

9/10/2022

## CURRICULUM VITAE

### M. STEVEN SHACKLEY

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Professor and Director Emeritus  
Archaeological XRF Laboratory  
Department of Anthropology  
University of California, Berkeley

### EDUCATION

Ph.D. in Anthropology, Arizona State University, 1990  
Dissertation Title: *Early Hunter-Gatherer Procurement Ranges in the Southwest: Evidence from Obsidian Geochemistry and Lithic Technology*. Committee: Geoffrey A. Clark (chair), C. Vance Haynes (Geosciences/Anthropology, U Arizona), Donald H. Morris, John R. Holloway (Geology/Chemistry, ASU), Charles L. Redman. Dissertation defended December 1989.

M.A. in Anthropology, San Diego State University, 1981.  
Thesis title: *Late Prehistoric Exchange Network Analysis in Carrizo Gorge and the Far Southwest* (published by Coyote Press, 1994). Committee: J.W. Ball, L.L. Leach, N.H. Greenwood.

B.A. Anthropology and Geological Science, San Diego State University (Cum Laude with Distinction in Anthropology) 1979. Phi Beta Kappa, 1980.

A.S., Liberal Arts, Physical Science emphasis (with Honors) 1977, Grossmont College, La Mesa, California

### GRANTS/CONTRACTS, HONORS, AND FELLOWSHIPS

*Roald Fryxell Medal for Interdisciplinary Research (Physical Science)*, Society for American Archaeology. Awarded at the 84<sup>th</sup> Annual Meeting of the Society for American Archaeology, Albuquerque, New Mexico, 12 April 2019.

*Society for American Archaeology's Award for Excellence in Archaeological Analysis (Lithics)*. Awarded at the 76<sup>th</sup> Annual Meeting of the Society for American Archaeology, Sacramento, California, 1 April 2011.

San Diego State University Tower Society.

*The Berkeley Geoarchaeological XRF Laboratory Instrument Maintenance, 2009-2012*. National Science Foundation, BCS 0905411, (Archaeometry/Archaeology Program; Renewable Sponsored Laboratory).

*The Southwest Archaeological Obsidian Project in the 21<sup>st</sup> Century.* National Science Foundation (Archaeology Program; BCS-0810448), 2008-2009.

*The Berkeley Geoarchaeological XRF Laboratory Instrument Maintenance.* National Science Foundation, BCS 0716333, (Archaeometry/Archaeology Program; Renewable Sponsored Laboratory). 2007-2008

*<sup>40</sup>Ar/<sup>39</sup>Ar Dating of Geoarchaeological Obsidian Sources in the Mogollon-Datil Volcanic Province, Southwestern New Mexico.* Esper-Larsen Foundation Grant, Department of Earth and Planetary Science, University of California, Berkeley, 2009.

*Viewing Serbian Prehistoric International Relationships Via Obsidian Source Characterization Studies.* Peter N. Kujachich Endowment in Serbian and Montenegrin Studies, Institute of Slavic, East European, and Eurasian Studies, University of California, Berkeley. Mentoring Marina Milić. 2006-2007.

The Valles Caldera National Preserve, New Mexico Obsidian Study. Stahl Endowment for Archaeological Research Grant. University of California, Berkeley. 2004-2005.

Long Distance Movement of Obsidian during the Middle Stone Age in Ethiopia. *L.S.B. Leakey Foundation Grant.* 2002-2004. PI: with Post-Doctoral Fellow, Agazi Negash and Professor Tim White (Integrative Biology, UCB).

Investigating Obsidian Procurement at Zuni Pueblo, with Todd Howell and Zuni Cultural Resource Enterprise (ZCRE). Grant from the Arizona Archaeological and Historic Society, Tucson. 2002.

Late Preceramic Farmer/Foragers at the Foot of the Mogollon Rim: The McEuen Cave Archaeological Project. *National Science Foundation Grant* BCS-0001395. 2001-2004.

Obsidian Source Provenance, Projectile Point Morphology and Sacaton Phase Hohokam Cultural Identity. Agnese Haury Foundation, University of Arizona, grant-in-aid.

Bureau of Land Management, California Office: PI for Web presentation contract to PAHMA for BLM Sites in Inyo County, California, and Churchill County, Nevada.  
<http://hearstmuseum.berkeley.edu/blm/introduction.html>

Chancellor's Distance Learning Course Development. University of California, Santa Cruz Chancellor's Grant to Refine the Multi-Media and Distance Learning Course, Southwest Prehistory (Anth 122/196 AB) with Professor Judith Habicht-Mauche, UCSC. For Spring 1999.

National Center for Preservation Technology and Training, National Park Service: *Digitization of Primary Documents Pertaining to the Archaeological Collections from California and Nevada in the Phoebe Hearst Museum of Anthropology.* Co-PI with Rosemary Joyce and Kathleen Butler. Fall 1997-Fall 1998

Obsidian Distribution and Exchange at McEuen Cave, southeastern Arizona. Faculty Stahl Endowment Grant, Archaeological Research Facility, University of California, Berkeley. Spring 1997 through Spring 1998. Includes field support for graduate student Eduardo Serafin.

*The Northern Mexico Archaeological Obsidian Project.* Faculty Stahl Endowment Grant, University of California, Berkeley and the Instituto Nacional de Antropología e Historia, Mexico, October 1998.

*X-Ray Fluorescence Spectrometry of Obsidian in Western North America: Undergraduate Education and Research.* Faculty Stahl Endowment Grant, Archaeological Research Facility, University of California, Berkeley. Spring 1995 through Spring 1996.

*Office of Archaeological Studies, Museum of New Mexico.* Continuing Obsidian Studies Contract, 1997-present.

*Zuni Cultural Resources Enterprise, Pueblo of Zuni, New Mexico.* Continuing Obsidian Studies Contract, 1997-2010.

*The Northern Mexico Archaeological Obsidian Project.* Stahl Endowment Grant, Archaeological Research Facility, University of California, Berkeley. Spring 1994 through Spring 1995.

*The Southwest Archaeological Obsidian Project: A Basis for Studies of Human Interaction and Procurement.* National Science Foundation, Archaeology Program (DBS-9205506). June 1, 1992 to December 1, 1994.

*Obsidian Procurement at Two Classic Period Hohokam Sites in the Eastern Phoenix Valley, El Povoron and Las Fosas.* Arizona Archaeological and Historical Society Research Grant, 1994.

*Neutron Activation Analysis (NAA) of Archaeological Obsidian from the American Southwest.* National Science Foundation: Missouri University Research Reactor Facility Grant-in-Aid. \$9100.00 January 1993.

*Sources of Archaeological Obsidian in Northern Mexico: A Pilot Study.* Stahl Endowment Grant, Archaeological Research Facility, University of California, Berkeley. \$2158.00 for Spring 1993 through Spring 1994.

*Obsidian Artifact Sourcing at the Escalante Ruin Group in Southern Arizona* (with Douglas Mitchell). Arizona Archaeological and Historical Society Research Grant, 1992.

Dissertation Research Development Grant, Graduate Student Research Council, Arizona State University 1985-1986.

Achievement Rewards for College Scientists Foundation (ARCS) Fellowship 1984-1985.

Regents Graduate Academic Fellowship, Arizona State University 1983-1987.

Phi Beta Kappa 1980.

### **Faculty Mentor Awards**

1994 Re-Entry Mentor Award, University of California, Berkeley, for Thomas Schreiner, University Medal Winner.

1994 Graduate Student Mentor Award, California State University, Chico, for Blossom Hamusek, Outstanding Thesis Award Winner.

### **REGIONAL AND TOPICAL SPECIALTIES IN ARCHAEOLOGY**

American Southwest and Northern Mexico

Geoarchaeological Science

Archaeological Petrology

X-Ray Fluorescence Spectrometry in Archaeology

Obsidian Studies in Archaeology

Lithic Analysis

Raw Material Studies

Lithic Replication Studies

Hunter-Gatherers

Paleoindian and Archaic Social Processes

Museum Anthropology

### **ACADEMIC/TEACHING POSTS**

2011-present –Emeritus Professor of Anthropology, University of California, Berkeley.

2011-present – Adjunct Professor, Department of Anthropology, University of New Mexico.

2010-2011 - University Professor (Step VI), NSF Geoarchaeological XRF Laboratory, Department of Anthropology, University of California, Berkeley

2004-2011 - Professor, Department of Anthropology, UC Berkeley. Taught a variety of courses in the department, some cross-listed in Earth and Planetary Science: Seminar in Method and Theory of Lithic Technology - Anth 228; Geoarchaeological Science - Anth C131/EPS C171; Graduate Seminar in Method and Theory - Anth 229; Hunter-Gatherers – Anth 123A; Southwest Prehistory- Anth 122/222, a distance learning course with UCSC; Data Analysis and Computational Methods – Anth 169A; Petrology in Archaeology – Anth 128/228; XRF Laboratory Practicum – Anth 134B; Lithic Technology Practicum – Anth 134B; Field Practice in Archaeological Petrology - Anth 134A; Doctoral advisor, and Directed Studies with individual students on various topics.

1990-2012, Director, Geoarchaeological X-Ray Fluorescence Spectrometry Laboratory, University of California, Berkeley. Managed undergraduate and graduate teaching in geoarchaeology laboratory with a Philips 2400 WXRf spectrometer (EPS Department), and the Thermo Scientific *Quant'X* EDXRF spectrometer, Department of Anthropology.

<http://www.swxrflab.net>

1990-2004 Research Archaeologist, Phoebe Hearst Museum of Anthropology, University of California, Berkeley. Assistant Research Archaeologist (1990-1994, 1.0 FTE), Associate Research Archaeologist (1994-2000, 1.0 FTE), Research Archaeologist (2000-2004, 1.0 FTE).



1999-2004 Adjunct Professor, Department of Anthropology, UC Berkeley

1994-1999 Adjunct Associate Professor, Department of Anthropology, UC Berkeley.

1990-1994 Adjunct Assistant Professor, Department of Anthropology, UC Berkeley.

1990-present Faculty Member, Archaeological Research Facility, University of California, Berkeley.

1989-1990 Adjunct Assistant Professor, Department of Anthropology, San Diego State University.

### **Graduate Student and Post-Doctoral Committee Membership**

2017 Doctoral advisor for Flavio Silva de la Mora, Department of Anthropology, University of California, Berkeley. Thesis: *Lithic Communities of Practice and Daily life in the Northwestern Maya Lowlands during the Late Classic (700-850 A.D.)*

2016 Doctoral advisor for Di Hu, Department of Anthropology, University of California, Berkeley. Thesis: *Labor under the Sun and the Son: Landscapes of Control and Resistance at Inka and Spanish Colonial Pomacocha, Ayacucho, Peru*

2014 Doctoral chair for Dr. Bryan Cockrell, Department of Anthropology, University of California, Berkeley. Thesis: *The Metals from the Cenote Sagrado, Chichén Itza as Windows on Technological and Depositional Communities.*

2014 Doctoral chair for Dr. Celeste Henrickson, Department of Anthropology, University of California, Berkeley. Thesis: *The Archaeology of Cueva Santa Rita: A Late Holocene Rockshelter in the Sierra de la Giganta, Baja California Sur, Mexico.*

2006-2014: Outside supervisor for Leah Morgan (Ph.D. 2009), James Watkins (Ph.D. 2010), and Brook Peterson (Ph.D. 2014), Department of Earth and Planetary Sciences, UC, Berkeley.

2010 Dissertation committee for Andrew Roddick: *Communities of Production and Consumption During the Late Formative, Taraco Peninsula, Bolivia*

2005: Dissertation committee member: Jennifer Kahn: *Stratification and Household Communities in Opunohu Valley, Mangia, Oceania.* Department of Anthropology, University of California, Berkeley.

2005: Co-dissertation Chair for Kathleen A. Sterling: *Learning and Apprenticeship in the Magdalenian Midi-Pyrénées.* Department of Anthropology, University of California, Berkeley.

2003: Outside supervisor for dissertation of Martin Jones, University of Auckland, New Zealand: *A Brief History of Time.*

2002-2004: Co-advisor with Tim White, President's post-doctoral fellow, Agazi Negash (Ethiopia), Early and Middle Stone Age Obsidian Studies in the Great Rift Valley, East Africa.

2002: Doctoral Co-Chair for, Dr. Carolyn Dillian: *More than Toolstone: Differential Utilization of Glass Mountain Obsidian*.

