

Quaternary Times



Newsletter

April 2018

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The American Quaternary Association Newsletter

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Cover: Chapman Beach, Guantánamo, Cuba. Photo taken by E.S. Shweig/D.R. Muhs.

The View from the Moraine: the President's Message

By Sheri Fritz, University of Nebraska – Lincoln
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Plans for the upcoming AMQUA-CANQUA meeting at Carleton University in Ottawa (August 7-11, 2018) are in full swing. There is a diverse set of proposed sessions and still plenty of time to submit abstracts – the registration and abstract submission deadline is May 7, 2018. Mid-meeting excursions are one of the planned activities and included in the registration fee; there also are options for pre- and post-meeting field trips and a couple of pre-meeting workshops. At the AMQUA-CANQUA meeting, we look forward to celebrating the recipients of the AMQUA Distinguished Career Awards for 2017 and 2018. The local meeting organizers have arranged for inexpensive lodging on campus or there are a variety of hotels and Airbnb rentals – so plenty of options, whatever your style.

Ottawa is a beautiful city and has lots to offer, including bike sharing in the center of downtown and a new light rail system, a diversity of restaurants, plenty of lovely parks and green spaces, and many interesting historical sites. The meeting will undoubtedly be a great venue for interacting with colleagues and friends and sharing ideas, so please plan to attend!

See the meeting website for additional information on abstract submission, registration, and the venue:

<https://www.quaternary2018.com>

At the meeting, the AMQUA Council will meet to discuss various issues related to the society. Among the issues that have been raised in recent months are how to address issues related to scientific integrity and professional ethics, interactions with other societies involved in Quaternary science, and ways to effectively support early career scientists. If you have ideas for AMQUA's future or any concerns that you'd like to raise, please let me or one of the other council members know – we welcome your input and feedback.

Science, particularly environmental science, continues to be intensely scrutinized, so our community needs to persist in finding creative ways to emphasize the value of science and its critical importance in shaping our present and future world. I urge you to stay engaged in whatever ways make sense for you. Meanwhile here's to the onset spring and the coming long days of summer.



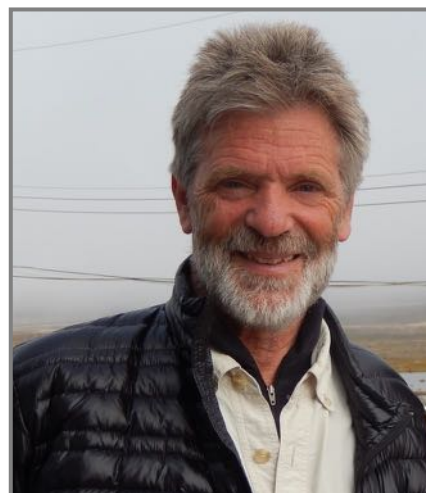
<https://www.quaternary2018.com/>

AMQUA Distinguished Career Awards for 2017 and 2018

*By Sheri Fritz, University of Nebraska – Lincoln
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The American Quaternary Association Distinguished Career Award recognizes a Quaternary scientist who has contributed significantly and continuously to the advancement of Quaternary science. It is the highest award made by the Association and honors a lifetime commitment to Quaternary science. By consensus of the AMQUA Council and Executive Committee, it is our pleasure to announce that the recipient of the 2017 AMQUA Distinguished Career Award is Dr. Cathy Whitlock, Montana State University and the recipient of the 2018 AMQUA Distinguished Career Award is Dr. Gifford Miller, University of Colorado - Boulder. There will be a formal presentation of these awards at the CANQUA-AMQUA joint biennial meeting this August in

Ottawa, so we hope you can be there to celebrate and congratulate them in person. More extensive citations describing their research and career contributions will appear in the fall newsletter.



