

Kristin N. Safi

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Education

- 2015 Ph.D., Department of Anthropology, Washington State University, Pullman. Archaeology Concentration. NSF IGERT-IPEM Fellowship Trainee (August 2008—July 2010). Dissertation title: Costly Signaling Among Great Houses on the Chaco Periphery.
- 2008 M.A., Anthropology, California State University, Long Beach. Archaeological Sciences Concentration. Thesis title: The Spatial Structure of Architecture as Defined by the Analysis of Ground Penetrating Radar Data at El Baúl, Cotzumalguapa, Guatemala.
- 2005 B.A., Anthropology and English, University of Denver. Magna Cum Laude, Phi Beta Kappa Scholar

Grants, Scholarships, and Honors

- 2014 Spatial Archaeometry Research Collaborations Award #1321443 (\$18,513)
- 2014 Alternate, Ford Foundation Dissertation Fellowship
- 2014 Janet L. Friedman Scholarship (\$1,000)
- 2013 National Science Foundation: Doctoral Dissertation Improvement Grant #1340542 (\$24,812)
- 2013 Nicholas Michael Scoales Scholarship (\$1,250)
- 2012 Arizona Archaeological and Historical Society Grant (\$1000)
- 2011 Graduate and Professional Student Association Research Excellence Award (\$350)
- 2010 Donald Crabtree Award for Lithic Technology (\$1000)
- 2008-2010 IGERT IPEM Fellowship Trainee (\$30,000/year)

Courses Taught

- ANTH101: Introduction to Anthropology. Four-field approach to anthropological topics
- ANTH330: Origins of Culture and Civilization. Archaeology and paleoanthropology of Europe, Africa, and Asia from 4 millions years ago to A.D. 500. Emphasis on seminar-style discussions of published articles, and research and writing skills through two term papers on the development of cultural traits or a particular civilization.
- ANTH331: America Before Columbus. Pre-contact Archaeology in North and Central America.

Peer Reviewed Publications

- 2016 **Safi, Kristin N.**, and Andrew I. Duff
The role of a Chaco-Era great house in the southern Cibola region of West-central New Mexico: The Largo Gap great house community. *Journal of Field Archaeology* 41(1): DOI: 10.1080/00934690.2015.1125224.
- 2015 Villanea, Fernando A., **Kristin Safi**, and Jeremiah Busch
A general model of negative frequency dependent selection explains global patterns of human ABO polymorphism. *PLOS One* 10(5): e0125003.
- 2014 **Safi, Kristin N.**
Using Least Cost Pathways to Understand the Processes of Migration from the Mesa Verde Region During the Pueblo III Period. *Kiva* 80(1):21-38.
- 2012 **Safi, Kristin N.**, Oswaldo Chinchilla Mazariegos, Carl P. Lipo, and Hector Neff
Using Ground-Penetrating Radar to Examine Spatial Organization at the Late Classic Maya Site of El Baúl, Cotzumalhuapa, Guatemala. *Geoarchaeology* 27:410-425.

In Review

Kristin N. Safi and Andrew I. Duff

The Pueblo II Period Great House Communities of the Southern Cibola Region. In *Communities and Households in the Greater Southwest: New Perspectives and Case Studies*, edited by Robert Stokes. Edited volume under consideration by the University of Colorado Press. Revisions submitted to editor March 2016.

2015-2016 Co-guest Editor for special issue of *Journal of Archaeological Science-Reports* entitled *Archaeometric Approaches to the Archaeology of Northern Hunter-Gatherers*.

Other Publications

2014 **Safi, Kristin N.**

Perspectives on Mentoring. Guest edited by **Kristin Safi**, *SAA Archaeological Record*. 14(4):34-37.

2013 **Safi, Kristin N.**

Preliminary Excavations at the Largo Gap Great House, West-central New Mexico. *Glyphs* 64(4):10-11.

2007 **Safi, Kristin**, and Carl Lipo

Geophysical Surveys at the Anakena Dune of Easter Island. *SAS Bulletin* 31(1): 14-18.

2007 **Safi, Kristin**, Carl Lipo, Terry Hunt, and Sergio Rapu

Geophysical Explorations and Sequences of Monumental Architecture at the Anakena Dune of Easter Island. *Journal of Historical and Evolutionary Sciences*, 1(2): 4.

