

Judson W. Partin

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EDUCATION

Ph.D. in Earth and Atmospheric Sciences, Georgia Institute of Technology, May 2008

M.A. in Physical Chemistry, University of Southern California, August 2000

B.S. *magna cum laude* in Chemistry, The Citadel, May 1997

PROFESSIONAL EXPERIENCE

Research Associate, University of Texas – Austin, 2014 – present

Research Scientist Associate V, University of Texas – Austin, 2011 – 2014

Post-doctoral Researcher, University of Texas – Austin, 2008 – 2011

Teaching and Research Assistant, Georgia Institute of Technology, 2002 – 2007

Optical Engineer, Oplink Communications, San Jose, CA, 2000 – 2001

Teaching and Research Assistant, University of Southern California, 1997-2000

RESEARCH INTERESTS

Understanding externally forced and internally driven climate changes using different paleoclimate archives to help evaluate current climate trends, and ultimately the climate models that are used to project future changes. Techniques include using speleothems, corals, and marine sediment core proxies to study tropical climate processes, quantifying uncertainty in paleoclimate proxies, and using climate model-proxy data comparisons to identify mechanisms of climate changes.

RESEARCH GRANTS

PI - Partin, J.W. "Western Pacific Warm Pool Hydroclimate during the Last Glacial Maximum and the Deglaciation" Award Number 1404003. Past Perspectives on Climate Change (P2C2) Competition in the Paleoclimate Program of the US National Science Foundation. Jul 2014 – Jun 2017. Amount: \$530,005.

PI - Partin, J.W. "Collaborative Research: Holocene Hydrologic Variability across the Western Pacific Warm Pool" Award Number 1003700. Paleoclimate Program of the US National Science Foundation. Jan 2011 – Dec 2013. Amount: \$504,472.

TEACHING EXPERIENCE

Course Instructor: Marine Geology at the University of Texas at Austin (2 semesters, Fall 2014, 2015)

Teaching Assistant: Honors General Chemistry at the University of Southern California (3 semesters), How to Build a Habitable Planet (4 semesters), and Introduction to Geology (1 semester) at the Georgia Institute of Technology

FIELD EXPERIENCE

Led caving expedition to Karnataka, India February 2015

Led caving expedition to Vanuatu, September 2012

Led caving expedition to Solomon Islands, August 2012

Led caving expedition to Samar, Philippines, July 2012

Participated in expedition to drill corals in Vanuatu, August 2011

Led caving expedition to Solomon Islands, August 2010

Led caving expedition to Vanuatu, July 2010

Led caving expedition to Mangilao, Guam, March 2010

Participated in caving expedition to Gunung Mulu National Park, Malaysia, Feb 2010

Led caving expedition to Mangilao, Guam, June 2009

Led caving expedition to Mangilao, Guam, Jan 2009

Participated in caving expedition to Palawan, Philippines, Dec 2008

Participated in caving expedition to Mangilao, Guam, Aug 2008

Participated in caving expedition to Gunung Mulu National Park, Malaysia, Aug 2008

Led caving expedition to Gunung Mulu National Park, Malaysia, June 2006

Participated in caving expedition to Gunung Mulu National Park, Malaysia, March 2005

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union

Geological Society of America

MENTORING of STUDENTS

Graduate

Dissertation Committee Member of Kaustubh Thirumulai at the University of Texas at Austin, expected graduation date Fall 2015

Undergraduates

April Trevino, Undergraduate Research at the University of Texas at Austin, 2015
Timothy Williams, Undergraduate Research at the University of Texas at Austin, 2015
Keith Young, Undergraduate Research at the University of Texas at Austin, 2015
Katherine Lindzey, Research Experience for Undergraduates Program at the University of Texas at Austin for summer 2012
Diana Zamora, Louis Stokes Minority scholarship program to study at the University of Texas at Austin for summer 2009
Selene Castillo, Research Experience for Undergraduates Program at the University of Texas at Austin for summer 2009

