

SUNDAY, JUNE 5TH, 2016

17:30 – 19:30 Icebreaker and Registration (Ballroom pre-function space)

MONDAY, JUNE 6TH, 2016

09:00 – 09:20 Introductory Remarks and Welcome

SESSION PROXY DEVELOPMENT: PROBLEMS & OPPORTUNITIES

Session Chair: Donna Surge (morning) and Bryan Black (afternoon)

- 09:20 – 09:50 **Jochen Halfar (Keynote)**
Coralline algal paleoclimatology – A review of current status and challenges
- 09:50 – 10:10 **Zita Kelemen**
Reconstructing past variability in African hydrology using freshwater bivalve shell geochemistry: A multi-year calibration from the Oubangui and Niger Rivers
- 10:10 – 10:30 **Liza Roger**
Geochemical and crystallographic study of two species of coolwater bivalves (*Fulvia tenuicostata* and *Soletellina biradiata*) from southwestern Australia
- 10:30 – 10:50 *Refreshment Break*
- 10:50 – 11:10 **Madelyn Mette**
Using shell-based proxy records from northern Norway to evaluate high latitude impacts of the Atlantic Multidecadal Oscillation
- 11:10 – 11:30 **Merinda Nash**
Understanding cellular-scale controls on Mg uptake in crustose coralline algae
- 11:30 – 11:50 **Phoebe Chan**
Recent decline in skeletal density and calcification rates of subarctic crustose coralline algae
- 11:50 – 13:20 *Lunch (provided; Longfellow Room)*
- 13:20 – 13:40 **Michèle LaVigne**
Southeast Gulf of Mexico corals reveal annual barium cycles
- 13:40 – 14:00 **Stefania Milano**
Mechanical and structural response of *Cerastoderma edule* shell to acidification
- 14:00 – 14:20 **Bernd Schöne**
Bivalve Sr/Ca(shell) heterogeneity and microstructures – Are geochemical variations at the micrometer-scale masking potential environmental signals?
- 14:20 – 14:40 *Refreshment Break*

- 14:40 – 15:00 **Julien Thébault**
Great scallop shells as geochemical archives of phytoplankton dynamics in the bay of Brest (France)
- 15:00 – 15:20 **Kohki Sowa**
Spatial distribution of low molecular weight organic matter in micrometer skeletal structure of *Acropora* and *Porites* coral
- 15:20 – 15:40 **David Gillikin**
Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells
- 15:40 – 15:50 *Refreshment Break (10 minutes)*

SESSION SCLEROARCHAEOLOGY

Session Chair: Kristine DeLong

- 15:50 – 16:20 **Marcello Mannino (Keynote)**
The challenges of a high-resolution archaeology: Sclerochronological and isotopic approaches in perspective
- 16:20 – 16:40 **Meghan Burchell**
Isotope sclerochronology and hunter-gatherer seasonality: Archaeological landscapes from the Pacific and Atlantic coasts of Canada
- 16:40 – 17:00 **Ryan Harke**
Sclerochronology of a large predatory gastropod (*Busycon sinistrum*) to determine late prehistoric seasonality at St. Joseph Bay, Florida
- 17:00 – 17:10 *Refreshment Break (10 minutes)*
- 17:10 – 17:30 **Fred Andrus**
Archaeological applications of molluscan nitrogen isotope analyses
- 17:30 – 17:50 **Peter Müller**
Application of clumped isotopes in shell midden sclerochronology
- 17:50 – 18:10 **Donna Surge**
Determining season of harvest in shells of the European limpet (*Patella vulgata*) from modern and medieval collections

TUESDAY, JUNE 7TH, 2016

08:55 – 09:00 Announcements

SESSION GROWTH AND BIOENERGETICS

Session Chair: David Gillikin

09:00 – 09:30 **Brian Helmuth (Keynote)**
It's not all death and destruction: Thermal performance, energetics and the key role of monitoring growth responses to global climate change

09:30 – 09:50 **Ariadna Purroy**
The interaction of reproduction and shell growth in the bivalve *Callista chione*

09:50 – 10:10 **Irene Ballesta Artero**
Environmental factors driving the valve gape activity of the bivalve *Arctica islandica* in Northern Norway

10:10 – 10:30 **Michael Carroll**
Shell growth and environmental control of methane-associated thyasirid bivalves from Svalbard cold seeps

10:30 – 10:50 *Refreshment Break*

SESSION DEEP-TIME EVOLUTION AND ECOLOGY

Session Chair: Fred Andrus

10:50 – 11:20 **Seth Finnegan (Keynote)**
Paleobiology Needs Your Help

11:20 – 11:40 **Andrew Johnson**
Evidence, cause and consequence of exceptionally rapid growth amongst Pliocene scallops of the US eastern seaboard

11:40 – 12:00 **David Moss**
Latitudinal variation of lifespans and growth rates in modern marine bivalves

12:00 – 12:20 **Linda Ivany**
Growing a sea monster: Isotope ecology of a giant heteromorph ammonite

12:20 Boxed lunches provided

(12:45) Departure for “Southern Maine Quaternary Geology Field Trip” Excursion. Return by 18:00.

