

The Uxbenká Archaeological Project (UAP) examined human-environmental dynamics in the rise and fall of a tropical complex polity in southern Belize. Archaeological excavations were conducted from 2004-2015 and we led by Keith Prufer along with interdisciplinary scholars from the US and Europe. The project focused on developing large datasets from both core architecture, local district seats, neighborhoods, and rural settlements, and a large mountain top cave-shrine complex all anchored by robust AMS ¹⁴C chronologies. Additional studies focused on development of local paleoclimate records from cave-stalagmites (published in *Science* in 2012, *Nature Geosciences* in 2015, and *Science Advances* in 2021); long-term cave-climate monitoring (*Journal of Cave and Karst Studies* 2015); climate chronology models (*Climate of the Past* 2012); Ethnographic studies of food, agriculture, and social organization; and paleoecological studies of environmental change in the late Holocene. Ongoing are efforts to assist in cultural resource management at the site that in the past have included assisting with the establishment and registration of an indigenous Mopan Maya Community Based Organization (The Uch'ben Kaj Kin Ajaw Association UKAA) which has been formally responsible for management of the ancient city since 2009 and the development of the Museum of Santa Cruz, the first indigenous Maya developed, funded, and managed museum in Belize (est. 2018) that also serves as a visitors center for the site and now houses a community seed bank.

Funding for the UAP and student training:

Foundation for the Advancement of Mesoamerican Studies: 2005, 2006

National Science Foundation BCS 2006-2009

National Science Foundation HSD 2008-2012

Alphawood Foundation 2009-2015

National Science Foundation Dissertation Improvement Grant – Ethan Kalosky 2012

Wenner Gren Foundation Dissertation Award – Jillian Jordan 2011

Wenner Gren Foundation Dissertation Award – Valorie Aquino 2015

National Science Foundation Dissertation Improvement Grant – Amy Thompson 2015

Selected Recent UAP Publications

Aquino, Valorie V., Keith M. Prufer, and Douglas Kennett J.

2013 A Re-evaluation of Site Core Occupation at Uxbenká. *Research Reports in Belizean Archaeology* 10:269–279.

Asmerom, Yemane, James U. L. Baldini, Keith M. Prufer, Victor J. Polyak, Harriet E. Ridley, Valorie V. Aquino, Lisa M. Baldini, Sebastian F. M. Breitenbach, Colin G. Macpherson, and Douglas J. Kennett

2020 Intertropical convergence zone variability in the Neotropics during the Common Era. *Science Advances* 6(7):eaax3644. DOI:10.1126/sciadv.aax3644.

Braswell, Geoffrey, and Keith M Prufer

2009 Political organization and interaction in southern Belize. *Research Reports in Belizean Archaeology* 6:43–54.

Breitenbach, S. F. M., K. Rehfeld, B. Goswami, J. U. L. Baldini, H. E. Ridley, D. J. Kennett, K. M. Prufer, V. V. Aquino, Y. Asmerom, V. J. Polyak, H. Cheng, J. Kurths, and N. Marwan
2012 Constructing Proxy Records from Age models (COPRA). *Climate of the Past* 8(5):1765–1779. DOI:10.5194/cp-8-1765-2012.

Ebert, Claire E., Keith M. Prufer, and Douglas J. Kennett
2012 Maya Monuments and Spatial Statistics: a GIS-Based Examination of the Terminal Classic Period Maya Collapse. *Research Reports in Belizean Archaeology*. 9:91–107.

Kalosky, Ethan, and Keith M. Prufer
2012 Recent results of settlement survey and hinterland household excavations at the classic period site of Uxbenká, Toledo district, Belize. *Research Reports in Belizean Archaeology*. 9:255–276.

