

HiRes2017
High-Resolution Proxies of Paleoclimate
Madison, Wisconsin; June 18-21, 2017

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UW-Madison



Sunday, June 18, 2017

- 4:00-6:00 PM **Open House** at WiscSIMS Lab (Weeks Hall, 1215 W. Dayton St.)
Registration, upload talks and set-up posters
- 6:00-9:00 PM **Barbeque** in Weeks Hall Courtyard & WiscSIMS Open House
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Monday, June 19 Room A140, Weeks Hall

8:00-9:00 AM Light Breakfast, registration, upload talks and set-up posters

Morning Session (Chair: Ian Orland)

- 9:00-9:20 John Valley Welcome and Introduction
- 9:20-10:20 Noriko Kita (Tutorial): "SIMS Basics"
- 10:20-10:40 Ian Orland & Kouki Kitajima WiscSIMS-Live: Part 1
- 10:40-11:00 Break
- 11:00-12:00 John Valley (Tutorial): "In Situ Isotope Geochemistry by SIMS: Accuracy vs. Precision"

Lunch (12:00PM-1:30PM) Union South, 1308 West Dayton St. - room TBD

Afternoon Session (Chair: John Valley)

- 1:30-1:50 PM Shaun Marcott (Keynote) "Heinrich Events, oxygen isotopes, and foraminifera: What can SIMS do for you?"
- 1:50-2:20 Zhengyu Liu (Keynote) "Understanding the temporal slope of the temperature-water isotope relation: The slope equation"
- 2:20-2:50 Kathleen Johnson (Keynote) "Reconstructing seasonal to decadal scale climate variability from speleothems: Potential, strategies, and challenges"
- 2:50-3:10 Ian Orland "Measuring seasonal monsoon signals in Chinese speleothems"
- 3:10-4:00 Lightning Poster Talks (Optional), 3 minutes/poster.
- 4:00-6:00 **Posters** -- Beverages and Refreshments will be provided.

Dinner -- You are on your own (See restaurant suggestions on page 51)

Tuesday, June 20 Room A140, Weeks Hall

8:30-9:00 AM Light Breakfast

Morning Session (Chair: Howard Spero)

- 9:00-9:30 Thure Cerling (Keynote) "Stable Isotope Answers to Problems with Biological and Terrestrial Records"
- 9:30-10:00 Melanie Beasley (Keynote) "Environmental variability in hominin evolution: Moving from geological to biological timescales with SIMS"
- 10:00-10:20 Noreen Tuross "The Need for HiRes in Vertebrate Calcified Tissue Oxygen Isotope Measurements"
- 10:20-10:40 Daniel Green "Mineralization modeling and Bayesian inference reconstruct transient storms from tooth $\delta^{18}\text{O}$ values"

- 10:40-11:00 Break
- 11:00-11:30 **Wolfgang Müller (Keynote)** "The Role of Laser-Ablation Plasma Mass Spectrometry (LA-ICPMS) in Palaeoclimate Research: Principles and Applications"
- 11:30-11:50 **Robert Sherrell** "High-resolution analysis of deep-sea coral skeletons for trace element paleo-proxies of ocean conditions"
- 11:50-12:10 **Xin-Yuan Zheng** "In situ Fe isotope analysis by femtosecond laser ablation: fundamentals and applications"

Group photo & Lunch 12:10-2:00PM Group Photo will be taken in Weeks Hall courtyard immediately following the morning session. **Lunch**, Union South, 1308 West Dayton St. - room TBD

Afternoon Session (Chair: Reinhard Kozdon)

- 2:00-2:30 **Jennifer Fehrenbacher (Keynote)** "Light cycle triggers Mg-banding in Neogloboquadrina dutertrei: implications for chamber formation and biomineralization in planktic foraminifers"
- 2:30-3:00 **Howard Spero (Invited)** " Carbon and nitrogen exchange between a photosynthetic symbiotic dinoflagellate and its planktonic foraminifera host"
- 3:00-3:20 **Helena Filipsson** "Opening the proxy black box: unravelling biomineralization processes using synchrotron X-ray spectroscopy and plasma analytical methods"
- 3:20-3:40 Break
- 3:40-4:00 **Alan Wanamaker** "Assessing unexpected isotopic variability in aragonitic biocarbonates through sample replication"
- 4:00-4:30 **Thomas Helser (Keynote)** "Trace elements, isotopes and growth increments: Paleoclimate and fish otoliths"
- 4:30-4:50 **Evan Cameron** "Hadean paleoclimate: OH/O ratios as a proxy for water & alteration in zircon"