**AMQUA Distinguished Career Award winners:
Dr. Cathy Whitlock (2017) and Dr. Gifford Miller (2018)**

2018 AMQUA Membership Information

*By Colin Long, University of Wisconsin Oshkosh
longco@uwosh.edu*

Current memberships in AMQUA have grown by 61% since January 2017. As of March 1, 2018 there are 262 members who have paid dues through 2018, compared to 160 members in January 2017. Your membership dues do make a difference. As you know, AMQUA functions as a volunteer organization with all membership dues redistributed towards support of the Biennial meetings, student travel grants to Biennial meetings, Distinguished Career

Awards, and a visible presence at national meetings such as the Geological Society of America and our website. I anticipate continued increase in membership as the CANQUA-AMQUA biennial meeting approaches.

If you have any questions regarding your membership status please contact AMQUA treasurer Chris Hill (chill2@boisestate.edu) or AMQUA Secretary Colin Long (longco@uwosh.edu).

2018 AMQUA Councilor and Executive Committee Election Results

By Colin Long, University of Wisconsin Oshkosh
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At the upcoming biennial AMQUA meeting in Ottawa this coming August, the four-year terms of seven Councilors and the two-year terms of the President-Elect, Secretary, and Treasurer will expire. The AMQUA election from this past February was held to select AMQUA members to fill these governance positions. Councilors whose terms will expire in August of 2018 are Dave Rhode (Archeology), Steven Forman (Geochronology, Geophysics, Geochemistry), Alec Aitken (Geohistory), Anders Carlson (Marine Geoprocesses), Jessica Blois (Paleobiology), Valerie Trouet (Paleoclimatology), and Tim Beach

(Terrestrial Geoprocesses). In addition, Sheri Fritz, the AMQUA President for the term 2016-2018 will be succeeded by Tom Lowell the current President-Elect. Tom will be AMQUA president from 2018 to 2020.

The new councilors and executive committee members will serve from 2018 to 2022 and from 2018-2020, respectively. Thanks to all those who volunteered to serve on the AMQUA Council and those who participated in the election.

Officer	Office	Term
Tom Lowell	President	2018-2020
Jack Williams	President-Elect	2018-2020
Colin Long	Secretary	2018-2020
Chris Hill	Treasurer	2018-2020
Councilor	Subject Area	Term
Jorie Clark	Archeology	2018-2022
Amanda Keen-Zebert	Geochronology, Geophysics, Geochemistry	2018-2022
Brandon Curry	Geohistory	2018-2022
Diane Thompson	Marine Geoprocesses	2018-2022
Camille Holmgren	Paleobiology	2018-2022
Lesleigh Anderson	Paleoclimatology	2018-2022
Laurie Grigg	Terrestrial Geoprocesses	2018-2022



Developments in the Neotoma Paleocology Database

By Jessica Blois, University of California, Merced
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Papers and Grants

The Neotoma vision paper has been published by Quaternary Research (see *Recent Publications* for details).

New funding from NSF-EarthCube has been awarded to the THROUGHPUT project (PI: Simon Goring) to begin developing standards for ecological and geological data and to the Geochron-API project (PI: Brad Singer) to begin developing systems that would let geochronology labs post their data to online servers, for use by third-party resources such as Neotoma.

Endorsements, accreditation, and governance

Neotoma has been endorsed as a recommended data resource and repository for Quaternary paleoecological and paleoenvironmental data by AMQUA and PAGES.

Neotoma was accredited by ICSU-WDS. In 2017, Neotoma became a member of the World Data System (<https://www.icsu-wds.org/>), a global, interdisciplinary, accreditation body for data providers, and data service providers. This accreditation ensures that Neotoma is part of a body of global experts, continually working toward best practices in data management, storage, and access.

First elections were held for the Neotoma Leadership Council (NLC)! This is a major milestone as we establish the Neotoma Leadership Council as the primary policy and governing body for the Neotoma Paleocology Database.

We welcome to Dr. Suzie Pilaar-Birch as the newest member of the NLC!