Kennett, Douglas J., Sebastian F. M. Breitenbach, Valorie V. Aquino, Yemane Asmerom, Jaime Awe, James U. L. Baldini, Patrick Bartlein, Brendan J. Culleton, Claire Ebert, Christopher Jazwa, Martha J. Macri, Norbert Marwan, Victor Polyak, Keith M. Prufer, Harriet E. Ridley, Harald Sodemann, Bruce Winterhalder, and Gerald H. Haug
2012 Development and Disintegration of Maya Political Systems in Response to Climate Change. *Science* 338(6108):788–791. DOI:10.1126/science.1226299.

Meredith, Clayton R
2014 Analysis of small cave sites related to the Uxbenká polity: Application of FT-IR techniques in the study of ritual practice. Unpublished Masters Thesis, Idaho State University, Pocatello.

Monteleone, Kelly, Amy E. Thompson, and Keith M. Prufer
2021 Virtual cultural landscapes: Geospatial visualizations of past environments. *Archaeological Prospection*:arp.1830. DOI:10.1002/arp.1830.

Moyes, Holley, and Keith M. Prufer
2013 The Geopolitics of Emerging Maya Rulers: A Case Study of Kayuko Naj Tunich, a Foundational Shrine at Uxbenká, Southern Belize. *Journal of anthropological research* 69(2):225–248.

Moyes, Holley, Mark Robinson, and Keith M Prufer
2016 The Kayuko Mound Group: a festival site in southern Belize. *Antiquity* 90(349):143–156.

Prufer, Keith M, and Douglas J. Kennett
2020 The Holocene Occupations of Southern Belize. In *Approaches to Monumental Landscapes of the Ancient Maya: A Legacy of Human Occupation*, edited by Bret Houk, Barbara Aroyo, and Terry Powis, pp. 16–38. University of Florida Press, Gainesville.

Prufer, Keith M., and Amy E. Thompson

2014 Settlement History at Uxbenka: Dispersal and Growth in a Regional Polity. *Research Reports in Belizean Archaeology*. 11:281–289.

2016 Lidar Based Analyses Of Anthropogenic Landscape Alterations As A Component Of The Built Environment. *Advances in Archaeological Practice* 4(3):393–409.

Prufer, Keith M., Amy E. Thompson, and Douglas J. Kennett

2015 Evaluating airborne LiDAR for detecting settlements and modified landscapes in disturbed tropical environments at Uxbenká, Belize. *Journal of Archaeological Science* 57:1–13. DOI:10.1016/j.jas.2015.02.013.

Prufer, Keith M., Amy E. Thompson, Clayton R. Meredith, Brendan J. Culleton, Jillian M. Jordan, Claire E. Ebert, Bruce Winterhalder, and Douglas J. Kennett

2017 The Classic Period Maya transition from an ideal free to an ideal despotic settlement system at the polity of Uxbenká. *Journal of Anthropological Archaeology* 45:53–68. DOI:10.1016/j.jaa.2016.11.003.

Ridley, Harriet E., Yemane Asmerom, James U. L. Baldini, Sebastian F. M. Breitenbach, Valorie V. Aquino, Keith M. Prufer, Brendan J. Culleton, Victor Polyak, Franziska A. Lechleitner, Douglas J. Kennett, Minghua Zhang, Norbert Marwan, Colin G. Macpherson, Lisa M. Baldini, Tingyin Xiao, Joanne L. Peterkin, Jaime Awe, and Gerald H. Haug

2015 Aerosol forcing of the position of the intertropical convergence zone since ad 1550. *Nature Geoscience* 8(3):195–200. DOI:10.1038/ngeo2353.

Ridley, Harriet E., James U. L. Baldini, Keith M. Prufer, Izabela W. Walczak, and Sebastian F. M. Breitenbach

2015 High resolution monitoring of Yok Balum Cave, Belize: an investigation of seasonal ventilation regimes and the atmospheric and drip-flow response to a local earthquake. *Journal of Cave and Karst Studies* 77(3):183–199.