Technical Proficiency and Professional Skills

- Geographic Information Systems, geospatial modeling, and Global Positioning Systems
 - GRASS GIS v6.4/7.1, ArcGIS v10, Quantum GIS v1.8
- Remote sensing techniques and data processing
 - Ground penetrating radar (GSSI, MALA), magnetometry (Geometrics G858), conductivity, resistivity, aerial photography, satellite image processing and analysis
- Compositional and chronometric analyses
 - LA-ICP-MS, PXRF, XRD, including sample preparation and processing analyte data in GAUSS
 - OSL, TL, IR, SAR, including sample preparation and processing chronometric data
- Artifact Analysis
 - Ceramics (stylistic and technological manufacturing)
 - Ground stone
 - Versed in faunal identification and lithic analyses
- Statistical and Mathematical Applications
 - R, Stata v10
- Technical report writing and background research
 - Department of Archaeology and Historic Preservation (WISAARD, WA); New Mexico Cultural Resource Information System (NMCRIS), COMPASS (CO), WYCRO (WY), Idaho and California State Historic Offices of Preservation
- Pedestrian survey, site and feature mapping, subsurface testing
- Prehistoric and historic artifact identification, cataloguing, and curation
- Repatriation under NAGPRA
- Project proposals and budgets

Remote Sensing and Geophysical Surveys

- Dissertation Research (July 2014, manuscript in prep). Assessment and characterization of architectural features at the Largo Gap great house using GPR and aerial thermography (collaboration with CAST, U of Arkansas)

- Crew Chief (CSULB, Jan. 2006, 2007, 2008; published in *Geoarchaeology*). Geophysical survey (GPR, conductivity, magnetometry, kite photography, and thermal camera imaging) at El Baúl, El Naranjo, and La Blanca, Guatemala
- Teaching Assistant (CSULB)
 - Nov. 2007: Geophysical survey (GPR, conductivity, magnetometry, resistivity, and kite photography) at Zzyzx, California
 - July to Aug. 2006; July 2007: Geophysical survey (GPR and conductivity), mapping, and excavation at Anakena Dune, Maetaketemoa, and Akahanga, Easter Island, Chile.
- Field Supervisor (CALTRANS)
 - Dec. 2006: Geophysical survey (GPR and conductivity) at State Route 133 (ORA-1055) in Orange County, California
 - May 2006: Geophysical survey (GPR) of historic adobe ruins at Yorba Linda, California.
- Field Technician (KJJ Corporation, Aug. 2004 to June 2005) Geophysical survey (GPR) at a variety of locations across Colorado, New Mexico, and Arizona. Surveys were conducted at historic and prehistoric sites to identify architectural features as well as at cemeteries to identify unmarked burials.

Geospatial Analysis and Complex Adaptive Systems Research

- Geospatial Modeling
 - Research collaboration (March 2010 to Present; manuscript in prep). Influence of canoe travel routes on prehistoric site clustering and economic trade patterns in the Gulf of Georgia, southwestern British Columbia. Model built in GRASS GIS, statistical and network analysis in GRASS GIS and R, using prehistoric site distributions, faunal remains, and water travel constraints. Emphasis on factors affecting water travel and least cost networks.
 - Research collaboration (January 2016 to Present; manuscript in review). Analysis of probable migration routes by Syrian refugees and IDPs, given conflict cities, border checkpoint policies, and carrying loads.
 - Dissertation Research (June 2011 to March 2015, published in *Journal of Field Archaeology*). Settlement pattern and community structure analysis through time of great house communities in the Southern Cibola Region. Spatial and statistical analyses in GRASS GIS and R, using WSU collected survey and ceramic data.
 - Oct. 2008 to Present; published in *Kiva*. Influence of physical landscape on patterns of migration and depopulation in the prehistoric PIII Period (A.D. 1150-1300) American Southwest. Modeled in GRASS GIS, Quantum GIS, and ArcGIS.
 - Research collaboration (March 2010-February 2015; published in *PLOS One*). Evaluates Native American population evolution by analyzing ABO blood type allele diversity in both modern and ancient populations. Model built in R and GRASS GIS, using ABO blood allele frequencies, worldwide genetic diversity levels, geographic distances, and patterns of population dispersal.
- Agent-Based Models and Simulations
 - Research member (Village Ecodynamics Project, Aug. 2008 to April 2011). Evaluated degree to which shared kin-based identity and resource sharing affected migration patterns and differential success of individual households. Extended ABM built in Repast, programmed in Java, using multiple cultural, geologic, environmental, and topographic datasets.
 - Independent Research (March 2009 to June 2009). Relationship between salmon abundance and overfishing on the northwest coast. Model built in R, using salmon spawning data, human predation patterns, and prehistoric and ethnographic fishing strategies.