New data and databases

Neotoma welcomes the Neotoma Biomarker Database, a new Constituent Database capable of storing organic biomarker data and associated stable isotopic measurements. The first organic biomarker dataset has been uploaded!

Mona Colburn, Vertebrate Data Steward, joins the team! Mona has started uploading FAUNMAP2 and MIOMAP data. She and Allison Stegner joined Eric Grimm for an intensive training workshop in late October and uploaded a number of datasets during that time. Ed Davis has developed scripts to batch-export data from FAUNMAP2 into Tilia files, ready for cleaning and upload, and will be working on the MIOMAP port in early 2018.



European Pollen Database (EPD) data uploads are going strong! Thomas Giesecke, Petr Kuneš, Eric Grimm, and others met in November for an intensive European Pollen Database Steward training workshop. Since then, several EPD datasets are being uploaded daily. It's a lot of fun checking the Neotoma home page (www.neotomadb.org) and seeing all the new datasets going up. You can follow updates from the EPD team on Twitter at @EuPolDB.

Workshops

An ostracode workshop, exploring Quaternary non-marine ostracode data through the Neotoma Database and GIS mapping, was held in Santa Barbara, CA, in August 2017 as part of the International Society of Ostracodologists (ISO) meeting, led by Alison Smith, Brandon Curry, and collaborator David J. Horne. This full day workshop provided training in the use of the Neotoma Paleocology Database (www.neotomadb.org) to access and analyze paleoecological data and also an introduction to GIS mapping using the free software DIVA-GIS.



A launching workshop to the Neotoma Biomarker Database (NBD) was held at Lamont-Doherty in February 2018 and sponsored by the NSF EarthRates and Cyberinfrastructure for Paleogeoscience RCNs. At this workshop, led by Jonathan Nichols, Megan Carter, Eric Grimm, and Jack Williams, variable names and units were defined, several test datasets were uploaded, and new data stewards were trained. Further data uploads and a paper on recommended best practices are planned for later in 2018.

Join Neotoma!

If you are interested in joining the Neotoma community, there are three ways you can get involved!

- 1) Follow Neotoma activities by joining the Neotoma announcements listserv. You will get occasional updates about Neotoma database activities. If you have a google account, you can request to join the group. If you don't have a google account, email Jessica Blois (jblois@ucmerced.edu) to be added directly. You can also follow Neotoma on Twitter ([@neotomadb](https://twitter.com/neotomadb)).

- 2) Become a member of Neotoma. This means that you will get the same regular updates about Neotoma database activities, but you also can play a role in the governance of the database by voting on initiatives and leadership, or even serving on subcommittees in topics of interest to you! To become a member, fill out the form found here: <https://docs.google.com/forms/d/1CxAMlsXpkFyUIuq7YWSVTN8vpIV3okbV0vdAYNmwsHw/edit>.

Read more about membership in our bylaws (https://www.neotomadb.org/uploads/Neotoma_Governance_Bylaws-v19June2017.pdf).

- 3) Become a Neotoma Data Steward. Data Stewards are analogous to editors of peer-reviewed journals and have the ability to upload data to Neotoma and correct data in Neotoma. Data Stewards must complete a training course, offered as an on-request webinar or at scientific conferences. People interested in becoming a Data Steward should contact Neotoma (neotoma-contact@googlegroups.com).



www.neotomadb.org/

Research Projects by AMQUA Members

NorthGreen2017

A marine research expedition off NE Greenland

By Marit-Solveig Seidenkrantz, Centre for Past Climate Studies, Arctic Research Centre, and Climate, Department of Geoscience, Aarhus University, Denmark
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From September 11 – October 1, 2017, the Danish research vessel ‘*Dana*’ (Fig. 1) served as a platform for a Danish-Canadian-Greenlandic-Italian-Norwegian multi-disciplinary research expedition off northeast Greenland. The expedition combined research in oceanography/hydrography, bioscience, and geoscience. In total, 20 scientists and students from the participating countries partook in the cruise, in addition to 18 crew members.