OUTREACH

Interview with MSNBC about abrupt climate change, 9 Sept. 2015.
Interview with Washington Post about abrupt climate change, 7 Sept. 2015.
Radio Interview by KUT, NPR station – Austin, TX, about abrupt climate change, 2 Sept. 2015.
Online Interview with the Generation Anthropocene Podcast of The Smithsonian (<http://www.smithsonianmag.com>) about abrupt climate change, 2 Sept. 2015.
Radio Interview on KVRX (<http://www.kvr.org>), 'They Blinded Me With Science' Program, 30 June 2014.
Served as an instructor for the GEOFORCE Program of the University of Texas at Austin for the trip to Florida to study coastal processes. 6 June – 11 June 2014.
Served as an instructor for the GEOFORCE Program of the University of Texas at Austin for the trip to Port Aransas, TX to study coastal processes. 31 July – 5 Aug 2013.

HONORS

Best oral presentation award at Georgia Tech EAS graduate student symposium, 2007
Georgia Tech EAS Chair Service Award, 2005
Presidential Fellowship at Georgia Tech, 2002
Harold and Lillian Moulton Chemistry Fellowship for research in chemistry at USC, 1999
Excellence in Teaching at USC (Awarded to one Teaching Assistant per discipline per semester), 1998
ACS Section Outstanding Achievement Award in Organic Chemistry, 1997
Phi Kappa Phi Honor Society, 1996
Citadel Scholar Full Scholarship, 1993 - 1997

PUBLICATIONS

Partin, J. W., T. M. Quinn, C.-C. Shen, M. B. Cardenas, Y. Okumura, F. P. Sirigan, J. L. Banner, K. Lin, F. W. Taylor (2015), Gradual onset and recovery of the Younger Dryas abrupt climate event in the tropics. *Nature Communications*, **6**(8061), doi: 10.1038/ncomms9061.

Partin, J. W. (2015), News and Views: Aerosols and Rainfall. *Nature Geoscience*, **8**(3), 174-175.

Moerman, J. W.*, K. M. Cobb, **J. W. Partin**, A. N. Meckler, S. A. Carolin, J. F. Adkins, et al. (2014). Transformation of ENSO-related rainwater to dripwater $\delta^{18}\text{O}$ variability by vadose water mixing. *Geophysical Research Letters*, **41**(22), 7907–7915.

Maupin, C. R.*, **J. W. Partin**, C.-C. Shen, T. M. Quinn, K. Lin, F. W. Taylor, J. L. Banner, K. Thirumalai, D. J. Sinclair (2014), Persistent decadal-scale rainfall variability in the tropical South Pacific Convergence Zone through the past six centuries. *Climate of the Past*. **10**(4), 1319-1332.

Shen, C-C, M. Tan, K. Lin, W. Duan, X. Jiang, **J. W. Partin**, R. L. Edwards, H. Cheng (2013) Testing the annual nature of speleothem banding. *Scientific Reports*. **3**(2633), doi:10.1038/srep02633.

Partin, J. W., T. M. Quinn, C.-C. Shen, F. W. Taylor, C. R. Maupin, K. Lin, C. S. Jackson, J. Emile-Geay, J.L. Banner, D.J. Sinclair, C.-A. Huh (2013). Multidecadal rainfall variability in South Pacific Convergence Zone as revealed by stalagmite geochemistry. *Geology*. **41**(11), 1143-1146.

Partin, J. W., K. M. Cobb, J. F. Adkins, A. A. Tuen, B. Clark (2013). Trace metal and carbon isotopic variations in cave dripwater and stalagmite geochemistry from northern Borneo. *Geochemistry Geophysics Geosystems*. **13**(3), 3567-3583.

Thirumalai, K. R.*†, **J. W. Partin**, C. S. Jackson, T. M. Quinn (2013), Statistical constraints on El Niño Southern Oscillation reconstructions using individual foraminiferal analyses: an uncertainty quantification experiment. *Paleoceanography*. **28**(3), 401-412.