2002: Dissertation committee member: Dr. Kathleen Hull: *Culture Contact in Context: A Multiscalar View of Catastrophic Depopulation and Culture Change in Yosemite Valley, California*.

2000: Qualifying Exam and Dissertation Committee Member: Dr. Yumiko Nakanishi, Department of Near Eastern Studies, *Style and Chronological Issues in the Archaeology of the Kushans, Central Asia*.

Master's thesis committee member of Catherine Bullock, Department of Near Eastern Studies, UC, Berkeley: *Towards a Chronology of Sasanian Stamp Sealings: A Statistical Analysis of the Bullae from Qasr-I Abu Nasr, Iran*. Graduated 2000

Spring 1993 Outside member, Master's thesis of Blossom Hamusek, *What X Equals: The Archaeological and Geological Distribution of "Source X" Tuscan Obsidian in Northern California*. Department of Anthropology, California State University, Chico.

Spring 1992 Doctoral Qualifying Committee of Justin Hyland, *Archaeological Context of Prehistoric Mural Sites in Central Baja California, Mexico*. Department of Anthropology, University of California, Berkeley.

Spring 1992 Outside Master's thesis committee member of Andrew Pignuolo, *Piedra del Lumbre "Chert" and Hunter-Gatherer Mobility and Exchange in Southern California*, Department of Anthropology, San Diego State University.

Fall 1990 Doctoral Qualifying Committee of Carolyn Winters, *Olmec Sculpture and Stoneworking*, Department of Anthropology, University of California, Berkeley.

### **Undergraduate Student Honor's Thesis Committee Membership**

2008 *A Comparison of Kumeyaay Tool Materials: An Analysis of Use-Wear with Wood and Stone*. Joelle Morgan, Department of Anthropology, UC Berkeley, Chair.

2007 *Conservation vs. Intensification: 1000 Years of Mussel at a Bay Area Shellmound*. Kevin Sinats, Department of Anthropology, UC Berkeley. Chair, Kent Lightfoot.

2004 *Change and Stasis: A Study of Asian Style Tableware Recovered from the Market Street Chinatown Site, San Jose*. Jun J. Frank. Department of Anthropology, UC Berkeley. Chair, Junko Habu.

2003 *Kashaya in Post-Russian Times: Analysis of Archaeological Materials from a Multi-Occupation Site at Fort Ross, California*. Ingrid Newquist. Department of Anthropology, UC Berkeley. Chair, Kent Lightfoot.

2002 Chair: *Early Grey Wares of the Middle East*. Resha Shenendoa. Department of Anthropology, UC Berkeley.

2002 Chair: *Obsidian Source Provenance in Late Post-Classic/Colonial Honduras*. Antonia Stainbrook. Department of Anthropology, UC Berkeley. Chair.

1998/1999 Chair: *Obsidian Procurement and Distribution at Pecos Pueblo, Northern New Mexico*. Devin White, Department of Anthropology, University of California, Berkeley.

1998/1999 Chair: *Collections Ethics of the Kumeyaay Collection of the Phoebe Hearst Museum of Anthropology*. Rebecca Graf, Department of Anthropology, University of California, Berkeley.

1998 *Obsidian Procurement at CR-372, Central Honduras*. Kenneth McCandless. Department of Anthropology, University of California, Berkeley, Rosemary Joyce, Chair.

1994 *Investigation of Cinnabar Use by the Ancient Maya*. Daniel M. Stauber. Department of Anthropology, University of California, Berkeley, Christine Hastorf, Chair.

Spring 1992 *Variability and Typology of Anasazi Plant Fiber Sandals from the Hazzard Collection in the Lowie Museum of Anthropology*. Jenny Kahn, Department of Anthropology, University of California, Berkeley, Kent Lightfoot, Chair.

Spring 1992 *Acculturation and Ethnic Relationships in the Russian-Aleut Occupation at Fort Ross, California*. Allison Cohen, Department of Anthropology, University of California, Berkeley, Kent Lightfoot, Chair.

#### **SELECTED INVITED LECTURES/VISITORSHIPS**

- 2016 Hohokam Social Identity Unraveled through XRF and the Southwest Archaeological Obsidian Project. Plenary Lecture, 60th Annual Midwest Archaeological Conference, University of Iowa, 8 October 2016.
- 2013 XRF, Lithic Technology, and The Southwest Archeological Obsidian Project: Rewriting Preclassic Hohokam Prehistory. Chancellor's Professional Development Series Lecture, Department of Geological Science, University of Hawai'i, Hilo.
- 2011 *What Hath Obsidian Studies Wrought in Southwest Archaeology?* Center for Desert Archaeology Café Lectures, Arizona Humanities Council. Tucson, Arizona.
- 2009 2009 Distinguished College Lecture: Ishi, Stone Tools, and Cultural Identity in Native California. Porterville College, Porterville, California.
- 2008 2008 Arts and Letters Distinguished Alumnus/Friends of Anthropology Lecture, San Diego State University: *Archaeological Petrology in a 21<sup>st</sup> Century Archaeology: Nearly Beyond Ceramics*.
- 2007 Keynote Address: Archaeological Petrology, X-ray Fluorescence Spectrometry, and Obsidian Studies in a 21<sup>st</sup> Century Geoarchaeology. Geological Society of America Annual Meeting, Denver, Colorado.
- 2007 Nearly Beyond Ceramics: Archaeological Petrology In a 21st Century Southwest Archaeology. NSF-IGERT Lecture, Department of Anthropology, University of Arizona, Tucson.
- 2005 Visiting Professor, Department of Earth and Planetary Sciences, University of New Mexico, Albuquerque. Fall Semester 2005

- 2004 Older Than You Thought: 4000 Year Old Maize and Squash in the U.S. Southwest. Invited Lecture, Department of Anthropological Science, Stanford University.
- 2002 Archaeometry, Lithic Technology and Revising Prehistory: The Southwest Archaeological Obsidian Project. Mamie Kleberg Endowment Invited Lecturer, Department of Anthropology, University of Nevada, Reno.
- 2002 Symbol, Style, Cultural Identity and the Pre-Classic Hohokam: New Directions from Materials Science and Lithic Technology. Andrew Mellon Foundation Lecture, Stanford University.
- 1999 The Southwest Archaeological Obsidian Project: Inferences for Archaeological Geology, Group Interaction and Ethnic Identity. Institute of Archaeology, University College, London.
- 1999 Non-Destructive Energy-Dispersive XRF and the Southwest Archaeological Obsidian Project. Departmental Seminar, Department of Materials Science and Engineering, UC, Berkeley.
- 1997 Gamma Rays, X-Rays and Stone Tools: The State of Archaeometry and Stone in the '90s. Archaeometry Colloquium, Department of Anthropology, University of Arizona March 10, 1997.
- 1997 New Concepts of Social Process in the Archaic through Hohokam Periods of the Southern Southwest: Inferences from the Southwest Archaeological Obsidian Project. Presented to the Arizona Archaeological and Historical Society, June 16, 1997.
- 1997 The Late Archaic/Early Agriculture Transition in the Southwest: Hope from McEuen Cave, Arizona. Archaeological Research Facility, University of California, Berkeley.
- 1996 The Southwest Archaeological Obsidian Project After 10 Years. *Emil Haury Memorial Lecture Series*. Arizona State Museum, University of Arizona.
- 1995 Ishi Was Not Necessarily the Last Yahi: Inferences from Lithic Technology, Ethnohistory. Stanford University Archaeological Fellowship Lecture.
- 1991 The Lowie Museum and Archaeological Research: History and Potential. Department Forum Lecture, Department of Sociology/Anthropology, California State University, Bakersfield.
- 1991 Ishi: Lithic Technology and the Yahi Yana. Department Forum Lecture, Department of Anthropology, California State University, Chico.

## **SCHOLARLY EDITORSHIP**

- 2005-2013, Associate Editor, *Geoarchaeology*, Wiley-Interscience, New York.
- Editor Emeritus, *Archaeometry*, Oxford University/Blackwell Publishing. 2000-2006

1991-1993 Associate Editor, *International Association for Obsidian Studies Newsletter*.

### **PROFESSIONAL COMMITTEE/ORGANIZATION WORK**

2005-2008, National Science Foundation, Archaeometry Panel

1992-2000, Vice President for Intersociety Relations, *Society for Archaeological Sciences*.

Program Committee, Society for American Archaeology 61st Annual Meeting, New Orleans 1996.

President (1993-1994), *International Association for Obsidian Studies*, Vice President 1992-1993.

### **Selected Campus/University Committee Work**

2008, Acting Chair, Department of Anthropology, University of California, Berkeley.

2005-2010, Faculty Advisor for Graduate Student Instructor Affairs, Department of Anthropology, UCB.

2005-2011, Ad Hoc Academic Senate Committee for the Restoration and Seismic Upgrade of the Hearst Gym Complex, University of California, Berkeley. Catherine Koshland, Vice-Provost for Academic Planning and Facilities, Chair.

2004-2005, UC Mexus-CONACYT Board Member (granting body for UC and Mexico's CONACYT).

1995-2004, *Classics in California Anthropology* Publications Committee, Phoebe Hearst Museum of Anthropology

1997-2006, Chair, Equipment (originally Computer) Committee, Archaeological Research Facility, University of California, Berkeley.

Chair (1994-1995), Advisory Committee, Archaeological Research Facility, University of California, Berkeley.

1993-1994 Member, International Search Committee, Director, Phoebe Hearst Museum of Anthropology.

1992-1993 Chair, Search Committee, NAGPRA Staff Search. Phoebe Hearst Museum of Anthropology.

1992-1993 Hearst Museum Capital Campaign Program Committee Member.

1992-1994 Ad Hoc NAGPRA Repatriation Committee, Office of Research and Graduate Studies.

### **Selected Public Presentations and Service**

2001 *Ishi the Last Yahi*. NPR's Living on Earth Show. Interviewed in response to my American Anthropologist paper on Ishi's stone tool technology and his ambiguous cultural affiliation.

- 2000 Scientific American Frontiers, with Alan Alda “Life’s Really Big Questions,” PBS show hosted by Alan Alda – interviewed expert on “Hand Made Humans”.
- 1999 *The 12<sup>th</sup> Century American Southwest*. KQED (San Francisco NPR). Radio talk interview with Michael Krasny (host), Judith Habicht-Mauche (UCSC), and Steve Lekson (CU).

## **MUSEUM AND COLLECTIONS RESEARCH**

### **Administration and Curation**

1990-2004 Research Archaeologist, Phoebe Hearst Museum of Anthropology. Advisory responsibility for the administration and direction of curation and research in the archaeological collections including funding, contracts, personnel, public outreach and student participation.

1997-2004 Instituted and direct the Southwest Archaeology Project, a graduate and undergraduate student re-housing and recuration of the U.S. Southwest and Mexican Northwest collections. Part of ongoing research and preparation for major exhibit that was to be exhibited in Fall 2006: *Pothunters, Geographers, and Archaeologists: 100 Years of Southwest Archaeology at Berkeley*.

1991-1997 Instituted and directed the California Archaeology Project, a student intern (over 50 students) project re-housing and curating the extensive California archaeological collections. Includes the direction of a Graduate Student Researcher (GSR) and undergraduate anthropology majors in semester long projects rehousing the collection with campus and off-campus funding.

1992-1996 Organized and directed the creation of the original museum web site and finding guide for the Archaeological Archives in the Phoebe Hearst Museum of Anthropology.

### **Museum Research Projects**

Kumeyaay Ceramics, Technology, and Social Process. Long term research project in collaboration with Steven Lucas-Pfingst (Kumeyaay) focused on ceramic technology and the relationship of the Kumeyaay to the greater American Southwest. Included a major exhibit on ceramic technology using museum collections and a volume in the *Classics in California Anthropology* series published by University of California Press (2004).

Ishi Lithic Technology Project: Technological and ethnohistoric analysis of Ishi's stone tool technology, and proto-historic archaeological collections in the upper Sacramento Valley. Includes a redesign of the permanent Ishi exhibit in the main gallery based on the results, and publication in *American Anthropologist*.

Northern Mexico Archaeological Obsidian Project: Geochemical analysis of the Donald Brand, Richard Brooks, and Charles DiPeso archaeological obsidian recovered from Chihuahua, Sonora, and Durango. This includes grant proposals with INAH to explore probable source localities in the Sierra Madre Occidental of Sonora and Chihuahua.

Southwest Archaeological Obsidian Project: Analysis of archaeological obsidian in Coconino Plateau contexts in the Hearst Museum collection.