Smirnov, DA, SFM Breitenbach, G Feulner, FA Lechleitner, KM Prufer, JUL Baldini, N Marwan, and J Kurths

2017 A regime shift in the Sun-Climate connection with the end of the Medieval Climate Anomaly. *Scientific Reports* 7(1):11131.

Smith, Michael E., Scott G. Ortman, José Lobo, Claire E. Ebert, Amy E. Thompson, Keith M. Prufer, Rodrigo Liendo Stuardo, and Robert M. Rosenswig

2020 The Low-Density Urban Systems of the Classic Period Maya and Izapa: Insights from Settlement Scaling Theory. *Latin American Antiquity*:1–18. DOI:10.1017/laq.2020.80.

Thompson, Amy E., Claire E. Ebert, and Keith M. Prufer

2013 Shifting Dynamics in the use of Space at Uxbenká. *Research Reports in Belizean Archaeology*. 10:255–270.

Thompson, Amy E., Gary M. Feinman, Marina Lemly, and Keith M. Prufer
2021 Inequality, networks, and the financing of Classic Maya political power. *Journal of Archaeological Science* 133:105441. DOI:10.1016/j.jas.2021.105441.

Thompson, Amy E., Gary M. Feinman, and Keith M. Prufer
2021 Assessing Classic Maya multi-scalar household inequality in southern Belize. *Plos one* 16(3):e0248169.

Thompson, Amy E., Clayton R. Meredith, and Keith M. Prufer
2018 Comparing geostatistical analyses for the identification of neighborhoods, districts, and social communities in archaeological contexts: A case study from two ancient Maya centers in southern Belize. *Journal of Archaeological Science* 97:1–13.

Thompson, Amy E., and Keith M. Prufer
2015 Airborne LiDAR for Detecting Ancient Settlements, and Landscape Modifications at Uxbenká, Belize. *Research Reports in Belizean Archaeology*. 12:251–259.
2016 Preliminary Findings from Ix Kuku'il, Toledo District, Belize. *Research Reports in Belizean Archaeology* 13.

Thompson, Amy E., and Keith M. Prufer
2019 Archaeological Research in Southern Belize at Uxbenká and Ix Kuku'il. *Research reports in Belizean archaeology* 16.

Thompson, Amy E., and Keith M. Prufer
2021 Household Inequality, Community Formation, and Land Tenure in Classic Period Lowland Maya Society. *Journal of Archaeological Method and Theory*. DOI:10.1007/s10816-020-09505-3, accessed January 20, 2021.

Walsh, Megan K., Keith M. Prufer, Brendan J. Culleton, and Douglas J. Kennett
2014 A late Holocene paleoenvironmental reconstruction from Agua Caliente, southern Belize, linked to regional climate variability and cultural change at the Maya polity of Uxbenká. *Quaternary Research* 82(1):38–50. DOI:10.1016/j.yqres.2014.01.013.



Keith Prufer with then UNM undergraduate Claire Ebert (now an assistant professor at the University of Pittsburg) discussing survey strategies at Uxbenká.



Keith Prufer with former University of Oregon PhD student Brendan Culleton (now Senior Scientist at the PSU-AMS radiocarbon facility) and former University of Melbourne student Margret Reith (now a CRM specialist in Australia) extracting sediment cores from a lagoon for environmental reconstructions.



Former UNM PhD student Amy Thompson (now assistant professor at the University of Texas-Austin) riding a horse to reach more distant rural settlement at Uxbenká



Former TAMU PhD student Willa Trask (now senior bioarchaeologist with the Defense POW/MIA Accounting Agency - DPAA) excavating at Uxbenká



Uxbenká project members leading a tour of local Mopan speaking school children to the nearby site of Nimli Punit in southern Belize.



Keith Prufer and field assistant Raymundo Sho installing climate monitoring equipment in Yok Balum Cave near Uxbenká.



Grand opening of the Museum of Santa Cruz in 2018