Gorman, M. K.*, T. M. Quinn, F. W. Taylor, **J. W. Partin**, G. Cabioch, J. A. Austin Jr., B. Pelletier, V. Ballu, C. Maes, and S. Saustrop, (2012), A coral-based reconstruction of sea surface salinity at Sabine Bank, Vanuatu from 1842 to 2007 CE. *Paleoceanography*, **27**(3), PA3226.

Partin, J. W., J. W. Jenson, J. L. Banner, T. M. Quinn, F. W. Taylor, D. Sinclair, B. Hardt, M. A. Lander, T. Bell, B. Miklavic, J. M. U. Jocson, and D. Taborosi (2012).

Relationship between modern rainfall variability, cave dripwater, and stalagmite geochemistry in Guam, USA. *Geochemistry Geophysics Geosystems*. **13**(3), Q03013.

Sinclair, D. J., J. L. Banner, F. W. Taylor, **J. Partin**, J. Jenson, J. Mylroie, E. Goddard, T. Quinn, J. Jocson and B. Miklavic (2012). Magnesium and strontium systematics in tropical speleothems from the Western Pacific. *Chemical Geology*. **294-295**, 1-17.

Lu, J., **J. W. Partin**, S. D. Hovorka, C. Wong (2009), Potential risks to freshwater resources as a result of leakage from CO₂ geological storage: a batch-reaction experiment. *Environmental Earth Sciences*. **60**(2), 335-348.

Smyth, R. C., S. D. Hovorka, J. Lu, K. D. Romanak, **J. W. Partin**, C. Wong, and C. Yang (2009), Assessing risk to fresh water resources from long term CO₂ injection – laboratory and field studies. *Energy Procedia*. **1**(1), 1957-1964.

Partin, J. W., K. M. Cobb, J. L. Banner (2008) Climate variability recorded in tropical and sub-tropical speleothems. In: Fleitmann, D., Spotl, C., Newman, L., Kiefer, T. Eds., *PAGES News*. **16**(3), PAGES International Project Office, Bern, Switzerland.

Partin, J. W., K. M. Cobb, J. F. Adkins, B. Clark, D. P. Fernandez (2007). Millennial-scale trends in Warm Pool hydrology since the Last Glacial Maximum. *Nature* **449**(7161), 452-455.

Cobb, K. M., B. Clark, **J. W. Partin**, J. F. Adkins (2007). Regional-scale climatic influences on rainwater and cave dripwater oxygen isotopes in northern Borneo. *Earth and Planetary Science Letters* **263**(3-4): 207-220.

K. Liu, A. Kolessov, **J. W. Partin**, I. Bezel and C. Wittig, (1999). Probing the Cl-HCl complex via bond-specific photodissociation of (HCl)₂, *Chemical Physics Letters* **299**(5) pp. 374-380

* indicates student first-author

† indicates a student that I am serving on their PhD committee

CONFERENCES AND EXTENDED ABSTRACTS

Partin, J. W., B. L. Konecky, and Iso2k Project Members (2015), "Iso2k: A community-driven effort to develop a global database of paleo-water isotopes covering the past two millennia" Abstract presented at 2015, Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.

Partin, J. W., Y. Okumura, T. M. Quinn, J. Emile-Geay, K. Thirumalai (2014), "Varied Spatial Response of the SPCZ on Multi-decadal Timescales over the past 500 Years" Abstract A11B-3023 presented at 2014, Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.

Partin, J. W., T. M. Quinn, C.-C. Shen, M. B. Cardenas, F. P. Sirigan, J. L. Banner, F. W. Taylor (2013), "Insolation and Abrupt Climate Change Effects on the Western Pacific Maritime Monsoon" Abstract PP31C-2044 presented at 2013, Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Partin, J. W., T. M. Quinn, C.-C. Shen, M. B. Cardenas, Okumura, Y., F.P. Sirigan, J. L. Banner, K. Lin, F. W. Taylor (2013), "Insolation and Abrupt Climate Change Effects on the Western Pacific Maritime Monsoon" Abstract P-471 presented at the 11th International Conference on Paleoclimatology, Sitges, Spain, 1-6 Sep. 2013.

