cohort by providing a space to publicize each other's presentations and to organize outings and other social activities during the Congress. At their return from Dublin, we asked awardees to complete a survey about their experience.

This program's goals were to assist graduate students and early career U.S. Quaternarists to present their original research and interact with many scientists at a variety of career stages and from around the world. About three-quarters of the respondents said that they met with current collaborators and three-quarters said they met with potential new ones. Participants felt a sense of belonging at a big international Quaternary conference and received important feedback about their work from scientists in their same field and/or in very different fields. In some cases, this input already resulted in valuable contributions to the awardees' work. These interactions will likely result in future collaborations among early career scientists and foster strong interdisciplinary research.



The awardees and experienced scientists joined for a dinner at Quay 16 on Thursday 25<sup>th</sup>, 2019. The restaurant is on board the former tender ship the MV Cill Airne, located on North Wall Quay, Dublin's floating Restaurant & Bar on the River Liffey.



We really enjoyed organizing this program and sharing the experience with all the awardees. The USNC/INQUA plans to organize a similar program for the 2023 INQUA Congress in Rome, Italy and we hope that AMQUA members and their colleagues will participate!

### List of awardees and their abstract titles

**Kevin Barrett** (University of Wisconsin, Madison): Hawaiian Paleohydrology: Insights from Testate Amoebae and *Cladocera* in Peatland Deposits

**Kevin Burke** (University of Wisconsin, Madison): Testing Possible Climatic Mechanisms of Vegetation Turnover and Novelty in North America and Europe

**Vachel Carter** (University of Utah): Wildfire Risk at Different Elevations: Contextualizing Modern Fire Activity Through a Paleo-perspective; and People, not Climate, Structured Past Fire Regimes in South-central Utah

**Jon Edwards** (Oregon State University): The Imprint of Heinrich Stadials and Dansgaard-Oeschger Cycles on the Latitudinal Distribution of Methane Sources Inferred from Ice-core Gas Records

**Krista Evans** (University of Hawaii, Manoa): Human Reactions and Escaping from an Eruptive Santorini (Thera), Greece

**Elizabeth Fard** (University of California, Los Angeles): High-resolution Geochemical Record of Three Marshes from the San Francisco Bay area

**Jessie George** (University of California, Los Angeles): Reconstructing Pleistocene Plant Community Shifts from the La Brea Tar Pits, California, and Implications for Regional Patterns of Plant Response to Climate Change

**Dulcinea Groff** (Lehigh University): A Multi-proxy Reconstruction of a Terrestrial-marine Linkage in Falkland Islands

**Christopher Halsted** (University of Vermont): Assessing the Erosivity and Deglacial Thinning History of the Southeastern Laurentide Ice Sheet Using in-situ cosmogenic  $^{10}\text{Be}$  and  $^{14}\text{C}$

**David Harning** (University of Colorado, Boulder): Lipid Biomarkers Quantify Holocene Temperature in Icelandic Lakes and Soils *and* Holocene Tephrochronology of West Iceland

**Geoffrey Johnson** (University of Oregon): A Novel Approach to Local and Regional Application of Paleoeological Perspectives in Dry Forest Management and Restoration

**Joshua Kelly** (San Diego State University): Detecting Primary Climate Drivers of Shoreline Change along Southeast Queensland, Australia Using Historical Landsat Imagery

**Phillip Kerr** (University of Iowa): Evidence for Multiple Advances of the Southwestern Laurentide Ice Sheet during MIS 3

**Caroline Kisielinski** (University of Kansas): eDNA Analysis at Mid-latitude Sites for Paleoenvironmental Reconstruction

**Samantha Krause** (University of Texas, Austin): Reconstructing Tropical Wetlands and Maya Agroecosystems in Northwestern Belize

**William (Buzz) Nanavati** (Montana State University): Anthropogenic and Natural Drivers of Vegetation and Fire History Along the Forest-steppe Border

of the Eastern Andes (38-50°S)

**Melissa Pardi** (Vanderbilt University): A Multi-proxy Approach to Advance our Understanding of Niches in Fossil Mammals

**Christopher Schiller** (Montana State University): Quaternary Vegetation Responses to a Range of Volcanic Disturbances in the Northern Rocky Mountains (USA)

**Katarena Shiner** (Baylor University): The Change of  $\delta^{13}\text{C}$  Values in Belizean Soil and its Implications on Maya Agriculture

**Allison Stegner** (Stanford University): Spatial and Temporal Indicators of Resilience Loss in Networks of Paleoeological Records

**Susann Stolze** (Colorado School of Mines): Holocene History of 'Non-native' Tree Taxa in Ireland

**Rebecca Taormina** (Baylor University): Predictive Site Modeling for Pre-Clovis Buried Materials in Central Texas

**Richard Vachula** (Brown University): Constraining Charcoal Source Area to Better Inform Paleofire Interpretations *and* Disentangling the Influences of Climate and Human Management on Fire in the Yosemite

**Greta Wells** (University of Texas, Austin): Geomorphologic and Geochronological Reconstruction of Holocene Jökulhlaups along the Hvítá River and Gullfoss Waterfall, Iceland

**Malte Willmes** (University of California, Davis): Strontium Isotopes Reveal New Insights into the Complex Life History of Modern and Ancient Fish in California

**Davina (Allie) Wyman** (University of Illinois, Urbana-Champaign): Reconstructing Last Millennium Hydroclimate from Kiritimati Sediments Using Lipid Biomarkers