Chemical Compositional, Chronometric, and Artifact Analysis

- Trace Elements and Compositional Analysis
 - Dissertation Research (June 2014 to March 2015, manuscript in prep): INAA on ceramic samples (MURR) and EDXRF (Geoarchaeological XRF Lab) on obsidian from PII southern Cibola occupations.
 - Independent Research (Oct. 2010 to March 2011): Ground stone analysis and chemical characterization (pH, EC, XRF) in Geoarchaeology Lab and GeoAnalytic Lab, Washington State University.

- Research Assistant (CSULB IIRMES Lab, Oct. 2006 to March 2008). Analyte analysis on ceramic sherds, basalt tools, and obsidian tools using Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry
- Independent Research (Nov. 2006 to Dec. 2006): Analysis on ceramic sherds using X-Ray Diffraction at California State University, Long Beach
- Chronometric Dating
 - Research Assistant (CSULB IIRMES Lab, Oct. 2006 to March 2008). Coarse grain and fine grain analysis of ceramics, sediments, and lithics using Thermoluminescence and Optically Stimulated Luminescence
- Artifact Analysis
 - Dissertation Research (Aug. 2013 to March 2015). Ceramic, lithic, ground stone, and specialized artifacts (e.g., bone tools). Typological, manufacturing characteristics, use wear
 - Independent Research (March 2010): Ceramic analysis at Royal Museum for Central Africa, Terurven, Belgium
 - Lab Technician (Statistical Research, Inc., March to June 2008). Analysis, curation and repatriation of artifacts and human remains.
 - Independent Research (Jan. 2005 to March 2005): Historical artifact analysis from Ludlow Massacre Site, Trinidad, Colorado. Artifacts included metals, textiles, glass, and ceramics.
 - Lab Intern (e²m, Dec. 2004 to March 2005). Washing, cataloguing, and analyzing lithic artifacts from Paleoindian sites in Middle Park, Colorado.

Archaeological Field Experience

- Project Archaeologist (Alpine Archaeological Consultants, June 2015 to December 2015) Pedestrian survey, subsurface probing, construction monitoring, research, and report writing for locations in Colorado, Wyoming, Kansas, and North Dakota.
- Project Archaeologist (Plateau Archaeological Investigations, April 2010 to May 2015) Pedestrian survey, subsurface probing, construction monitoring, research, and report writing for locations in Washington, Oregon, and Idaho
- Field Supervisor (WSU, June 2011, 2012; July 2013, June-July 2014) Pedestrian survey, mapping, site recording, excavation, and geophysical exploration of the Largo Gap Great House community, Catron County, New Mexico
- Archaeologist (WSU, June 16-30, 2013; May 12-June 1, 2014)
Excavation of Dionisio Point (DgRv-003), Gulf Islands, British Columbia
- Archaeologist (WSU, Jan. to March 2010)
Pedestrian survey and excavation in the Ngotto Forest Preserve, Central African Republic
- Field Technician (Desert Research Institute, June to Aug. 2009)
Pedestrian survey of Dugway Valley at the Dugway Proving Grounds, Utah
- Field Technician (Sapphos Environmental, July to Aug. 2007) Pedestrian survey of Sierra Mountains outside Mojave, California
- Field School (University of Colorado at Boulder, May to June 2004)
Excavations at Bluff Great House and Comb Wash, Bluff, Utah, and survey at Canada Alamosa, New Mexico

CONFERENCE ACTIVITY AND INVITED TALKS

Organized Sessions

2012 **Safi, Kristin N.**

Measuring Cultural Transmission: Implications and Applications. Paper presented at the 77th Annual Meeting of the Society for American Archaeology. Memphis, Tennessee. (Chair and Session Organizer, *Recent Developments in Cultural Transmission Theory and its Applications*)