### **Exhibit Curation (catalogs listed under publications)**

2002 *Sites of Discovery: Art and Archaeology in 19<sup>th</sup>-Century Photographs of the American Southwest*. Co-curated with Kathleen L. Butler. Bancroft Library, University of California, Berkeley, May 7-July 31, 2002.

1999 *Obsidian: Jewels of the Archaeological Record*. Co-curated with James Bayman, a permanent exhibit at Casa Grande Ruins National Monument, Casa Grande, Arizona. Funded by a grant from the Southwest Parks and Monuments Association.

1998 *Kumeyaay Pottery, Mobility, and the American Southwest in Native California*. A visual representation of the upcoming volume: *The Early Ethnography of the Kumeyaay*. In *Classics in California Anthropology*, Phoebe Hearst Museum of Anthropology, University of California, Berkeley. Exhibit featured February 28, 1998-January 31, 1999.

1994 *Little Black Rocks in the Desert: Prehistoric Obsidian in the American Southwest*. An exhibit documenting 10 years of field and laboratory research on archaeological obsidian in the American Southwest. Phoebe Hearst Museum of Anthropology, University of California, March 14-September 1, 1994.

1992 *Ishi's Stone Tool Technology*. An exhibit depicting the stages of lithic production and relationship between Ishi's arrowpoint technology and the late prehistoric and protohistoric Yahi/Yana. Phoebe Hearst Museum of Anthropology, University of California.

1991 *Tipai Mobility and Ceramics*. An exhibit depicting hunter-gatherer storage and ceramic vessels in southeastern California and northern Baja California. Lowie Museum of Anthropology, UC, Berkeley (April 23 to August 15, 1991).

1989 *Stone Tool Production at Soda Springs*. A permanent exhibit depicting the production of Late Archaic period (Elko Corner-notched) projectile points at Soda Springs, Mojave Desert, California. Desert Studies Consortium, Soda Springs, San Bernardino, California.

1986 *Sources of Archaeological Obsidian in the American Southwest*. Designed exhibit depicting doctoral research in the Museum of Anthropology, Arizona State University, October 1986 through January 1987.

1986 *Picacho: A Hunting and Gathering Lifeway*. Museum of Anthropology, Arizona State University. Assembled and coordinated lithic technology portion of exhibit. Sponsored by the Bureau of Reclamation and the Office of Cultural Resource Management, Arizona State University.

1982 *Ethnogeology in San Diego Prehistory*. Created and coordinated traveling exhibit on the uses of stone raw materials by Archaic and later hunter-gathers in San Diego County. Exhibit circulated within the San Diego City and County Libraries.

### **ARCHAEOLOGICAL RESEARCH PROJECT DIRECTION AND CONSULTATION**

1990-2011 Director, Berkeley Archaeological XRF Laboratory. Directed external, museum, faculty and student projects in archaeological geochemistry focusing mainly on obsidian studies of the Americas <<http://www.swxrflab.net/>>. National Science Foundation sponsored laboratory 2009-2012.

1996-present Project Co-Director, *Investigations at McEuen Cave, Arizona: Early Agriculture and Bow Technology*. Continuing research and excavation of rockshelter in the BLM Fishhook Wilderness, Gila Mountains, Arizona. Funded by National Science Foundation, the Stahl Endowment for Archaeological Research, and the U.S. Department of the Interior.

1998-present Northwest Mexico Archaeological Obsidian Project. Direct long-term areal survey of northeastern Sonora and northern Chihuahua sources of archaeological obsidian. Cooperative project between my lab, INAH, Mexico, the Cerro Juanaqueña project of the University of Texas, San Antonio, the El Paso Archaeological Society, and the University of Montana.

1998 *Central Honduras Archaeological Obsidian Project*. Field and lab consultant for the discovery, field geological mapping, collection, and analytical studies of archaeological sources of obsidian in Honduras. Funded by a grant from the Wenner-Gren Foundation to Rosemary Joyce.

1993-1997 Co-PI with Eric Ritter, and obsidian analyst for *Investigations of Adaptation and Change among Prehistoric Cultures in the Bahía de los Angeles, Baja California Norte*. Survey project under INAH permit in this littoral region of Baja California.

1993-94 Obsidian Production and Distribution, Proyecto Arte Rupestre, Baja California Sur, Instituto Nacional de Antropología e Historia (INAH), Mexico. Field and laboratory consultant for the survey, mapping, and characterization of the Valle del Azufre (Tres Virgenes volcanic field) obsidian source, Baja California Sur.

1988-1990 Senior Archaeologist with Brian Mooney Associates, 9903-B Businesspark Ave., San Diego, CA 92131. Responsible for all aspects of archaeological project direction and implementation in California and the Desert West.

1988-1989 Flaked Lithic and Statistical Analysis Consultant for Dames & Moore. East Cronise Lake Data Recovery Project, Mojave Desert, California.

1987-1988 Staff Archaeologist with Dames & Moore Inc. 9665 Chesapeake Dr. # 360, San Diego, CA 92123. Responsible for the management and direction of US Sprint Survey and Data Recovery Projects in California, Oregon, and Nevada.

1985-1987 Performed an archaeological obsidian x-ray fluorescence project in the Departments of Chemistry and Anthropology. This included the compilation of an obsidian source data library for the Greater Southwest (Arizona, New Mexico, Chihuahua, Sonora and Baja California) as well as routine analysis of archaeological obsidian from research and CRM projects.

1986 Research Associate with Sylvia Gaines: Main Frame IBM Graphics and Mapping Software for Archaeology, Department of Anthropology, Arizona State University.

1986 Research Associate with Glen E. Rice: Sources of Hohokam Classic Period Obsidian. Department of Anthropology, Arizona State University.

1984-1985 Research Associate/Lithic Consultant: Picacho Reservoir Archaic Project, Tucson Aqueduct Segment of the Central Arizona Project. Office of Cultural Resource Management, Department of Anthropology, Arizona State University.



1982-1983 Staff Archaeologist/Principal Investigator for the Mountain Springs to Sand Hills portion of APS/SDG&E Southwest Powerlink Excavation and Data Recovery Project, Imperial County, California. Wirth Environmental, Division of Dames and Moore, San Diego.

1981-1982 Senior Archaeologist/Principal Investigator for the Southwest Powerlink Survey Project, Imperial County, California. Cultural Systems Research, Inc. Lowell Bean, President.

1979-1981 Associate Archaeologist, Cultural Resource Management Center, Department of Anthropology, San Diego State University.

1980 Excavation Crew Supervisor, 4SDi799, Caltrans/San Diego State University.

1980 Laboratory Supervisor, 4SDi799, Caltrans/San Diego State University.

1980 Crew Supervisor (Associate Archaeologist) U. S. Forest Service Laguna Mountain Recreation Area Cultural Resource Survey, San Diego County, California. Archaeological Systems Management, San Diego.

1980 Crew Member, Knowth Neolithic Tomb excavations and Wood Quay Viking Settlement excavations, Ireland. Office of Public Works and University College, Dublin, Ireland.

1979 Director of regional survey sample in Cuyamaca Rancho State Park, San Diego County, California.

## **PUBLICATIONS**

### **Books and Monographs**

2011 **Shackley, M.S. (Ed.)** *X-Ray Fluorescence Spectrometry (XRF) in Geoarchaeology*. Springer, New York.

With major contributory chapters:

- Preface and Acknowledgements
- X-Ray Fluorescence Spectrometry in a 21<sup>st</sup> Century Archaeology, pp. 1-6.
- An Introduction to X-Ray Fluorescence Spectrometry for Archaeologists, pp. 7-44.
- M.K. Davis, T.L. Jackson, **M.S. Shackley**, T. Teague, and J.H. Hampel, Factors Affecting the Energy-Dispersive X-Ray Fluorescence Analysis of Archaeological Obsidian, with a new introduction by M.S. Shackley, pp. 45-64.
- Glossary, pp. 207-226.

2005 **Shackley, M.S.** *OBSIDIAN: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.

2004 **Shackley, M.S. (Ed.)** *The Early Ethnography of the Kumeyaay: E.W. Gifford, Leslie Spier, and T.T. Waterman*. **Classics in California Anthropology**, Phoebe Hearst

- Museum of Anthropology. University of California Press. With Steven Lucas-Pfingst, Kumeyaay, Lucas Ranch.
- 1998 **Shackley, M.S. (Ed.)** *Archaeological Obsidian Studies: Method and Theory*. Advances in Archaeological and Museum Sciences 3, Springer/Plenum Publishing Corporation, New York.
- With Major Contributory Chapters
- **Shackley, M.S.** *Current Issues and Future Directions in Archaeological Volcanic Glass Studies: An Introduction*, pp. 1-14.
  - **Shackley, M.S.**, *Intrasource Chemical Variability and Secondary Depositional Processes in Sources of Archaeological Obsidian: Lessons from the American Southwest*, pp. 83-102.
  - K. Davis, T. Jackson, **M.S. Shackley**, T. Teague, and J. Hampel: *Factors Affecting the Energy-Dispersive X-Ray Fluorescence Analysis of Archaeological Obsidian*, pp. 159-180.
- 1986 F.E. Bayham, D.H. Morris, and **M.S. Shackley** (Eds.): *Prehistoric Hunter-Gatherers of South Central Arizona: The Picacho Reservoir Archaic Project*. Anthropological Field Studies 13. Arizona State University, Tempe.
- With Major Contributory Chapters
- *Mobility and Lithic Technology at the Picacho Reservoir Archaic Complex*, pp. 109-158.
  - *Obsidian Geochemistry and Lithic Technology: Inferences for Archaic Hunter-Gatherer Procurement Ranges*, pp. 171-190.
  - F.E. Bayham and **M.S. Shackley**: *Regional Patterns of Foraging and Mobility: Incongruous Expectations from the Archaeofaunal and Lithic Evidence*, pp. 359-382.
- 1984 *Archaeological Investigations in the Western Colorado Desert: A Socioecological Approach* (3 volumes). Volume 1 published by Coyote Press, Salinas, California.
- 1981 *Late Prehistoric Exchange Network Analysis in Carrizo Gorge and the Far Southwest*. Coyote Press, Salinas, California. ISBN 1-55567-016-4.

### **Peer Reviewed Journal Articles and Contributed Essays to Edited Volumes**

- 2022 Morgan, G.S., D.J. Koning, **M.S. Shackley**, D.W. Love, K.M. Hobbs, and A.P. Jochems: Early Pleistocene (Late Blancan) vertebrates from Simon Canyon, Socorro County, Central New Mexico. *New Mexico Geological Society Guidebook, 72nd Fall Field Conference*, pp. 265-279.
- 2022 Zena, A.G., A.I. Duff, A. Melesse, J.A. Wolff, A. Beladado, and **M.S. Shackley**: New dates for Megalithic Stele Monuments of Gedeo, South Ethiopia. *Journal of African Archaeology* 20:57-82.
- 2021 Niespolo, E.M., WoldeGabriel, G., Hart, W.K., Renne, P.R., Sharp, W.D., **Shackley, M.S.**, Ambrose, S., Asfaw, B., Beyene, Y., Brasil, M.F., Carlson, J.P., Sahle, Y., and White, T.D.: Integrative Geochronology Calibrates the Middle and Late Stone Ages of Ethiopia's Afar Rift. *Proceedings of the National Academy of Science*, 118 No. 50:e2116329118.
- 2021 **Shackley, M.S.**, Distribution and sources of secondary deposit archaeological obsidian in Rio Grande alluvium, New Mexico, USA. *Geoarchaeology* 36:808-825.
- 2021 Dolan, S.A., and **M.S. Shackley**: Pachuca Obsidian Blades from the U.S. Southwest: Implications for Mesoamerican Connections and Coronado's Mexican Indian Allies. *American Antiquity* 86: 773-779.
- 2021 Doronicheva, E.V., **M.S. Shackley**, and M.A. Kulkova: Procurement and exploitation of lithic raw materials in the Middle Palaeolithic of the North-Central Caucasus (Preliminary Results. In Lengyel, G, Wilczynski J., De la Torre, M.S., Mangado, X. and Fulola, J.M. (Eds.) *Studies on the Palaeolithic of Western Eurasia*, pp. 187-204. Oxford: Archaeopress.
- 2021 Zena, A.G., A.I. Duff, A. Melesse, J.A. Wolff, A. Beldados, and **M.S. Shackley**: New dates for Megalithic Stele monuments of Gedeo, South Ethiopia. *Journal of African Archaeology* 2021:1-26.
- 2021 Carpenter, J. Sánchez, G., Hernández-Expinoza, O., León-Romero, C., Krug, A.R., Abrego-Rivas, A., **Shackley, M.S.**, Ferguson, J., and Pailes, M.: Recent research in the Sahuaripa region of Sonora, Mexico. *Kiva* 87:461-485.
- 2020 Dolan, S., J. Berryman, and **M.S. Shackley**, New Insights into the Use of Obsidian at Cottonwood Springs Pueblo (LA 175), Doña Ana County, New Mexico. *International Association for Obsidian Studies Bulletin* 65:8-21.
- 2020 Mitchell, D.R., J.B. Mabry, N.M. Tagüeña, G. Huckleberry, R.C. Brusca, and **M.S. Shackley**, Prehistoric adaptation, identity, and interaction along the northern Gulf of California. *California Archaeology* 12:163-195.
- 2020 Moore, J.L., E. Blinman, and **M.S. Shackley**, Temporal variations in obsidian procurement in the Northern Rio Grande and its implications for obsidian movement into the San Juan Area. *American Antiquity* 85:152-170.