Figure 1. *R/V Dana in Young Sound, NE Greenland. R/V Dana belongs to the National Institute of Aquatic Resources (DTU-Aqua), Denmark. The ship is 78.43 m long, 14.7 m wide and has a brute tonnage of 2545 GT and accommodates 38 crew and scientists. Photo: Claus Persson, Captain of Dana.*

The NE Greenland shelf is a key region for studying past and present sea-ice variability, glacier melt-off, and Arctic Ocean-North Atlantic water exchange as well as the impact on environment and biota. Never-

theless, this region has hitherto been very little explored due to its remote location and the normally heavy sea-ice conditions.

The aim of the expedition was to study past (last Glacial to Holocene) and current changes in ocean circulation including Arctic-North Atlantic water exchange, sea-ice extent, sediment transport, and freshwater discharge from the Greenland ice cap as well as the impact on biota, pelagic/benthic ecosystems, and microbial processes.

The scientific party of the NorthGreen2017 expedition embarked in Longyearbyen, Svalbard, Norway and disembarked in Hirtshals, Denmark (home port of *RV Dana*). The total track of the expedition (Fig. 2) covered 5576 km, thereof 2475 km as research and 3101 km in transit from Longyearbyen to Station 1 and from NE Greenland (St. 29) to Hirtshals. Due to exceptionally low sea-ice conditions off NE Greenland during the time of the cruise, it was possible to reach as far north as 80°N. Thus, the expedition spent the first days between 80 and 79 °N, after which the expedition gradually moved southwards, finally reaching the Young Sound region. The selection of station sites was based on the known bathymetry (Fig. 2) to increase the chances of finding thick Holocene and Last Glacial sediment packages in depressions. Sub-bottom surveys using an Innomar® seismic profiler were used to identify the best possible coring sites within the chosen target areas.