Papers

- 2016 **Safi, Kristin N.**, and Andrew I. Duff
Exchange and Resource Procurement During the Chaco Era in the American Southwest. Paper presented at the 81st Annual Meeting of the Society for American Archaeology. Orlando, Florida.
- 2016 **Safi, Kristin N.**, Patrick Dolan, and Devin A. White
A Marine-Centric, Geospatial Approach to Understanding Travel Networks Across the Salish Sea. Paper presented at the 69th Annual Northwest Anthropological Conference. Tacoma, Washington.
- 2015 **Safi, Kristin N.**, Adam Wiewel, Katie Simon, and Andrew Duff
Mapping the Monumental Architecture of the Largo Gap Great House. Paper presented at the 80th Annual Meeting of the Society for American Archaeology. San Francisco, California.
- 2014 **Safi, Kristin N.**
The Chacoan Occupation of the Southern Cibola Region. Invited talk at the Little Colorado River Chapter of the Arizona Archaeological Society, Springerville, AZ.
- 2013 **Safi, Kristin N.** and Patrick Dolan
Evaluating Site Connectivity and Marine Travel through Time Among Settlements of the Salish Sea. Paper presented at the 66th Annual Northwest Anthropological Conference. Portland, Oregon.
- 2013 **Safi, Kristin N.** and Andrew I. Duff
Largo Gap and the Pueblo II Period Great Houses of the Southern Cibola Region. Paper presented at the 78th Annual Meeting of the Society for American Archaeology. Honolulu, Hawaii.
- 2013 Dolan, Patrick, and **Kristin N. Safi**
An Agent-Based Model of Hunter-Fisher-Gather Transmission and Fusion-Fission Dynamics. Paper presented at the 78th Annual Meeting of the Society for American Archaeology. Honolulu, Hawaii.
- 2013 Dolan, Patrick and **Kristin N. Safi**
A Temporal Analysis of Site Connectivity and Marine Travel Corridors Among Settlements of the Salish Sea. Paper presented at the Annual Meeting of the Canadian Archaeological Association. Whistler, British Columbia, Canada.
- 2011 **Safi, Kristin N.**
Assessing Prehistoric Salt Processing and Small-Scale Production in Minimally Specialized Ground Stone Technology. Paper presented at the Annual Meeting of the Northwest Anthropological Conference. Moscow, Idaho.
- 2011 **Safi, Kristin N.**
Examining Processes of Migration and Friction Routes to Understand the Depopulation of the Mesa Verde Region. Paper presented at the 76th Annual Meeting of the Society for American Archaeology. Sacramento, California.
- 2010 **Safi, Kristin N.**, Karen D. Lupo, and Carl P. Lipo
Constructing a chronology of ceramic use in the northern Congo Basin. Paper presented at the 7th Annual New World Luminescence Dating Workshop. Montreal, Quebec.
- 2010 **Safi, Kristin N.**, Karen D. Lupo, Dave N. Schmitt, J.P. Ndanga, and Christopher A. Kiahtipes

Neglected pots: Compositional analysis of the ceramics from the Northern Congo Basin. Paper presented at the 75th Annual Meeting of the Society for American Archaeology. St. Louis, Missouri.

2009 **Safi, Kristin**, Carl Lipo, Oswaldo Chinchilla, and Hector Neff
Measuring spatial organization at El Baúl, Cotzumalguapa, Guatemala. Paper presented at the 74th Annual Meeting of the Society for American Archaeology. Atlanta, Georgia.

2007 **Safi, Kristin N.**
Luminescence Dating of Ceramic Samples from the Southern California Desert. Paper presented at the 41st Annual Meeting of the Society for Californian Archaeology. San Jose, California.

Posters

2014 **Safi, Kristin N.** and Andrew I. Duff
Reconstructing a Great House: A Case Study from West-Central New Mexico. Poster presented at the 79th Annual Meeting of the Society for American Archaeology. Austin, Texas.

2010 **Safi, Kristin N.**, Ben Ford, Denton Cockburn, and Timothy A. Kohler
Cultural transmission, resource strategy, and migration during the Neolithic Demographic Transition in the prehistoric American Southwest. Poster presented at the 2010 Annual Meeting of the American Anthropological Association. New Orleans, Louisiana.

2010 **Safi, Kristin N.**, Adam Rorabaugh, and Sophie Asbury
Geoarchaeological analysis of soils and features from the Redbird Beach Site, Idaho. Poster presented at the Annual Meeting of the Northwest Anthropology Conference. Ellensburg, Washington.

2008 **Safi, Kristin**, Chris Watkins, Carl Lipo, and Hector Neff
Luminescence dating of prehistoric Hohokam irrigation canals using IRSL and SAR analyses. Poster presented at the 73rd Annual Meeting of the Society for American Archaeology. Vancouver, B.C.