19:00 – 21:00 Poster Session (Eastland Grand Ballroom)

WEDNESDAY, JUNE 8TH, 2016

08:55 – 09:00 Announcements

SESSION CLIMATE AND OCEANS: PAST AND PRESENT

Session Chair: Al Wanamaker (morning) and Phoebe Chan (afternoon)

09:00 – 09:30 **Kim Cobb (Keynote)**

09:30 – 09:50 **Juan Estrella-Martínez**

Evaluating the strength and temperature variability of the North Atlantic current for the second half of the last millennium using an *Arctica islandica*-derived increment series

09:50 – 10:10

Melita Peharda

The bivalve *Glycymeris pilosa* as a multidecadal environmental archive for the Adriatic and Mediterranean Seas

10:10 – 10:30

Nina Whitney

An annually resolved, shell-derived oxygen isotope record since the late Little Ice Age from the Gulf of Maine: Implications for ocean circulation changes in the western North Atlantic

10:30 – 10:50

Refreshment Break

10:50 – 11:10

Fabian Bonitz

A 388-year *Arctica islandica* shell-based chronology from the Faroese Shelf: Implications for a better understanding of the natural climate variability of the Faroe Current

11:10 – 11:30

Stella Alexandroff

Reconstructing Holocene temporal hydrographic variability in Scottish Shelf Seas using dog cockle shells (*Glycymeris glycymeris*)

11:30 – 11:50

Branwen Williams

Impact of skeletal heterogeneity and treatment method on interpretation of environmental variability from the skeletons of deep-sea gorgonian corals

11:50 – 13:20

Lunch (on your own)

13:20 – 13:40

James Scourse

Annually-resolved North Atlantic marine climate over the last millennium: the ULTRA series

13:40 – 14:00

David Reynolds

An integrated spatial data-model approach to reconstructing and understanding Atlantic meridional overturning circulation

14:00 – 14:20

Eric Otto Walliser

Short-term climate variability in Central Europe during the Oligocene – A story told by glycymerids

14:20 – 14:40

Refreshment Break

- 14:40 – 15:00 **Maria Pyrina**
Test of North Atlantic sea-surface-temperature reconstructions with pseudo proxy experiments over the last millennium
- 15:00 – 15:20 **Kristine DeLong**
Salinity shifts in the southwest tropical Pacific from the Little Ice Age to the 20th century

**SESSION ENVIRONMENTAL MONITORING AND CONSERVATION
PALEOBIOLOGY**

Session Chair: Linda Ivany

- 15:20 – 15:50 **Greg Dietl (Keynote)**
Conservation paleobiology meets sclerochronology
- 15:50 – 16:10 **Paul Butler**
The regulatory context of the use of biochronologies for baseline environmental monitoring
- 16:10 – 16:20 *Refreshment Break (10 minutes)*
- 16:20 – 16:40 **Justin McNabb**
Isotope sclerochronology and season of annual growth formation in the marine bivalve, *Astarte borealis*, from Arctic and cold-temperate seas
- 16:40 – 17:00 **Stephen Durham**
Testing the effect of climate warming on oyster life history using geohistorical records
- 17:00 – 17:20 **Daan Vanhove**
Do oxygen isotope ratios in unionid shells reflect continental African hydroclimate variability?
- 18:45
Walk to Peaks Island ferry for 19:15 departure. Return ferry embarks at 21:45.
Ferry to Peaks Island takes 20 minutes.

THURSDAY, JUNE 9TH, 2016

08:55 – 09:00 Announcements

SESSION FISHERIES ECOLOGY AND MANAGEMENT

Session Chair: Meghan Burchell and David Goodwin

- 09:00 – 09:30 **John Morrongiello (Keynote)**
Otoliths: From individuals to assemblages in a changing world
- 09:30 – 09:50 **Lisa Kerr**
Reconstructing environmental histories of Atlantic cod in the Gulf of Maine
- 09:50 – 10:10 **Karin Limburg**
Losing track of time: Is hypoxia in part to blame for Baltic cod aging problems?
- 10:10 – 10:30 **Beth Matta**
Otolith biochronologies reveal latitudinal differences in growth of Bering Sea yellowfin sole *Limanda aspera*
- 10:30 – 10:50 *Refreshment Break*
- 10:50 – 11:10 **Peter van der Sleen**
Low-frequency variability in a centennial-length biochronology of Bering Sea Pacific ocean perch (*Sebastes alutus*)
- 11:10 – 11:30 **Bryan Black**
Crossdating and preservation of signal strength in growth increment chronologies
- 11:30 – 11:50 **Phil Hollyman**
Micro-scale chemical analysis of statoliths from the whelk *Buccinum undatum*: validation of a novel age determination method for fisheries management
- 11:50 – 12:10 **Pierre Poitevin**
A new method for age and growth rate determinations of the Atlantic surf clam (*Spisula solidissima*), based on internal growth lines in ligament cross-sections
- 12:10 – 14:00 Lunch Banquet, Student Awards, Future Meeting Planning**

POSTER PRESENTATIONS

Presenting authors are listed below in alphabetical order with abstract titles.