Banquet (Alumni Lounge at the Pyle Center)

6:00 PM Cocktail Hour 7:00-9:00 PM Dinner

Wednesday, June 21 Room A140, Weeks Hall

8:30-9:00 AM Light Breakfast

Morning Session (Chair: Shaun Marcott)

- 9:00-9:40 **Ian Orland (Tutorial)** "Developments and challenges in ion microprobe studies of speleothems and biocarbonates"
- 9:40-10:10 **Reinhard Kozdon (Keynote)** "In situ analysis of foraminiferal shells by SIMS, LA-ICPMS and EPMA: What have we learned in the past decade? A résumé and outlook"
- 10:10-10:30 **Caitlin Livsey** "Reconstructing Holocene Arctic Ocean paleoceanography using SIMS $\delta^{18}\text{O}$ and LA-ICP-MS elemental data from single Neogloboquadrina pachyderma shells"
- 10:30-10:50 Break
- 10:50-11:10 **Jody Wycech** "Reconstructing the Oxygen Isotope Composition of the Surface Ocean Using Paired In Situ Micro-Analytical Techniques on Individual Shells of the Planktic Foraminifer *Trilobatus sacculifer*"
- 11:10-11:30 **Ben Linzmeier & Kouki Kitajima** WiscSIMS-Live: Part 2
- 11:30-12:00 **Ben Linzmeier (Tutorial)** "Integrating in situ geochemical data with QGIS"

Lunch 12:00-1:30 PM Union South, 1308 West Dayton St. - room TBD



POSTERS

Cameron Batchelor "High-precision U-Th chronology of calcite deposition at Cave of the Mounds, Wisconsin and its implications to permafrost and climate"

Kevin Burke "How novel are 21st century climates? A global assessment of future climates and their analogs back through the Eocene"

Huan Cui "Assessing the veracity of deep-time geological records by SIMS: A critical update on paleoclimatic conditions in the wake of the Sturtian Snowball-Earth glaciation"

Adam Denny " $\delta^{34}\text{S}$ Study of Multiple Generations of Sulfide in the Bakken System by SIMS"

Heather Jones "Extensive Braarudosphaera blooms in the Cretaceous/Paleogene impact crater: why are they there and what do they mean?"

Stanley Ko "Improving proxy calibrations in *Desmophyllum dianthus*: assessment of elemental abundances and distributions using LA-ICPMS"

Nick Levitt "Application of clumped isotope thermometry to Archean carbonates: Thermal histories and potential for biomarker preservation"

Ben Linzmeier "Using in situ geochemistry to investigate the depth habitat of ammonites"

Rosie Oakes "Using high-resolution imaging techniques to assess the impact of ocean acidification on the condition of pteropod shells"

Susana Salazar Jaramillo "Paleoclimatic Interpretation Using Geochemical Proxies In The Middle Miocene Paleosols Of The Tatacoa Desert, Colombia"

Maciej Śliwiński "SIMS bias on isotope ratios in siderite-magnesite: $\delta^{18}\text{O}$ & $\delta^{13}\text{C}$ matrix effects"

Chunhui Zhou "Growth zoning and trace element distribution in freshwater cultured pearls -- and potential study on stable isotope ratios"

Oral Presentations:

We have both PC and Mac desktop computers available for presentations with the latest versions of Powerpoint. Please upload your presentation file using USB on Sunday during the Open House or in the morning prior to your session. If you would like to use your laptop for the presentation, please test your computer for connectivity prior to your session.

Poster Presentation:

Poster boards will be located in the hallway outside the meeting room. Please hang your poster on Sunday afternoon or Monday with the provided pins. Posters should be taken down after lunch on Wednesday.

Wireless Internet Access (SSID=UWNet):

If you stay at the Wisconsin Union Hotel or The Lowell Center Hotel, they will provide you with a guest NetID that will allow you to logon to UWNet, which you can use inside Weeks Hall (Department of Geoscience) and other areas across campus.

Without a guest NetID, you can also register to use UWNet as a guest for the day. You may need to login every time.

Eduroam is supported on the UW-Madison campus, including Weeks Hall.

We can also create temporary ID numbers, if you are interested. Please see Kouki Kitajima or Ian Orland for questions or help about logging in.

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