

NATASHA SEKHON

PhD Candidate

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Jackson School of Geosciences ◊ University of Texas at Austin

RESEARCH INTERESTS

Paleoclimatology, stable isotope geochemistry, speleothem sciences, climate dynamics, uncertainty quantification, statistical analyses

EDUCATION

PhD in Geological Sciences, <i>University of Texas at Austin</i>	expected May 2020
M.S. in Geological Sciences, <i>University of Texas at Austin</i>	August 2016
B.S. in Earth System Sciences, <i>University of California, Irvine</i>	June 2014
Minor in Comparative Literature	

HONORS AND AWARDS

DeFord Field Scholarship	2017
Jackson School of Geosciences Match Grant	2017
Graduate Research Grant for Cave and Karst Research	2017
Geological Society of America Graduate Student Research Grant	2017
ANSTO Grant for the 2nd Summer School in Speleothem Sciences , Oxford	2015
Muehlberger Field Scholarship	2015
Outstanding Senior in Earth and Environmental Sciences	2014
Honors in Earth System Sciences	2014
Chancellor's Award for Excellence in Research	2014
Phi Beta Kappa Honor Society	2014
Maria Rebecca and Maureen Bellettini Award	2012-2013
Dean's List: Winter 2012, Spring 2012, Spring 2013, Fall 2013, Winter 2014, Spring 2014	

PUBLICATIONS

1. **Sekhon, N.**, T. Beach, S. Krause, S. Eshleman. *Maya Lowland Modern Climatology: A Review and an Exercise*. Journal of Geography (Submitted).
2. **Sekhon, N.**, T. M. Quinn, J. W. Partin, R.L. Edwards, H. Cheng, and P. Zhang. *Investigating multi-decadal rainfall variability in the South Pacific Convergence Zone using the geochemistry of stalagmites from the Solomon Islands*. Climate of the Past (In Prep.)

CONFERENCE ACTIVITIES

1. **Sekhon, N.**, J. L. Banner, N.R. Miller, P.E. Carlson, D.O. Breecker (2017). *Seasonally-resolved trace element concentrations in stalagmites from a shallow cave in New Mexico*. AGU 2017 Fall Meeting. (Poster)
2. Breecker, D. and **N. Sekhon** (2017). *Global Stacking of Speleothem Carbon and Oxygen Isotope Records*. Karst Record Conference. (Talk)
3. **Sekhon, N.**, J. L. Banner, D. Breecker, P.E. Carlson (2017). *Near entrance Speleothems: Archives of seasonality?* GSA South-Central Conference. (Talk)
4. **Sekhon, N.**, T. M. Quinn, J. W. Partin, R.L. Edwards, Hai Cheng, Pu Zhang(2016). *Multidecadal rainfall variability in the South Pacific Convergence Zone using the geochemistry of stalagmites from*

the Solomon Islands. Austin Geological Society Symposium. (Invited Poster)

5. **Sekhon, N.**, T. M. Quinn, J. W. Partin, R.L. Edwards, Hai Cheng(2015). *Investigating multi-decadal rainfall variability in the South Pacific Convergence Zone using the geochemistry of stalagmites from the Solomon Islands*. AGU 2015 Fall Meeting. (Poster)

6. **Sekhon, N.**, T. M. Quinn, J. W. Partin, R.L. Edwards, Hai Cheng(2015). *Investigating recent SPCZ rainfall variability using a Stalagmite from the Solomon Islands: Initial Report*. 2nd Summer School in Speleothem Sciences. (Poster)

7. **Sekhon, N.**, T. M. Quinn, J. W. Partin(2015). *Proposed work to investigate recent SPCZ rainfall changes using cave deposits from the South Pacific*. 4th Annual Jackson School Research Symposium. (Poster)

8. **Sekhon, N.**, K.R. Johnson, H. Yang (2014). *Holocene tropical hydroclimate reconstruction from speleothem oxygen isotopes*. Undergraduate Research Opportunities Program (UROP) Symposium, UC Irvine. (Poster)

9. Yang, H., K.R. Johnson, M. Griffiths, **N. Sekhon**, A. LeGrande, K. Yoshemura, V Ersek, H. Gideon (2014). *Southeast Asian Monsoon Variability during the Holocene Based on Speleothems from Laos*. Goldschmidt Conference. (Poster)

WORK EXPERIENCE

Teaching Experience

August 2016 - Present

- **Spring 2017** Teaching Assistant GEO302C - Climate: Past, Present, Future.
- **Fall 2016** Teaching Assistant UGS303 - Sustaining a Planet.