- 2020 Vierra, B.J., N. Chapin, C.M. Stevenson, and **M.S. Shackley**, Another look at expedient technologies, sedentism, and the bow and arrow. *Kiva* 86:482-501.
- 2020 Dronicheva, E.V., Nedomolkin, A.G., **Shackley, M.S.**, Korzinova, A.S., Tselmovitch, V.A., Nesmeyanov, S.A., and Voeykova, O.A., Raw material strategies in the Middle Paleolithic. Data from Saradj-Chuko grotto. In Dronicheva, E.V., Goovanova, L.V., Dronichev, V.B. (Eds.), *Saradj-Chuko in the Elvrus Region*, pp. 243-297. St. Petersburg, Russia (in Russian).
- 2020 Doronicheva, E., L. Golovanova, V. Doronichev, A. Nedomolkin, I. Shirobokov, **M.S. Shackley**, A. Petrov, and F. Maksimov, Psytuaje rockshelter - a new site documenting the final of Epipalaeolithic in the north-central Caucasus, Russia. *Journal of Archaeological Science: Reports* 23:157-165.
- 2019 **Shackley, M.S.** The Patayan and Hohokam: A View from Alta and Baja California. *Journal of Arizona Archaeology* 6:83-98.
- 2019 **Shackley, M.S.** Natural and Cultural History of the Obsidian Butte Source, Imperial County, California. *California Archaeology* 11(1):21-43.
- 2019 Kwoka, J.J., and **M.S. Shackley**, Technological analysis and source provenance of obsidian artifacts from a Sun Pyramid substructure cache, Teotihuacan, Mexico. *Latin American Antiquity* 30:205-210.
- 2019 **Shackley, M.S.**, A newly discovered source of archaeological obsidian near Duncan, Arizona and its compositional relationship to the Cow Canyon source, eastern Arizona: The value of minor sources. *IAOS Bulletin* 61: 15-23.
- 2019 **Shackley, M.S.**, E.V. Doronicheva, V.B. Dronichev L.V. Golovanova, S.A. Nesmeyanov, O.A. Voeykova, and A.A. Muriy, The Zayukovo (Baksan) archaeological obsidian source, Greater Caucasus, Russia. *IAOS Bulletin* 60: 11-23.
- 2019 Doronicheva, E.V., L.V. Goloanova, V.B. Doronichev, **M.S. Shackley**, and A.G. Nedomolkin, New data about exploitation of the Zayukovo (Baksan) obsidian source in Northern Caucasus during the Paleolithic. *Journal of Archaeological Science: Reports* 23:157-165.
- 2018 Dolan, S.G., **M.S. Shackley**, D.G. Wyckoff, and C.E. Skinner, Long-Distance Conveyance of California Obsidian at the Hayhurst Lithic Cache Site (34ML168) in Oklahoma. *Plains Anthropologist* 63:279-297.
- 2018 Glover, J.B., Z.X. Hruby, D. Rissolo, J.W. Ball, M.D. Glascock, and **M.S. Shackley**, Interregional Interaction in Terminal Classic Yucatan: Recent Obsidian and Ceramic Data from Vista Alegre, Quintana Roo, Mexico. *Latin American Antiquity* 29:475-494.
- 2018 **Shackley, M.S.**, L.E. Morgan, and D. Pyle, Elemental, isotopic, and geochronological variability in Mogollon-Datil Volcanic Province archaeological obsidian, southwestern USA: solving issues of inter-source discrimination. *Geoarchaeology* 33:486-497.

- 2018 Duff, A.I., A. Zena, A. Melesse, J.A. Wolff, O.K. Neill, and **M.S. Shackley**, Recent research on megalithic stele sites of the Gadeo Zone, southern Ethiopia. *Journal of Archaeological Science: Reports* 19:856-863.
- 2018 **Shackley, M.S.** X-Ray Fluorescence (XRF): Applications in Archaeology. In: Smith C. (eds) *Encyclopedia of Global Archaeology*. Springer, New York.
- 2018 Hu, Di, and **M.S. Shackley**, ED-XRF analysis of obsidian artifacts from Yanawilka, a settlement of transplanted laborers (*mitmaqkuna*), and implications for Inca imperialism. *Journal of Archaeological Science: Reports* 18:213-221.
- 2018 **Shackley, M.S.**, B.B. Huckell, and L.W. Huckell: The 4th Millennium B.P. adoption of maize and domesticated cucurbits in the North American Southwest: the assemblage from McEuen Cave, southeastern Arizona. *American Antiquity*, in review.
- 2017 Dolan, S.G., J. Berryman, and **M.S. Shackley**, Source characterization of obsidian artifacts from six sites in the Jornada Mogollon region of southern New Mexico. *International Association for Obsidian Studies Bulletin* 58:38-44.
- 2017 Panich, L.M., **M.S. Shackley**, and A. Porcayo Michelini, A reassessment of archaeological obsidian from southern Alta California, and northern Baja California. *California Archaeology* 9:53-77.
- 2017 **Shackley, M.S.** and Y. Sahle, Geochemical characterization of four Quaternary obsidian sources and provenance of obsidian artifacts from the Middle Stone Age site of Gademotta, Main Ethiopian Rift. *Geoarchaeology* 32:302-310.
- 2017 **Shackley, M.S.**, Lithics (Archaeological Stone). In *Encyclopedia of Geoarchaeology*, edited by A.S. Gilbert, , pp. 476-486. Springer, New York.
- 2017 **Shackley, M.S.**, X-Ray fluorescence (XRF) spectrometry in Geoarchaeology. In *Encyclopedia of Geoarchaeology*, edited by A.S. Gilbert, , pp. 1025-1029. Springer, New York.
- 2017 Dolan, S.G., M.E. Whalen, P.E. Minnis, and **M.S. Shackley**, Obsidian in the Casas Grandes world: procurement, exchange, and interaction in Chihuahua, Mexico, CE 1200-1450. *Journal of Archaeological Science Reports*: 11:555-567.
- 2017 Dolan, S.G., and **M.S. Shackley**, Is there mahogany obsidian in northeastern Sonora, Mexico? *IAOS Bulletin* 56:11-17.
- 2017 Dolan, S.G., M.R. Miller, **M.S. Shackley**, and K. Corl, El Paso Phase obsidian procurement in southern New Mexico: implications for Jornada Mogollon regional interaction and exchange. *Kiva*: 267-291.
- 2016 **Shackley, M.S.**, F. Goff, and S.G. Dolan: Geologic origin of the source of Bearhead rhyolite (Paliza Canyon) obsidian, Jemez Mountains, Northern New Mexico. *New Mexico Geology* 38:52-62.

- 2016 Doronicheva, E.V., M.A. Kulkova, and **M.S. Shackley**, Raw material exploitation, transport, and mobility in the Northern Caucasus Eastern Micoquian. *PaleoAnthropology* 2016:1-45.
- 2016 Dolan, S.G., J. Berryman, and **M.S. Shackley**, The source of an obsidian Eden point from Sierra County, New Mexico. *PaleoAmerica* 2:48-51.
- 2014 Kibler, K.W., H.R. Hinojosa-Prieto, **M.S. Shackley**, and H.J. Hinojosa-García, The Selene Obsidian Source (Formerly Sonora Unknown B) of the Upper Rio Bavispe Basin, Sonora, Mexico. *Kiva* 80: 168-192.
- 2014 **Shackley, M.S.**, The Paliza Canyon Source of Archaeological Obsidian in the Southern Jemez Mountains, Northern New Mexico. *IAOS Bulletin* 50: 6-9.
- 2014 Doronicheva, E.V., **Shackley M.S.** Obsidian exploitation strategies in the Middle and Upper Paleolithic of the Northern Caucasus: New data from Mezmaiskaya cave. *PaleoAnthropology* 2014:565-585.
- 2013 Doronicheva, E.V., M.A. Kulkova, and **M.S. Shackley**, Exploitation of lithic raw material in the northwestern Caucasus Upper Paleolithic. *Archaeology, Ethnology and Anthropology of Eurasia* 41/2:40-53.
- 2013 Boulanger, M.T., M.D. Glascock, **M.S. Shackley**, and C. Skinner, Likely Source Attribution for a Paleoindian Obsidian Graver from Northwest Louisiana. *IAOS Bulletin* 49:4-7
- 2013 **Shackley, M.S.**, The Geochemistry and Archaeological Petrology of Volcanic Raw Materials in Northern New Mexico: Obsidian and Dacite Sources in Upland and Lowland Contexts. In B.J. Vierra (Ed.), *From Mountain Top to Valley Bottom: Understanding Past Land Use in the Northern Rio Grande Valley, New Mexico*, pp. 17-32. University of Utah Press, Salt Lake City.
- 2013 Hamilton, M.J., B. Buchanan, B.B. Huckell, V.T. Holliday, **M.S. Shackley**, and M. E. Hill: Clovis Paleoecology and Lithic Technology in the Central Rio Grande Rift Region, New Mexico. *American Antiquity* 78(2):248-265.
- 2013 Mills, B.J., J.J. Clark, M.A. Peeples, W.R. Haas, Jr., J.M. Roberts, Jr., J.B. Hill, D.L. Huntley, L. Borck, R.L. Breiger, A. Clauset, and **M.S. Shackley**, Transformation of Social Networks in the Late Pre-Hispanic US Southwest. *PNAS* 110:5785-5790.
- 2012 Vierra, B.J., M.A. Jodry, **M. Steven Shackley**, and M. J. Dille, Late Paleoindian and Early Archaic Foragers in the Northern Southwest. In *From the Pleistocene to the Holocene: Human Organization and Cultural Transformations in Prehistoric North America*, edited by C.B. Bousman, and B.J. Vierra, pp. 171-196. Texas A&M University Press, College Station.

- 2012 Huckell, B.B., **M.S. Shackley**, M.J. O'Brien, and C.W. Merriman, Folsom obsidian procurement and use at the Boca Negra Wash Site, New Mexico. *Current Research in the Pleistocene* 28:49-52.
- 2012 Fertelmes, C.M., D.R. Abbott, and **M.S. Shackley**, Obsidian Source Characterization at Las Colinas: Shifting Exchange Patterns during the Hohokam Sedentary-Classic Transition. *Kiva* 77:281-311.
- 2012 **Shackley, M.S.**, Thoughts on natural and manufactured glass studies in a 21<sup>st</sup> century archaeology. In I. Liritzis and C.M. Stevenson (Eds.) *The Dating and Provenance of Volcanic and Ancient Glass*. University of New Mexico Press, Albuquerque.
- 2012 Duff, A.I., J.M. Moss, T.C. Windes, J. Kantner, and **M.S. Shackley** Patterning in Procurement of Obsidian in Chaco Canyon and in Chaco-era Communities in New Mexico as Revealed by X-Ray Fluorescence. *Journal of Archaeological Science*, 39:2995-3007.
- 2012 Panich, L.M., A. Porcayo, M., and **M.S. Shackley**, Obsidian Sources of Northern Baja California: The Known and the Unknown. *California Archaeology* 4(2):183-200.
- 2012 Ryan, S.L., and **M.S. Shackley**, Where did it come from? Source analysis of obsidian found at the Yuma Wash Site. *Archaeology Southwest* 26:9-10.
- 2012 Ryan, S.L., and **M.S. Shackley**, Portable XRF analysis of a special collection from Los Morteros. *Archaeology Southwest* 26:10.
- 2011 **Shackley, M.S.**, Sources of Archaeological Dacite in Northern New Mexico. *Journal of Archaeological Science* 38:1001-1007.
- 2011 Arakawa, F., S.G. Ortman, **M.S. Shackley**, and A.I. Duff, Obsidian Evidence of Interaction and Migration from the Mesa Verde region, Southwest Colorado. *American Antiquity* 76: 773-795.
- 2011 Martynec, R., Davis, R., and **M.S. Shackley**, The Los Sitios del Agua Obsidian Source (Formerly AZ Unknown A) and Recent Archaeological Investigations Along the Rio Sonoyta, Northern Sonora. *Kiva* 76(4):413-429.
- 2011 Jones, R.M., and **M.S. Shackley**, Tracing the Movement of Mule Creek Obsidian. *Archaeology Southwest* 24:8-9.
- 2010 **Shackley, M.S.**, Is there reliability and validity in portable x-ray fluorescence spectrometry (PXRF)? *The SAA Archaeological Record*, Nov. 2010, pp. 17-18&20.
- 2010 **Shackley, M.S.**, Roger Curtis Green (1932-2009) Obsidian Studies Pioneer. *IAOS Bulletin* 44:4-6.
- 2010 Johnson, E., V.T. Holliday, and **M.S. Shackley**, Updated sourcing of Paleoindian obsidian on the Southern High Plains. *Current Research in the Pleistocene* 27:103-104.
- 2010 Sharmer, L., **Shackley, M.S.**, and Harding, A.K., A potential health risk from lead in used consumer products in the United States. *Journal of Environmental Health* 73:8-12.