Partin, J. W., T. M. Quinn, C.-C. Shen, M. B. Cardenas, F.P. Sirigan, J. L. Banner, F. W. Taylor (2012), "Insolation and Abrupt Climate Change Effects on the Western Pacific Maritime Monsoon" Abstract PP31C-2044 presented at 2012, Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

Partin, J. W., T. M. Quinn, C.-C. Shen, F. W. Taylor, J. L. Banner, C.R. Maupin, K., Lin, D. Sinclair, C. Huh, (2011), "Multi-Decadal Rainfall Variability of the South Pacific Convergence Zone from 1562 to 2005 CE" Abstract PP51A-1823 presented at 2011, Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Partin, J. W., T. M. Quinn, C.-C. Shen, C. R. Maupin, K., Lin, F. W. Taylor, D. Sinclair, J. L. Banner, (2010), "Rainfall Variability under the South Pacific Convergence Zone as Reconstructed from a Speleothem Record (1670-2005) from Vanuatu" Abstract PP51B-07 presented at 2010, Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.

Partin, J. W., J. L. Banner, J. W. Jenson, F. W. Taylor, T. M. Quinn, C.-C. Shen, C. R. Maupin, D. J. Sinclair, B. Hardt, M. B. Cardenas, J.E. Myroie (2009), "Reconstructing Paleo-Rainfall in the Western Tropical Pacific: Developing Speleothem Proxies", *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract PP31D-1431

Partin, J.W., Banner, J. L., Taylor, F. W., Quinn, T. M., Cardenas, M. B., Jenson, J. W., "Speleothems: Ancient Tropical Rain Gauges", *15th International Congress of Speleology*, Kerrville, Texas USA, 19-26 July 2009.

Invited Participant, May 2007, "Future Directions in Karst Research", Karst Waters Institute USA, San Antonio, TX

Partin, J. W., Cobb, K. M., Adkins, J. A., Clark, B. (2006), "Stalagmite Reconstructions of Western Tropical Pacific Climate From the LGM to Present", *Eos Trans. AGU*, 87(52), Fall Meet. Suppl., Abstract PP53A-03

Partin, J. W., Cobb, K. M., Adkins, J. A., Clark, B. (2006), "Stalagmite reconstructions of tropical Pacific climate from Borneo during the last deglaciation" In: *Archives of Climate Change in Karst* (B.P. Onac, T. Tamas, S. Constantin & A. Persoiu, Eds.), Karst Waters Institute USA, Special Publication 10, pp 182.

INVITED TALKS

Partin, J. W. "Reconstructing Rainfall Variability in the Tropical Pacific using Stalagmites" Department of Oceanography, Texas A&M University, College Station, TX. 22 Apr 2013.

Partin, J. W. "Reconstructing Rainfall Variability in the Tropical Pacific using Stalagmites" The Institute for Geophysics, University of Texas at Austin, Austin, TX. 9 Nov 2012

Partin, J. W. "Reconstructing Past Rainfall in the Western Tropical Pacific: Cave Proxies" Water and Environmental Institute of the Western Pacific and the Marine Laboratory, University of Guam, Mangilao, Guam. 19 Mar 2010

Partin, J. W. "Reconstructing Paleo-Rainfall in the Western Tropical Pacific: Speleothem Proxies" The Institute for Geophysics, University of Texas at Austin, Austin, TX. 1 May 2009

Partin, J. W. "Caves on Guam: Mother Nature's Climate Stash" The Marine Laboratory, University of Guam, Mangilao, Guam. 16 Jan 2009

Partin, J. W. "Stalagmite Reconstructions of Western Tropical Pacific Climate from the Last Glacial Maximum to Present" Department of Geological Sciences, University of Florida, Gainesville, FL. 24 Jan 2008

Partin, J. W. "Stalagmite reconstructions of tropical Pacific climate from Borneo during the last deglaciation" Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, Kuching, Malaysia. 12 Jul 2006