Jared Ballew

Development of a species-specific oxygen isotope transfer function for *Arctica islandica* shells: Insights from a temperature experiment

Christine Bassett

Clams and climate: Implications for reconstructing paleoseasonality in southern Alaska

Fabian Bonitz

Temperature reconstructions based on $\delta^{18}\text{O}$ measurements in bivalve shells from the Faroese Shelf

Shibajyoti Das

Diet of fossil and modern bivalves and gastropods revealed by carbon and nitrogen isotopes of shell-associated organic matter

Kristine DeLong

Save our Marine Annually Resolved Proxy Archives (MARPA)!

Amy Featherstone

Multiproxy reconstruction of seawater temperature in the bay of Brest using shells of dog cockles, *Glycymeris glycymeris*

Teresa Franco

Seasonal patterns in shells of *Concholepas concholepas* and its application at the archaeological site of Camarones 14 (Camarones River Valley, Chile)

Megan Freiburger

Evidence for growth rate nonlinearity in bamboo corals

Pedro Freitas

Upwelling seasonality in the Iberian upwelling system from shell $\delta^{13}\text{C}$ records in the bivalve *Glycymeris glycymeris*

Thomas Geeza

Trace and major element ratios in *Elliptio dilatatus* shells as indicators of surface water quality in Western Pennsylvania

David Gillikin

Paleoclimate reconstruction from oxygen isotopes in a coral skeleton from East Africa

Lauren Graniero

Detecting seasonal variations in nitrogen and carbon sources to an impacted river and its estuary using bivalve shell $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ values

Steffen Hetzinger

Reproducibility of *Clathromorphum compactum* coralline algal Mg/Ca ratios and calibration to high-resolution sea surface temperature data

Alaina Hickey

Paleoecological implications of nitrogen and carbon isotopic data from organic material in Devonian rugose corals

Emily Judd

Seasonal variation in temperature and precipitation during Eocene cooling inferred from Antarctic bivalves

Daniel Killam

Geochemical evidence for the presence of photosymbiosis in Early Jurassic lithiotid bivalve

Natasha Leclerc

Shellfishing through the Holocene in British Columbia: Insights from oxygen isotope sclerochronology

Vilde Melvik

Marine climate variability of the Irminger Current based on growth increments in the bivalve *Arctica islandica*: A molluscan sclerochronological approach

Alexandra Németh

Sclerochronological comparison of two dog cockle (*Glycymeris glycymeris L.*) populations from the southeastern North Atlantic

Richard Patton

The impacts of ocean acidification and increasing temperature on shell properties of intertidal bivalve molluscs

Michael Retelle

Mid and Late Holocene marine paleoenvironmental reconstructions from Ingøya and Rolvsøya, northern Finnmark, Norway

Alejandro Román González

Advances in developing Antarctic sclerochronological archives from the marine bivalve *Yoldia eightsi*

Bernd Schöne

The Mediterranean Sea during the Pleistocene - Bivalve shells and their potential to reconstruct decadal and seasonal climate signals of the past

Anna Sparrow

Tides & traditions: Insights into indigenous hunter-fisher-gatherer shellfishing with sclerochronology

Larry Taylor

Reconstruction of humpback whale migration via isotopic analysis of coronulid barnacle shells

Julien Thébault

Growth, longevity and stable isotope composition of European date mussels *Lithophaga lithophaga* from eastern Adriatic

Tamara Trofimova

Environmental variability revealed in sclerochronological records of *Arctica islandica* from the northern North Sea

Alan Wanamaker

Highly dynamic marine radiocarbon reservoir effect in the Gulf of Maine since AD 1685

Jacob Warner

Assessing seasonal variability and archaeological season of harvest in North-Central coastal Peru using the short-lived bivalves *Donax obesulus* and *Mesodesma donacium*

Siobhan Williams

Comparing climate signals obtained from encrusting and free-living southwest Greenland coralline algae

Rob Witbaard

Seasonal timing of shell and tissue growth in *Arctica islandica*

Christiane Yeman

Continuous ^{14}C analysis of marine carbonates by laser ablation coupled with AMS

Liqiang Zhao

Effects of calcium availability on shell growth rate and element composition of *Corbicula fluminea* (*Bivalvia*)