- 2010 Golovanova, L.V., Doronichev, V.B., Cleghorn, N.E., Koulkova, M.A., Sapelko, V.S., and **Shackley, M.S.**, Significance of Ecological Factors in the Middle to Upper Paleolithic Transition. *Current Anthropology* 51: 655-691.
- 2010 **Shackley, M.S.**, Thoughts and Inference on Prehistoric Obsidian Source Exploitation in the Pacific Rim and Beyond. In *Crossing the Straits: Prehistoric Obsidian Source Exploitation in the North Pacific Rim* edited by Yaroslav V. Kuzmin and Michael D. Glascock, pp. 219-223. British Archaeological Records (BAR) International Series 2152.
- 2010 Poupeau, G., Le Bourdonnec, F.X., Carter, T., Delarue, S., **Shackley, M.S.**, Barrat, J-A., Dubernet, S., Moretto, P., Calligaro, T., Milić, M., and Kobayashi, K., The use of SEM-EDS, PIXE, and EDXRF for obsidian provenance studies in the Near East: a case study from Neolithic Çatalhöyük (central Anatolia). *Journal of Archaeological Science*, 37:2705-2720.
- 2010 Taliaferro, M.A., Schriever, B.A., and **M.S. Shackley** Obsidian Procurement, Least Cost Path Analysis, and Social Interaction in the Mimbres Area of Southwestern New Mexico. *Journal of Archaeological Science* 37:536-548.
- 2010 Dillian, C. D., Bello, C. A., and **Shackley, M.S.**, Long-distance exchange of obsidian in the Mid-Atlantic United States. In C. Dillian, and C. White, Eds., *Trade and Exchange: Archaeological Studies from Prehistory and History*, pp. 17-35. New York: Springer.
- 2009 **Shackley, M.S.**, The Topaz Basin Archaeological Obsidian Source in the Transition Zone of Central Arizona. *Geoarchaeology* 24(3): 336-347.
- 2009 **Shackley, M.S.** Two Newly Discovered Sources of Archaeological Obsidian in the Southwest: Archaeological and Social Implications. *Kiva* 74(3):269-280.
- 2009 Hamilton, M.J., B.B. Huckell, and **M.S. Shackley**, Clovis obsidian sources in the central Rio Grande Rift Region of New Mexico. *Current Research in the Pleistocene* 26:62-65.
- 2009 LeTourneau, P.D., and **M.S. Shackley**, Geochemistry of Paleoindian and Early-Archaic obsidian artifacts from New Mexico and Colorado. *Current Research in the Pleistocene* 26:81-84.
- 2008 **Shackley, M.S.** (solicited chapter): Archaeological Petrology and the Archaeometry of Lithic Materials. 50<sup>th</sup> Anniversary Volume, edited by A.M. Pollard. *Archaeometry* 50: 194-215.
- 2008 Huckell, B.B., V.T. Holliday, M. Hamilton, C. Sinkovec, C. Merriman, **M.S. Shackley**, and R.H. Weber, The Mockingbird Gap Clovis Site: 2007 Investigations. *Current Research in the Pleistocene* 25:95-97.
- 2008 Carter, T., S. Dubernet, R. King, F-X. Le B., M. Milić, G. Poupeau, and **M. S. Shackley**, Eastern Anatolian Obsidians at Çatalhöyük and the Reconfiguration of Regional Interaction in the Early Ceramic Neolithic. *Antiquity* 82:900-909.



- 2007 **Shackley, M.S.**: Sources of Obsidian at the Murray Springs Clovis Site: A Semi-Quantitative X-Ray Fluorescence Analysis. In *Murray Springs: A Clovis Site with Multiple Activity Areas in the San Pedro Valley, Arizona*, edited by C.V. Haynes, Jr., and B.B. Huckell, pp. 250-254. Anthropological Papers of the University of Arizona 71, University of Arizona Press, Tucson.
- 2007 A. Negash, M. Alene, F.H. Brown, **M. S. Shackley**, and B.P. Nash: Geochemical Sources for the Terminal Pleistocene/Early Holocene Obsidian Artifacts of the Site of Beseka, Central Ethiopia. *Journal of Archaeological Science* **34**, 1205-1210.
- 2007 Tristan Carter and **M.S. Shackley**: Sourcing Obsidian from Neolithic Çatalöyük (Turkey) Using Energy-Dispersive X-Ray Fluorescence. *Archaeometry*, **49**, 437-454.
- 2007 N. Craig, R.J. Speakman, R.S. Popelka-Filcoff, M.D. Glascock, D.J. Robertson, **M.S. Shackley**, and M.S. Aldenderfer: Comparison of XRF and PXRF for analysis of archaeological obsidian from southern Perú. *Journal of Archaeological Science*, **34**, 2012-2024.
- 2006 A. Negash and **M.S. Shackley**: Geochemical provenance of obsidian artifacts from the Middle Stone Age site of Porc Epic, Ethiopia. *Archaeometry* 48:1-12.
- 2006 A. Negash, **M.S. Shackley**, and M. Alene: Source provenance of obsidian artifacts from the Early Stone Age (ESA) site of Melka Konture, Ethiopia. *Journal of Archaeological Science*, 33:1647-1650.
- 2006 **Shackley, M.S.**, Sources of obsidian from three sites in Baja California Sur: an Energy-Dispersive X-Ray Fluorescence (EDXRF) Analysis. In *El Yacimiento Arqueológico de El Ratón: una Cueva con Pinturas en la Sierra de San Francisco (Baja California Sur, México)*, edited by M.A. Petit i Medizabal, A. Rubio i Morra, pp. 111-117. Monograph 6, Seminari d'Estudis i Recerques Prehistòriques, University of Barcelona, Spain.
- 2006 C. Dillian, **M.S. Shackley**, and C. Bello: Long Distance Exchange? The Case of an Obsidian Projectile Point from the University of Pennsylvania Museum. *The Pennsylvania Archaeologist* 76(1).
- 2006 **Shackley, M.S.**, A Field of Dreams: From San Diego to Berkeley (Alumnus of the Year Essay). *Occasional Archaeology Papers (SOAP)* 1: 54-58. San Diego State University.
- 2005 **Shackley, M.S.**, Bull Creek (Formerly AZ Unknown A), Yavapai County, Western Arizona, USA. *International Association for Obsidian Studies Bulletin* 33: 4-7.
- 2004 R.A. Joyce, **M.S. Shackley**, K. McCandless, and R. Sheptak: Resultados Preliminares de una Investigación con EDXRF de Obsidiana de Puerto Escondido. In Memoria, VII Seminario de Antropología de Honduras "Dr. George Hasemann", pp. 115-130. Instituto Hondureño de Antropología e Historia, Honduras.
- 2004 with E.C. Scott, **M.S. Shackley**, et al. (1000+ authors): The Morphology of Steve. *Annals of Improbable Research*, July-August 2004.
- 2003 **Shackley, M.S.**, The Stone Technology of Ishi and the Yana. In *Ishi in Three Centuries*, edited by K. Kroeber and C. Kroeber, pp. 159-200. University of Nebraska Press, Lincoln.

- 2003 **Shackley, M.S.** *Foreword*. In *Siliceous Rocks and Prehistory: Bibliography on Geo-archaeological Approaches to Chert Sourcing and Prehistoric Exploitation*, by Christophe Delage. British Archaeological Reports International Series 1168. Oxford.
- 2002 A.W. Barker, C.E. Skinner, **M.S. Shackley**, M.D. Glascock, and J.D. Rogers: Mesoamerican Origin for an Obsidian Scraper from the Precolumbian Southeastern United States. *American Antiquity* 67(1):103-108.
- 2002 **Shackley, M.S.**, Precision versus Accuracy in the XRF Analysis of Archaeological Obsidian: Some Lessons for Archaeometry and Archaeology. In *Archaeometry 98, Proceedings of the 31<sup>st</sup> International Symposium, Budapest, April 26-May 3 1998*, edited by E. Jerem, and K.T. Biro, pp. 805-809. Archaeolingua Central European Series 1, British Archaeological Reports, Oxford.
- 2002 **Shackley, M.S.**, More Than Exchange: Preceramic through Ceramic Period Obsidian Studies in the Greater American Southwest. In *Geochemical Evidence for Long Distance Exchange*, edited by M.D. Glascock, pp. 53-108. Scientific Archaeology in the Third Millenium Series. Bergin and Garvey, Westport, Connecticut.
- 2002 Y.V. Kuzmin, V.K. Popov, M.D. Glascock, and **M.S. Shackley**: Sources of Archaeological Volcanic Glass in the Primorye (Maritime) Province, Russian Far East, *Archaeometry* **44**, 505-515.
- 2002 **M.S. Shackley** and C. Dillian: Thermal and Environmental Effects on Obsidian Geochemistry: Experimental and Archaeological Evidence. In *The Effects of Fire and Heat on Obsidian*, edited by J.M Loyd, T. M. Origer, and D.A. Fredrickson, pp. 117-134. Cultural Resources Publication, Anthropology-Fire History, U.S. Bureau of Land Management, Sacramento.
- 2001 **M.S. Shackley** and D. Tucker: Limited Procurement of Sand Tank Obsidian, Southwestern Arizona. *Kiva* 66(3):345-374.
- 2001 **Shackley, M.S.**, Chronology, Stratigraphy, and Dating Methods. In *International Encyclopedia of the Social and Behavioral Sciences*, edited by N.J. Smelser and P.B. Baltes, pp. 1789-1796. Pergamon, Oxford.
- 2000 **Shackley, M.S.**, The Stone Technology of Ishi and the Yana of North Central California: Inferences for Hunter-Gatherer Cultural Identity in Historic California. *American Anthropologist*:102(4):693-712.
- 2000 Popov, V.K., **M.S. Shackley**, M.D. Glascock, and Y.M. Kuzmin Geochemistry of Volcanic Glass from Geological Sources and Archaeological Sites in Primorye. In *Volcanic Glasses of the Russian Far East: Geological and Archaeological Aspects*, edited by Y.V. Kuzmin, and V.K. Popov, pp. 44-82. Geological Institute, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok.
- 2000 Y.V. Kuzmin, V.K. Popov, A.V. Tabarev, and M.D. Glascock, and **M.S. Shackley**: The Sources of Archaeological Obsidian in Primorye and Its Distribution in the Stone Age Cultures. In *Volcanic Glasses of the Russian Far East: Geological and Archaeological Aspects*, edited by Y.V. Kuzmin, and V.K. Popov, pp. 83-87. Geological Institute, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok.