Laboratory Experience

October 2010 - Present

- **January 2017 - Present**. Analyzing and running my dissertation stalagmite samples using a Thermo Scientific MAT 253/252 IRMS (for Stable Isotopes) attached to a Gasbench-II (w PAL/ConFlo IV) in the Stable Isotopes Lab managed by Dr Dan Breecker and Dr Jaime Barnes. Analyzing and preparing my dissertation samples using a LA-ICP-MS (for Trace Elements) in the Quadrupole ICP-MS Lab managed by Dr Nate Miller.
- **August 2014 - June 2016**. Managed the Austin Laboratory for Paleoclimate Studies under Dr. Terry Quinn. Duties included: drilling stalagmite samples for stalagmite samples for stable isotope analysis using a microdrill. Running, organizing, and maintaining a record of customer samples for low-temperature carbonate isotope analysis using IRMS: MAT 253, Delta V Plus attached to Kiel Carbonate Devices.
- **May - August 2015**. Spent three months in the Trace Metal Isotope Geochemistry Lab working with Dr Larry Edwards and Dr Hai Cheng. Drilled, conducted column chemistry and ran samples for U-Th dating of stalagmites for Masters thesis. U-Th samples were analyzed using a Thermo Neptune Plus MC-ICP-MS attached to an auto sampler.
- **October 2012 - June 2014**. Drilled and ran stalagmites for stable isotope analysis using microdrill, Merchantek micromill for senior honors thesis at the UC Irvine for Isotope Tracers in Earth Sciences (CITIES) under Dr. Kathleen Johnson. Helped graduate students and lab technician weekly in the lab with the upkeep of CITIES by washing vials and prepping samples for IRMS sample runs.
- **February - August 2013**. Worked in the Wolfson Laboratory Stable Isotope Mass Spectrometry Lab drilling annually laminated Porites corals collected from Espanola in the Galapagos Islands using a push hand drill. The project was part of bigger research proposal that Dr. Alexander Tudhope and colleagues are working on regarding ENSO variability in the Pacific. Weekly meetings with research associate, Colin Chilcott to prep samples for IRMS attached to a Kiel Carbonate III runs and post-running cleaning methods.
- **October 2010 - June 2011**. Under Dr. Jin-Yi Yu, i worked on basic commands of the CESM1.0 model to study ENSO variability in the Pacific.

PROFESSIONAL AFFILIATIONS

American Geophysical Union
Geological Society of America
National Speleothem Society

FIELD EXPERIENCE

PI, bi-monthly cave monitoring trips in New Mexico	July 2017 - Present
Cave monitoring trips in Central Texas	July 2016 - Present
Belize Summer Fieldwork for Environmental Changes in Maya	May 2016
Sediment trap redeployment and maintenance, Gulf of Mexico	November 2015
Peakes District, U.K. field trip to investigate local caves and geology	August 2015
Bi-monthly cave monitoring trip in Sequoia National Park, CA	January April 2014
Inchnadamph Field Course NW Scotland, Scotland	May June 2013

SERVICE AND OUTREACH

Speleothem Isotopes Synthesis and Analysis (SISAL) Contributing Member	2018
Skype A Scientist Participating Member	October 2017 - Present
Karst Records Conference, Austin On-site Volunteer	April - May 2017
EAHCP NAS Report 2, Note taker under Dr. Suzanne Schwartz	May - June 2017
Summer School in Speleothem Sciences, Spain Organizing Committee	August 2015 - August 2017
National Geographic Your Shot Contributing Member	January 2015 - Present

TECHNICAL SKILLS

Software & Programming	ArcGIS, Matlab, LaTeX
Statistical Methods	Time series analysis, Regression analysis, Principal Component Analysis,
Statistical Methods	Hypothesis testing & confidence intervals
Office & Adobe Packages	PowerPoint, Excel, Word, Photoshop, Illustrator
Writing Work	Entertainment and Features Writer for New U (2011-2013) & The Student (2013),
Writing Work	Editorial Board Member for UCI Undergraduate Research Journal (2012-2014) and
Writing Work	Science Y'all (2017 - Present), Contributing Member for EnviroBites (2018)
Languages	English (Native), Hindi (Native), Punjabi (Native), French (Intermediate),
Languages	Spanish (Intermediate), Scottish Gaelic (Beginner)