2007 **Safi, Kristin**, Carl Lipo, Terry Hunt, and Sergio Rapu
Geophysical Explorations and Sequences of Monumental Architecture at the Anakena Dune of Easter Island. Poster presented at the 72nd Annual Meeting of the Society for American Archaeology. Austin, Texas.

UNIVERSITY SERVICE

2015 Honors Thesis Committee
Shen Tan, "The Effects of Exercise on Subjective Well-Being: A Comparative Analysis."

EMPLOYMENT

2015-Present *Postdoctoral Research Associate*, Oak Ridge National Laboratory, December 2015 to present. *Research Assistant Professor*, Department of Anthropology, University of Tennessee Knoxville.
Geospatial analyses in ArcGIS, QGIS, GRASS GIS. Development of population movement models as response to economic development, conflict, and climate change. Catalogue development for remote sensing data.

2015 *Project Archaeologist*, Alpine Archaeological Consultants, Inc., June 2015 to December 2015.
Responsibilities include: Pedestrian survey, subsurface probing, excavation and mitigation, site recording, and mapping for locations in Colorado and Wyoming; background research; data management; and technical report writing.

- 2010-2015 *Graduate Student Instructor*, Department of Anthropology, Washington State University, Aug. 2010 to May 2012; January 2013 to May 2015
Instructor of record for ANTH 101: General Anthropology, ANTH 330: Origins of Culture and Civilization, ANTH 331: America Before Columbus, and for lab component of ANTH 260 Physical Anthropology.
- 2010-2015 *Archaeologist*, Plateau Archaeological Investigations, LLC, April 2010 to June 2015.
Responsibilities include: Pedestrian survey, subsurface probing, construction monitoring, site recording, and mapping for locations in Washington, Oregon, and Idaho; background research; technical report writing; project supervision; and company-wide report editing.
- 2009 *Field Technician*, Desert Research Institute, June to Aug. 2009
Responsibilities include: Pedestrian survey, site mapping, and in-field artifact analysis.
- 2008 *Lab Technician*, Statistical Research Incorporated, March to June 2008
Responsibilities include: Complying with repatriation of human remains and burial artifacts, lab analysis, artifact cataloguing, and curation.
- 2007-2008 *Research Assistant*, Institute for Integrated Research in Materials, Environments, and Societies (IIRMES), June 2007 to March 2008
Responsibilities include:
-Coarse grain and fine grain analysis of ceramics, sediments, and lithics using Thermoluminescence and Optically Stimulated Luminescence (TL and OSL); technical report writing.
-Chemical compositional analysis of ceramic sherds, basalt, obsidian, chert, and sediments tools using Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS).
- 2006-2008 *Geophysical Subcontractor*, California Department of Transportation, Aug. 2006-June 2008
Responsibilities include: Organizing and conducting geophysical surveys using GPR and conductivity; processing data; writing technical reports; drawing up budgets and project proposals.
- 2005-2008 *Graduate Assistant*, Department of Anthropology California State University- Long Beach, Sept. 2005 to Feb. 2008
Responsibilities include: Maintaining geophysical equipment; designing and running anthropology lab courses; and grading.
- 2007 *Field Technician*, Sapphos Environmental, July to Aug. 2007
Responsibilities include: Pedestrian survey, site recording, and site mapping.
- 2006-2007 *Field School Teaching Assistant*, California State University Long Beach, July to August 2006, July 2007
Responsibilities include: Teaching students how to use geophysical methods on Easter Island, Chile; pedestrian survey; data analysis; site mapping.
- Pre-2006**
2004-2005 *GPR Field Technician*, KJJ Corporation, Aug. 2004 to June 2005
Responsibilities include: performing GPR surveys in a variety of environments and contexts; data analysis; and technical report writing.

2004-2005 *Cultural Resource Management Intern*, Engineering-Environmental Management, Inc.,
Dec. 2004 to March 2005
Responsibilities include: Washing, cataloguing, and analyzing lithic artifacts; performing
research on historic sites; editing reports.

Professional Organizations

- Society for American Archaeology
- Canadian Archaeological Association
- Arizona Archaeological and Historical Society
- Association for Washington Archaeology
- Register of Professional Archaeologists

REFERENCES

Andrew I. Duff

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