- 2000 M.D. Glascock, **M.S. Shackley**, Y.V. Kuzmin, V.K. Popov, S.V. Gorbunov, A.A. Vasilevsky, O.A. Shubina, V.I. Zaitsev, and H. Sato Obsidian Geochemistry from Archaeological Sites of the Sakhalin and Obsidian Sources,. In *Volcanic Glasses of the Russian Far East: Geological and Archaeological Aspects*, edited by Y.V. Kuzmin, and V.K. Popov, pp. 88-106. Geological Institute, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok.
- 1999 J. Bayman and **M.S. Shackley**: Dynamics of Hohokam Obsidian Circulation in the North American Southwest. *Antiquity* 73:836-845.
- 1999 B.B. Huckell, **M.S. Shackley**, and L.W. Huckell: McEuen Cave. In *Early Maize in the Greater Southwest*. *Archaeology Southwest* 13(1):12. Center for Desert Archaeology, Tucson, Arizona.
- 1999 Y.V. Kuzmin, A.V. Tabarev, V.K. Popov, M.D. Glascock, and **M.S. Shackley**: Geochemical Source Analysis of Archaeological Obsidian in Primorye (Russian Far East). *Current Research in the Pleistocene* 16:97-99.
- 1998 **Shackley, M.S.**, Gamma Rays, X-rays and Stone Tools: Some Current Advances in Archaeological Geochemistry. *Journal of Archaeological Science* 25:259-270.
- 1998 J. Desmond Clark and **M.S. Shackley**: The Prehistoric Rock Paintings in the Lower Rock Shelter at Laga Oda, Harar Province, Ethiopia. *Rivista di Scienze Preistoriche* XLIX:213-223.
- 1998 **Shackley, M.S.**, Geochemical Differentiation and Prehistoric Procurement of Obsidian in the Mount Taylor Volcanic Field, Northwest New Mexico. *Journal of Archaeological Science* 25:1073-1082.
- 1998 **Shackley, M.S.**, Patayan Culture Area. In *Archaeology of Prehistoric North America: An Encyclopedia*, edited by G. Gibbon, pp. 629-632. Garland Publishing Inc., New York.
- 1997 J. Peterson, D. R. Mitchell, and **M.S. Shackley**: The Social and Economic Contexts of Lithic Procurement: Obsidian from Classic Period Hohokam Sites. *American Antiquity* 62(2):231-259.
- 1997 V.K. Popov, and **M.S. Shackley**: Obsidian of Primorye: First Results of Archaeological-Geological Correlation. *Bulletin of the Far Eastern Branch, Russian Academy of Sciences* 3:77-85.
- 1996 **Shackley, M.S.**, Ishi was not Necessarily the Last Full-Blooded Yahi: Some Inferences for Hunter-gatherer Style and Ethnicity. *Berkeley Archaeology* 3(2):1-3.
- 1996 P.D. LeTourneau, **M.S. Shackley**, J.M. Warnica, and J. Cummings: Analysis of Obsidian Folsom Artifacts from New Mexico. *Current Research in the Pleistocene* 13:59-61.

- 1996 **Shackley, M.S.**, Range and Mobility in the Early Hunter-Gatherer Southwest. In *Early Formative Adaptations in the Southern Southwest*, edited by Barbara Roth, pp. 5-16. Monographs in World Prehistory 25. Prehistory Press, Madison.
- 1996 **Shackley, M.S.**, Elko or San Pedro?: Inferences from a Quantitative Analysis of Late Archaic Projectile Points from White Tanks, Yuma County, Arizona. *Kiva* 61(4):413-432.
- 1996 **Shackley, M.S.**, Justin R. Hyland, and María de la Luz Gutiérrez M.: Mass Production and Procurement at Valle del Azufre: A Unique Archaeological Obsidian Source in Baja California Sur. *American Antiquity* 61(4):718-731.
- 1995 **Shackley, M.S.**, Sources of Archaeological Obsidian in the Greater American Southwest: An Update and Quantitative Analysis. *American Antiquity* 60(3):531-551.
- 1995 **Shackley, M.S.**, Relics, Rights, and Regulations. *Scientific American*, March 1995:115.
- 1995 D. Mitchell and **M.S. Shackley**: Classic Period Hohokam Obsidian Studies in Southern Arizona: A Review and Prospectus. *Journal of Field Archaeology* 22(3):291-304.
- 1994 **Shackley, M.S.**, Intersource and Intrasource Geochemical Variability in Two Newly Discovered Archaeological Obsidian Sources in the Southern Great Basin: Bristol Mountains, California and Devil Peak, Nevada. *Journal of California and Great Basin Anthropology* 16(1):118-129.
- 1994 M. E. Hall and **M.S. Shackley**: A Study of Some Near Eastern Obsidians. *al-Rāfidān: Journal of Western Asiatic Studies* 15:25-32.
- 1994 M.D. Glascock, **M.S. Shackley**, Y.V. Kuzmin, and A.V. Tabarev: Geochemical Characterization of Obsidian Artifacts from Prehistoric Sites in the Russian Far East: Initial Study. In *Proceedings of the International Symposium on the Archaeology of the Northern Pacific*. Dalnauka, Vladivostok, Russia, pp. 67-72.
- 1994 J. Peterson, D. Mitchell, and **M.S. Shackley**: Obsidian from Pueblo Grande, Arizona: Modeling Social and Economic Patterns in Lithic Procurement. In *Archaeometry of Pre-Columbian Sites and Artifacts: Proceedings of the 28th International Symposium on Archaeometry*, edited by D.A. Scott and P. Myers, pp. 161-174. Getty Conservation Institute, Los Angeles.
- 1992 **Shackley, M.S.**, The Upper Gila River Gravels as an Archaeological Obsidian Source Region: Implications for Models of Exchange and Interaction. *Geoarchaeology* 7(4):315-326
- 1992 H.C. Koerper, J.E. Ericson, **M.S. Shackley**, D.L. Fife, C.A. Singer, and J.A. Minch: Jasper Procurement, Trade, and Control in Orange County: Comments and Observations. *Journal of California and Great Basin Anthropology* 14(2):237-246
- 1991 **Shackley, M.S.**, Tank Mountains Obsidian: A Newly Discovered Archaeological Obsidian Source in East-Central Yuma County, Arizona. *Kiva* 57:17-25.

- 1988 **Shackley, M.S.**, Sources of Archaeological Obsidian in the Southwest: An Archaeological, Petrological, and Geochemical Study. *American Antiquity* 53:752-772.
- 1986 Marzke, M.W., and Shackley, M.S.: Hominid hand use in the Pliocene and Pleistocene: evidence from experimental archaeology and comparative morphology. *Journal of Human Evolution* 15:439-460.
- 1983 **Shackley, M.S.**, Culture Chronological Documents for San Diego Prehistory. In *Cultural Resource Management Papers* 1(2). Cultural Resource Management Center, Department of Anthropology, San Diego State University.
- 1980 **Shackley, M.S.**, Late Prehistoric Settlement Patterns and Biotic Communities in Cuyamaca Rancho State Park, San Diego County California. *Pacific Coast Archaeological Society Quarterly* 16(3):37-52.

### **Web Publishing**

Designed, published, and administer a number of world wide web sites including:

Archaeological EDXRF Lab and the Southwest Archaeological Obsidian Source Finding Guide:

<http://www.swxrflab.net/>  
<http://www.swxrflab.net/swobsrscs.htm>

### **Exhibit Catalogs**

- 2002 Sites of Discovery: Art and Archeology in 19<sup>th</sup> Century Photographs of the American Southwest, with Kathleen L. Butler. Exhibit Curated at the Bancroft Library, University of California, Berkeley. Bancroft Library Publications.
- 1994 *Little Black Rocks in the Desert: Prehistoric Obsidian in the American Southwest*. Phoebe Hearst Museum of Anthropology, University of California, Berkeley.
- 1992 *The Stone Tool Technology of Ishi and the Yana*. Exhibit Catalog for the permanent exhibit, *Ishi in Early 20th Century America*. Phoebe Hearst Museum of Anthropology, University of California, Berkeley.
- 1991 *Tipai Mobility and Ceramics*. Hunter-gatherer storage and ceramic vessels in southeastern California and northern Baja California. Lowie Museum of Anthropology, University of California, Berkeley.

### **Book Reviews and Comments**

- 2018 **Shackley, M.S.**, and J.L. Moore, More than just Jemez Pueblo obsidian: comment on Liebmann's "...Landscapes of Signification in the American Southwest". *American Antiquity* 83:753-755.
- 2013 Speakman, R.J., and **M.S. Shackley**, Silo Science and Portable XRF in Archaeology: A Reply to Frahm. *Journal of Archaeological Science* 40:1435-1443.

- 1998 "Prehistoric Long-Distance Interaction in Oceania: An Interdisciplinary Approach". **M. Weisler (ed)**. New Zealand Archaeological Association Monograph 21. Auckland: New Zealand Archaeological Association, 1997. *Journal of the Polynesian Society* 107(40):433-435.
- 1994 "An Archaeologist's Guide to Chert and Flint". **Barbara E. Luedtke**. Archaeological Research Tools 7, Institute of Archaeology, University of California, Los Angeles, 1992. *Society for Archaeological Sciences (SAS) Bulletin* 17(3):16-18.
- 1992 "Archaeological Curatorship". **Susan Pearce**. Smithsonian Institution Press. *Museum Anthropology* 16(1):60-62.
- 1992 "Perspectives on Southwestern Prehistory". edited by **P.E. Minnis and C.L. Redman**. Westview Press. *American Indian Quarterly* 16(1):113-115.
- 1992 "Tom-Kav: A Late Village Site in Northern San Diego County, California, and Its Place in the San Luis Rey Complex". **D.L. True, Rosemary Pankey, and C.N. Warren**. University of California Anthropological Records 30, University of California Press, Berkeley. *Journal of California and Great Basin Anthropology* 14(2):261-264.
- 1991 Comment on: "The Transition between Hunter-gathering and the Specialized Husbandry of Resources: A Socio-ecological Approach" **R. Layton, R. Foley, and E. Williams**. *Current Anthropology* 32(3):267-268. 1990 Book Review: "Early Prehistoric Agriculture in the American Southwest". **W.H. WILLS**. School of American Research Press. *American Anthropologist* 92(3):828.
- 1987 Is Tomato Springs a Jasper?: Comment on "Tomato Springs: The Identification of a Jasper Trade and Production Center in Southern California." *American Antiquity* 52(3):616-623.
- 1987 Book Review: "Production and Exchange of Stone Tools: Prehistoric Obsidian in the Aegean". **ROBIN TORRENCE**. Cambridge University Press. *American Anthropologist* 89(2):461-462.
- 1983 Review of: Historical Site Archaeology in San Diego County: Tapping the Resource. **JEROME SCHAEFFER**. In *Cultural Resource Management Papers* 1(2). CRM Center Department of Anthropology, San Diego State University.

#### **Selected Edited Volumes/Published Technical Works**

- 2018 Shackley, M.S., C. Loendorf, C. Fertelmes, and L. Simon: Source provenance of obsidian artifacts from Antler House Village, Cordes Junction, central Arizona. In D.H. Sorrell, T. L. Gentilli, J. Simon Bruder, and L.M. Wygant (Eds.), *Archaeological Investigations at Antler House Village, AZ N:12:64 (ASM): A Persistent Pre-Classical Farmstead in a Northern Hohokam Hinterland*. EcoPlan Technical Series 1. EcoPlan Associates, Inc., Mesa, Arizona.
- 2018 A major, minor, and trace element x-ray fluorescence (XRF) analysis of copper nuggets and artifacts from two sites on White Sands Missile Range, southern New Mexico. In A. Kurota, E. Sternberg, and R. Dello-Russo (Eds.), *Archaeology of White Sands Missile Range*, pp. 55-1-55-10. Prepared for Department of the Army, U.S. Army Garrison White Sands, New Mexico.