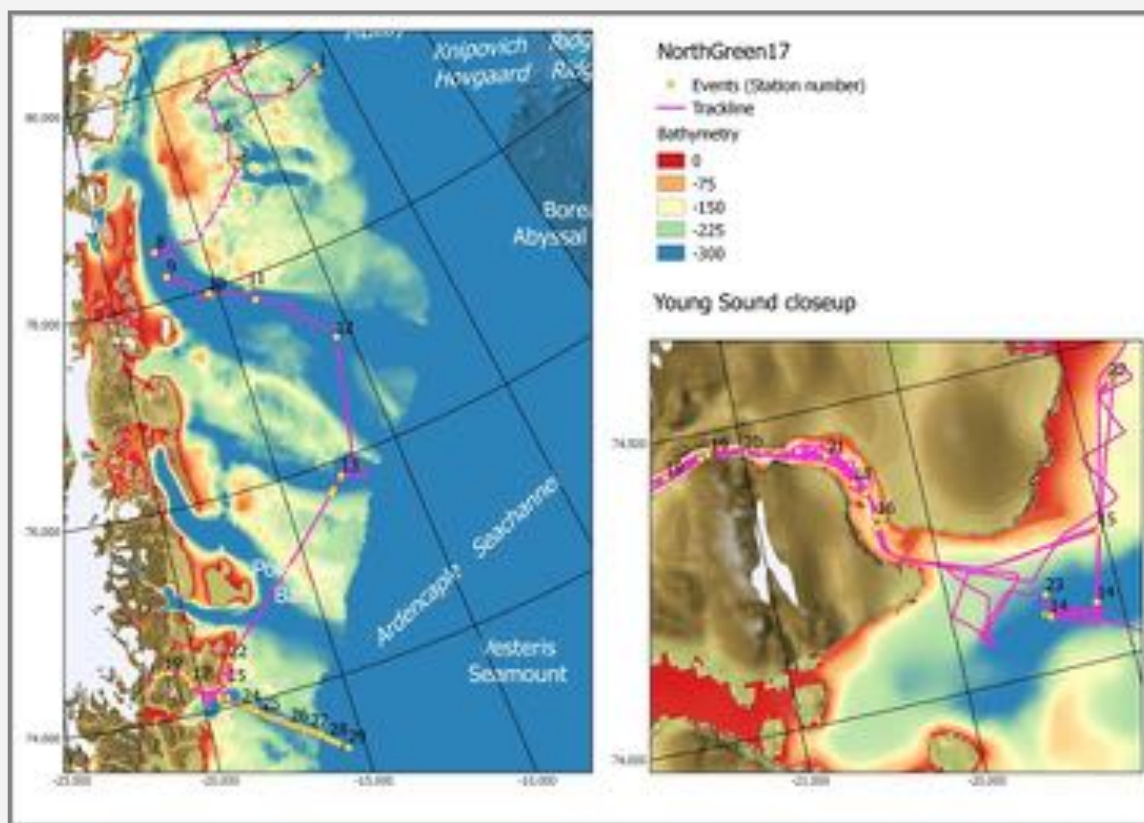


Figure 2. Cruise track, excluding transits to/from port. The purple line shows the transits between stations, during which Innomar® shallow seismics, ADCP, and echo-sound data were collected. Yellow dots show the location of stations for collection of CTD, water samples, plankton net, and/or sediments. The bathymetrical map is based on the General Bathymetric Chart of the Oceans (GEBCO; <https://www.gebco.net/>).

During the expedition a wide range of data and material was obtained for later analysis. A total of about 2200 km of surface-seismic (sub-bottom profiles) data were collected concurrently with acoustic Doppler current profiles (ADCP; measurement of water current velocities). Echo-sound data, Conductivity-Temperature-Depth profiles (CTD, measurements of temperature, salinity, fluorescence, and oxygen content through the water column), on-the-way-CTD and turbulence measurements, water samples, and phyto- and zooplankton net samples were obtained from 29 different stations (Fig. 1). Surface sediments and sediment cores were also recovered using Rumohr lot and gravity corers from 15 stations. Although some analyses and sample preparations were conducted on board the ship, the vast majority of sample analyses and data generation and processing will be performed on land at the participating institutions. The first analyses are currently underway and it is expected that the

expedition will provide new results for a number of coming years.

The NorthGreen2017 expedition provided a unique set of data and material for further study from the northeastern coastal regions of Greenland. Anyone who is interested in participating in post-cruise research, is welcome to contact the author (mss@geo.au.dk). If interested, the complete cruise report can be found here:

<http://arctic.au.dk/news-and-events/news/show/artikel/northgreen2017-a-marine-research-expedition-to-northern-greenland-onboard-rv-dana/>

or

<http://www.asp-net.org/content/northgreen2017-%E2%80%93-marine-research-expedition-ne-greenland-onboard-%E2%80%98rv-dana-september-11> .

We would like to thank the captain and crew of *RV Dana* as well as to the shipboard party for their hard work and help during the cruise. We are also thankful for the logistic support provided by many people. The cruise was funded by the Danish Centre for Marine Research (<http://www.danskhavforskning.net/>; grant to MSS) and the Natural Science and Engineering Research Council of Canada (grant to Anne de Vernal, GEOTOP-UQAM, Canada).



The scientific party onboard RV Dana at 80°N. Back row, from left to right: Jørgen Bendtsen, Lasse Nygaard Eriksen, Anders Møller Mathiasen, Søren Rysgaard, Hans Røy. Middle row, from left to right: Mads Schultz, David Johannes Wangner, Katrine Juul Andresen, Tove Nielsen, Tine Rasmussen, Marianne Ellegaard, Marit-Solveig Seidenkrantz, Sofia Ribeiro, Jarl Regner Andersen. Front row, from left to right: Christof Pearce, Caroline Scholze, Cynthia Le Duc, Camille Brice, Karen Gariboldi, Siri Ofstad. Photo: Christian Petersen; edits: Christof Pearce.