- 2018 Source provenance of obsidian artifacts from White Sands Missile Range, southern New Mexico. In A. Kurota, E. Sternberg, and R. Dello-Russo (Eds.), *Archaeology of White Sands Missile Range*, pp. 50-1-50-8. Prepared for Department of the Army, U.S. Army Garrison White Sands, New Mexico.
- 2015 An energy-dispersive x-ray fluorescence analysis of obsidian artifacts from the Water Canyon Site (LA 134764), south-central New Mexico. In R. Dello-Russo (Ed.) *Archaeological Investigations at the Water Canyon Paleoindian Site (LA 134764), Socorro County, New Mexico*. OCA Report 185-1174.
- 2008 Archaeological Obsidian and Secondary Depositional Effects in the Jemez Mountains and Sierra de los Valles, Northern New Mexico. In *Land Conveyance and Transfer Data Recovery Project: 7000 Years of Land Use on the Pajarito Plateau*, edited by B.J. Vierra, and K.M. Schmidt, pp. 299-324. U.S. Department of Energy, National Nuclear Security Administration, Los Alamos, New Mexico.
- 2004 Source Provenance of Obsidian Artifacts from Prehistoric Sites in the U.S. 70 Safford-to-Thatcher Project, Safford Basin, Southeastern Arizona. In *Ancient Farmers on the Safford Basin: Archaeology of the U.S. 70 Safford-to-Thatcher Project*, edited by J.J. Clark, pp. 207-212. Anthropological Papers 39, Center for Desert Archaeology, Tucson, Arizona.
- 2003 Source Provenance of Obsidian Artifacts from Various Prehistoric Contexts in Crosby County, Texas. In *A Cultural Resources Inventory of the L7 Ranch, Crosby County, Texas*, edited by D.L. Nickels, pp. 267-276. Archaeological Studies Report 1, Center for Archaeological Studies, Southwest Texas State University, San Marcos.
- 2003 Source Provenance of Obsidian Artifacts from Los Guanacos (AZ U:9:116 ASM). In *Ceremony and Symbolism at Los Guanacos*, edited by J.M. Lindly, M.L. Chenault, and D.R. Mitchell, pp. 575-582. SWCA Cultural Resources Report 02-354, Phoenix.
- 2002 An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian and Volcanic Rock Artifacts from Brown's Ranch Rockshelter (AZ U:1:25), Northern Maricopa County, Arizona. In Archaeological Testing of AZ U:1:25 (ASM), The Brown's Ranch Site in Northern Scottsdale, Maricopa County, Arizona, edited by T.E. Wright, pp. 215-224. *The Arizona Archaeologist*, December 2002, No. 33.
- 2002 An Energy-Dispersive X-Ray Fluorescence Analysis of Archaeological Obsidian Artifacts. In *Tonto Creek Archaeological Project*, edited by J.J. Clark, pp. 773-780. Anthropological Papers 23, Center for Desert Archaeology, Tucson.
- 2002 Source Provenance of Obsidian Artifacts from Various Prehistoric Contexts in Crosby County, Texas. In *A Cultural Resource Inventory of the L7 Ranch, Crosby County, Texas*, edited by D.L. Nickels, pp. 267-276. Archaeological Studies Report 1, Center for Archaeological Studies, Southwest Texas State University, San Marcos.
- 2001 An Energy Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from the Grewe Site, Central Arizona. In *The Grewe Archaeological Research Project, Volume 2: Material Culture*, edited by D.B. Craig, pp. 649-656. Anthropological Papers 99-1. Northland Research, Tempe, Arizona.
- 2001 An Energy Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from AZ AA:12:91 (ASM), Tucson, Arizona. In *Excavations in the Santa Cruz River Floodplain: The Early Agricultural Period Component at Los Pozos*, edited by D.A.

- Gregory, pp. 333-336. Anthropological Papers 21, Center for Desert Archaeology, Tucson.
- 2000 An Energy Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from a Middle Rincon Component at Sunset Mesa (AZ AA:12:10 ASM), Tucson Basin, Arizona. In *Excavations at Sunset Mesa Ruin*, edited by M.W. Lindeman, pp. 283-288. Desert Archaeology Technical Report 2000-02. Tucson.
- 2000 Energy-Dispersive X-Ray Fluorescence Analysis of Archaeological Obsidian. In *Archaeological Investigation of Rooms 15 and 16 at the Upper Cliff Dwelling (AZ U:8:48 [ASM]), Tonto National Monument*, edited by G.L. Fox, pp. 113-118. U.S. Department of the Interior Publications in Anthropology 73, Western Archaeological and Conservation Center, Tucson.
- 1999 with R.A. Joyce, K. McCandless, and R. Sheptak: Resultados Preliminares de una Investigación con EDXRF de Obsidiana de Puerto Escondido. Yaxkin. Journal of the Insituto Hondureño de Antropología e Historia, Tegucigalpa.
- 1999 An Energy Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Five Sites in Socorro County, New Mexico. In Results of Data Recovery Efforts at Sites LA 109307 and LA 109309 and Nature and Extent Testing Efforts along Navajo Route N55(1), Alamo Navajo Reservation to U.S. Interstate 40, Socorro County, New Mexico, edited by R.D. Dello-Russo, pp. 139-148. Zuni Cultural Resource Enterprise Report 598.
- 1999 An Energy Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Four Sites in Cibola County, New Mexico. In Results of Archaeological Data Recovery Efforts at Site LA 115316 along Navajo Route N55(2), Alamo Navajo Reservation to U.S. Interstate 40, Cibola County, New Mexico, edited by R.D. Dello-Russo, pp. 113-120. Zuni Cultural Resource Enterprise Report 614.
- 1999 Obsidian Sourcing. In *An Archaeological Investigation of Late Archaic Cerros de Trincheras Sites in Chihuahua, Mexico*, edited by R.J. Hard and J.R. Roney, pp. 21-22. Center for Archaeological Research, Special Report 25. University of Texas, San Antonio.
- 1999 Análisis de Energía Dispersiva de Fluorescencia de Rayos X (EDXRF) de Artefactos de Obsidiana de Sitios Prehistoricos en Laguna Guerrero Negro, Baja California Norte. In *Investigaciones Arqueológicas en Laguna Guerrero Negro, Baja California (Fase I)*, edited by E.W. Ritter, pp. 309-311. Ms. On file, Phoebe Hearst Museum of Anthropology, University of California Berkeley.
- 1999 An Energy Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Five Sites in Socorro County, New Mexico. In *Results of Data Recovery Efforts at Sites LA 109307 and LA 109309 and Nature and Extent Testing Efforts at Site LA 115306 along Navajo Route N55(1) Alamo Navajo Reservation ot U.S. Interstate 40, Socorro County, New Mexico*, edited by R.D. Dello-Russo, pp. 139-148. Zuni Cultural Resource Enterprise Report 598, Zuni, New Mexico.
- 1998 Source Provenance of Obsidian Artifacts from the Mount Vernon Hopewell Period Site, Posey County, Indiana: An Energy Dispersive X-Ray Fluorescence (EDXRF) Study. In *Hopewell in Mt. Vernon (12-PO-885)*, edited by the General Electric Company, pp. 175-184. General Electric Company.



- 1998 An Energy-Dispersive X-Ray Fluorescence Analysis of the Obsidian Artifacts from Chan Chich, Belize. In *The 1997 Season of the Chan Chich Archaeological Project*, edited by Brett A. Houk, pp. 67-72. Papers of the Chan Chich Archaeological Project 3. San Antonio, Texas.
- 1997 Análisis de energía dispersiva de fluorescencia de rayos x (edxrf) en artefactos de obsidiana y estándares de yacimiento de cinco sitios arqueológicos en Bahía de los Angeles, Baja California Norte: tempered de campo 1995. In *Investigaciones de Ecología Social y Cambios entre Culturas Prehistóricas en la Región de Bahía de los Angeles, Baja California (1995)*, edited by E.W. Ritter, pp. 202-210. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.
- 1997 An Energy-Dispersive X-Ray Fluorescence (EDXRF) Analysis of Obsidian Artifacts from SDI-5138, 5139, and 5145, Camp Pendleton, California. In *Camping and Milling in the Highlands: Archaeological Investigations of Case Spring and Firebreak Sites on Camp Pendleton, San Diego County, California*, edited by S. Reddy, pp. 235-239. ASM Affiliates, Encinitas, California.
- 1995 Análisis de energía dispersiva de fluorescencia de rayos x (edxrf) en artefactos de obsidiana de ocho sitios arqueológicos en Bahía de los Angeles, Baja California Norte: temporada de campo 1994. In *Investigaciones de Ecología Social y Cambios entre Culturas Prehistóricas en la Región de Bahía de los Angeles, Baja California*, edited by E.W. Ritter, pp. 197-208. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.
- 1994 Sources of Obsidian at Pueblo Grande: An Energy-Dispersive X-Ray Fluorescence Analysis. In *The Pueblo Grande Project, Volume 4: Material Culture*, edited by M.S. Foster, pp. 416-432. Soil Systems Publications in Archaeology 20, Phoenix.
- 1994 Análisis de energía dispersiva en fluorescencia de rayos x (EDXRF) de artefactos de obsidiana, de sitios arqueológicos en Bahía de Los Angeles y materiales de una fuente de obsidiana en Isla Angel de la Guarda, Baja California. In *Investigaciones de ecología social y cambios entre culturas prehistóricas en la región de Bahía de Los Angeles, Baja California*, edited by Eric Ritter, pp. 172-184. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.
- 1994 with Arleyn W. Simon and Peter H. McCartney: Lithic Assemblage Analysis. In *Archaeology of the Salado in the Livingston Area of Tonto Basin: Roosevelt Platform Mound Study*, edited by D. Jacobs, pp. 739-760. Anthropological Field Studies 32, Arizona State University.
- 1994 Obsidian Sourcing by Energy Dispersive X-Ray Fluorescence. In *Prehistoric Settlement Along the Eastern Margin of Rogers Dry Lake, Western Mojave Desert, California*, edited by B.F. Byrd, D. Palette, and C. Serr, pp. 157-161. Brian F. Mooney Associates Anthropological Technical Series 2. San Diego.
- 1993 An Energy Dispersive X-ray Fluorescence (EDXRF) Analysis of 57 Obsidian Artifacts from Seligman to Sunset Crater, Northern Arizona. In *Life on the Line: Archaic, Cohonina, and Sinagua Settlements in Western Arizona*, edited by D.G. Landis, pp. 498-504. Soil Systems Publications in Archaeology 19.

- 1993 An Energy Dispersive X-Ray Fluorescence Analysis (EDXRF) of Obsidian Artifacts from CA-SDi-186, CA-SDi-4757, CA-SDi-4765, and CA-SDi-4759. In *Multi-Component Archaic and Late Prehistoric Residential Camps Along the Sweetwater River, Rancho San Diego, California*, edited by B.F. Byrd, and C.Serr, pp. 417-424. Brian Mooney Associates Anthropological Technical Series 1.
- 1993 X-Ray Fluorescence Analysis (XRF) of Obsidian Artifacts from Shelltown, South-Central Arizona. In *Shelltown and the Hind Site: A Study of Two Hohokam Craftsman Communities in Southwestern Arizona*, edited by W.S. Marmaduke and R.J. Martynec, Appendix A. Northland Research, Inc., Flagstaff.
- 1993 X-Ray Fluorescence Analysis (XRF) of Obsidian Artifacts from the Santa Rosa Canal, Phase A. In *Small Sites on the Santa Cruz Flats*, edited by W.S. Marmaduke, pp. 153-156. Northland Research, Inc., Flagstaff.
- 1993 Lithics and Obsidian Analysis. In *Hunter-Gatherer Settlement, Subsistence, and Symbolism at White Tanks, Yuma Proving Ground, Arizona*, edited by J. Schaefer, pp. 109-134. Report prepared for US Army Corps of Engineers, P.O. Box 2711, Los Angeles, CA 90053-2325, by Brian Mooney Associates, San Diego.
- 1989 X-ray Fluorescence (XRF) Analysis of Obsidian Artifacts from the Grand Canal, Casa Buena, and Pueblo Grande Hohokam Sites, Central Arizona. In *Archaeological Investigations at the Grand Canal Ruins: A Classic Period Site in Phoenix, Arizona*, edited by Douglas R. Mitchell, pp. 987-992. Soil Systems Publications in Archaeology 12, Soil Systems, Inc., Phoenix, Arizona
- 1988 (with Paul Bouey) X-Ray Fluorescence (XRF) Analysis of Obsidian Artifacts from the Tucson Aqueduct Project. In *Hohokam Settlement Along the Slopes of the Picacho Mountains: Material Culture*, edited by M.M. Callahan, pp. 359-370. MNA Research Paper 35(4). Museum of Northern Arizona, Flagstaff.
- 1987 X-ray Fluorescence (XRF) Analysis of Obsidian Artifacts from La Ciudad AZ T:12:37(ASU), Central Arizona. In *Specialized Studies in the Economy, Environment, and Culture of La Ciudad*, Part I and II, edited by J.E. Kisselburg, G.E. Rice, and B.L. Shears, pp. 175-180. Anthropological Field Studies 20, Arizona State University, Tempe.
- 1987 X-ray Fluorescence (XRF) Analysis of Obsidian Artifacts from the Marana Hohokam Complex. In *Studies in The Hohokam Community of Marana*, edited by G.E. Rice, pp. 217-222. Anthropological Field Studies 15, Arizona State University, Tempe.
- 1980 An Annotated Bibliography of Archaeological Reports Relative to San Diego County. *Cultural Resource Management Center Publication No.1*, Department of Anthropology, San Diego State University. With Fred Kidder.

**SELECTED LABORATORY TECHNICAL REPORTS (2006-2018; usually 20-30 per year) Most reports between 1985 to present available at [escholarship.org](https://escholarship.org), University of California open access site.**

- 2018 Source provenance of archaeological obsidian from Mesa Grande (AZ U:9:25 ASM), Mesa Arizona. Report prepared for Arizona Museum of Natural History, Mesa, Arizona.

- 2018 Source provenance of volcanic rock artifacts from the Robert Weber Collection, Socorro County, New Mexico. Report prepared for Chris Merriman, Department of Anthropology, University of New Mexico, Albuquerque.
- 2018 X-ray fluorescence (XRF) analysis of major, minor, and trace elements of native copper nodules, copper bells, and fetishes from a number of sites from Pithouse through Classic Mimbres of Southern New Mexico. Report prepared for Gila National Forest, Truth or Consequences, New Mexico.
- 2018 Source provenance of archaeological obsidian from archaeological sites along the Rio Santa Maria, central Chihuahua, Mexico. Report prepared for Escuela Antropología e Historia del Norte de México, Chihuahua, Chihuahua, México.
- 2018 X-ray fluorescence (XRF) analysis of major, minor, and trace elements of metal artifacts from Sevilleta Pueblo (LA 774), central New Mexico. Report prepared for Dr. Michael Bletzer, Albuquerque.
- 2017 Source provenance of obsidian artifacts from Crystal Cave, (39LA504) western South Dakota. Report prepared for Dr. Rick Weathermon, Department of Anthropology, University of Wyoming, Laramie.
- 2017 Source provenance of obsidian artifacts from Cabeza Prieta Wildlife Refuge, southwestern Arizona. Report prepared for U.S. Fish and Wildlife Service, Ajo, Arizona.
- 2016 Source provenance of obsidian artifacts from later period sites, Chaco Culture National Historical Park, New Mexico. Report prepared for Jeremy Moss, Pecos National Historical Park, New Mexico.
- 2010 Source Provenance of Obsidian Artifacts from YAV-3, Yavapai-Prescott Indian Tribal Land, Prescott, Arizona. Report prepared for the Yavapai-Prescott Indian Tribe, Prescott, Arizona.
- 2010 Source Provenance of Obsidian Artifacts From Pottery Mound (LA 416), Middle Rio Grande Valley, New Mexico. Report prepared for Dave Phillips, Maxwell Museum of Anthropology, University of New Mexico.
- 2010 Source Provenance of Obsidian Artifacts From the Late Classic Sites of Chevlon, Homol'ovi I And Homol'ovi II In Northern, Arizona. Report prepared for Arizona State Museum.
- 2010 Source Provenance of Obsidian Artifacts from Late Classic Contexts in the El Morro Basin, Western New Mexico and Eastern Arizona. Report prepared for Matt Peeples, School of Human Evolution and Social Change, Arizona State University.

- 2009 Source Provenance of Obsidian Artifacts from Stone Axe Pueblo (AZ Q:2:22 ASM) and Black Axe Pueblo (AZ Q:01:320 ASM), Petrified Forest National Park, Northern Arizona. Report prepared for Petrified Forest National Monument and The Center for Desert Archaeology, Tucson.
- 2008 Source provenance of obsidian artifacts from archaeological sites south of Ajo, Arizona. For the Bureau of Land Management, Phoenix, Arizona.
- 2008 Source provenance of obsidian artifacts from Mezmaiskaya Cave, Caucasus Mountains, Russia. Report prepared for St. Petersburg University, Russia.
- 2007 Source provenance of obsidian artifacts from the Kutoyis/Two Medicine Site, Glacier County, Blackfeet Indian Reservation, Montana. For University of Arizona and Blackfeet Nation.
- 2007 Source provenance of obsidian artifacts from the Classic Mimbres Site of Old Town, southwestern New Mexico. For University of Oklahoma.
- 2007 An energy-dispersive x-ray fluorescence analysis of source clays and ceramics from Santa Rita B, Northern Peru. For Florida State University.
- 2006 Source provenance of obsidian artifacts from the Wind Mountain Site, southwestern New Mexico. Prepared for B. Schriever (grad student), U of Oklahoma, and the Amerind Foundation, Arizona.
- 2006 Source provenance of obsidian artifacts from sites near Puerto Peñasco, Sonora, Mexico. Prepared for J. Mabry, Center for Desert Archaeology, Tucson.
- 2006 Source provenance of obsidian artifacts from various contexts on the Gila River Indian Community Land, Central Arizona. Prepared for the Gila River Indian Community, Sacaton, Arizona.

## CONFERENCE PAPERS/POSTERS/WORKSHOPS

**Shackley, M.S.**, and F. Goff

- 2022 Contrasting geologic and geoarchaeological views of Grants Ridge obsidian deposits, Mount Taylor Volcanic Field, New Mexico. Paper presented at the 2022 New Mexico Geological Society Annual Spring Meeting, Socorro, New Mexico.

Goff, F. and **M.S. Shackley**

- 2022 Origin of archaeological significant gravel and lab deposits on southwestern Horace Mesa, Mount Taylor region, New Mexico. Paper presented at the 2022 New Mexico Geological Society Annual Spring Meeting, Socorro, New Mexico.

Morgan, G.S., D.J. Koning, **M.S. Shackley**, D.W. Love, K.M. Hobbs, and A.P. Jochems  
2022 Early Pleistocene (Late Blancan) vertebrates from Simon Canyon, Socorro County, central New Mexico. Poster presented at the 2022 New Mexico Geological Society Annual Spring Meeting, Socorro, New Mexico.

Goff, F., Zimmerer, M., Krier, D, Goff, C., **Shackley, M.S.**, Gehrz, J, and Niklasson, S.  
2021 Detailed investigations of Rendija Canyon rhyodacite, a complicated volcanic complex in the Sierra de los Valles, Jemez Mountains Volcanic Field, New Mexico. Paper presented at the 2021 New Mexico Geological Society Annual Spring Meeting (Zoom presentation).

**Shackley, M.S.**

2019 Discussant: Presented at the 2019 Fryxell Medal Symposium: Papers in Honor of M. Steven Shackley.

Clark, Jeffrey, J. Brett Hill, and **M. Steven Shackley**

2019 Looking Through the Glass: How Large-Scale XRF Obsidian Sourcing Has Exploded Our View of Late Prehistoric Pre-Hispanic Regional Networks in the U.S. Southwest. Paper presented at the 2019 Fryxell Award Symposium: Papers in Honor of M. Steven Shackley.

Dolan, S.G., E. Gallaga, and **M.S. Shackley**

2019 Archaic Period Obsidian Procurement in the Casas Grandes Region, Chihuahua, Mexico. Poster presented at the Southern Southwest Archaeological Conference, Phoenix, Arizona.

Joseph Birkmann, Bruce B. Huckell, and **M. Steven Shackley**

2018 San Jose Revisited: The Typology, Morphometrics, and Geochemistry of early Middle Archaic Occupation in West-Central, New Mexico. Poster presented at *The Archaic in New Mexico* conference, New Mexico Archaeological Council, Albuquerque, New Mexico, November 10, 2018.

Ryan, Stacy L., **M. Steven Shackley**, and Allen Denoyer

2018 Raw Material Selection and Obsidian Procurement and Use at a Salado Site in the Upper Gila. Poster presented at the 7th Natural History of the Gila Symposium, Silver City, New Mexico, February 22-24, 2018.

**Shackley, M.S.**, L.E. Morgan, and D.G. Pyle

2016 Elemental, isotopic, and geochronological variability in Mogollon-Datil Volcanic Province archaeological obsidian: solving issues of inter-source discrimination. Poster presented at the Annual Meeting of the Geological Society of America, Denver, Colorado. *GSA Abstracts with programs*, 47(7).

**Shackley, M.S.**

- 2015 Elemental and isotopic variability in Mogollon-Datil Volcanic Province obsidian, western New Mexico: issues in XRF analysis. Poster presented at the Society for American Archaeology, Annual Meeting, San Francisco.

Dolan, S. G., M. R. Miller, **M. S. Shackley**, and J. R. Ferguson

- 2015 An Update and New Insights into Obsidian Procurement in the Jornada Region. Paper presented at the 17th Biennial Jornada Mogollon Conference, El Paso, Texas, October 9–10.

**Shackley, M.S.**

- 2014 Elemental and isotopic variability in Mogollon-Datil Volcanic Province obsidian, western New Mexico: issues in XRF analysis. Poster presented at the 40th International Symposium on Archaeometry, Los Angeles.

Sternberg, R., **M.S. Shackley**, J.M. Feinberg, A. Steffen, A. Freeman, A. Gregovich, C. Hackett, M. Harrison, Z. Osborne, A. Pollen, M. Regier, K. Roth, R. Samuels

- 2014 Geochemical characterization of georeferenced obsidian samples from four source areas in New Mexico. Paper presented at the 40th International Symposium on Archaeometry, Los Angeles

Roth, K., R.S. Sternberg, **M.S. Shackley**, J. Feinberg, and J. Rahl

- 2013 Geochemical variability of obsidian in western New Mexico with laboratory-based PXRF. Poster presented in the session Celebrating Advances in Archaeological Geology: Past, Present and Future, at the 125th Annual Meeting of the Geological Society of America, Denver Colorado.

**Shackley, M.S.**

- 2013 The Secondary Distribution of Archaeological Obsidian in Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Paleoamerican Procurement and the Age of Sediments. Poster presented at the Paleoamerican Odyssey Conference, Santa Fe, New Mexico, October, 2013.

**Shackley, M.S.**

- 2013 Discussant Paper: The Good, Bad, and Not So Ugly in 21<sup>st</sup> Century XRF Spectrometry. In session: *XRF Methods for the Geochemical Characterization of Archaeological Materials: Precision, Accuracy, Limits of Detection*. Society for American Archaeology, 78<sup>th</sup> Annual Meeting, Honolulu, Hawaii.

**Shackley, M.S.**

- 2012 The Secondary Distribution of Archaeological Obsidian in Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Prehistoric Procurement and the Age of Sediments. Poster presentation at the Society for American Archaeology, Annual Meeting, Memphis, Tennessee.

Clark, J., **M.S. Shackley**, J.B. Hill, and W.R. Haas, Jr.

2012 Long Distance Obsidian Circulation in the late Pre-Contact Southwest: Deviating from Distance-Decay. Paper presented at the Society for American Archaeology, Annual Meeting, Memphis, Tennessee.

Harper, N., and **M.S. Shackley**

2012 Obsidian Diversity at Big Springs (26CK948, 26CK949), Las Vegas, Nevada. Paper presented at the Society for American Archaeology, Annual Meeting, Memphis, Tennessee.

Haas, W.R., J.J. Clark, B.J. Mills, L. Borck, B. Hill, D. Huntley, M. Peeples, S.C. Ryan, **M.S. Shackley**, and M. A. Trowbridge

2012 The SWSN Database: Late Prehispanic Artifact Distributions in the Western U.S. Southwest. Poster presented at the 13 biennial Southwest Symposium, Albuquerque, New Mexico.

**Shackley, M.S.**

2011 Obsidian Provenance Studies in the North American Southwest: Provenance Triumph and Archaeological Success. Paper presented in the symposium The Cutting Edge: The State of Play in World Obsidian Studies, at the 76<sup>th</sup> Annual Meeting of the Society for American Archaeology, Sacramento.

Clark, J., **M.S. Shackley**, R. Jones, and S. Ryan

2011 Through Volcanic Glass: Measuring the Impact of Ancestral Puebloan Immigration on the Hohokam World. Paper presented in the symposium New Perspectives on the Hohokam, at the 76<sup>th</sup> Annual Meeting of the Society for American Archaeology, Sacramento

**Shackley, M.S.**

2010 Beyond Magnetism: A Short History of Obsidian Provenance Studies and Magnetic Personalities. Invited paper, Symposium: Magnetism of Glassy Materials, American Geophysical Union, San Francisco, California.

Sternberg, R.S., S. Gilder, P.R. Renne, and **M.S. Shackley**

2010 Magnetic Properties of Obsidians from the Southwestern U.S. Poster presentation Symposium: Magnetism of Glassy Materials, American Geophysical Union, San Francisco, California.

Doyel, David E., and **M.S. Shackley**

2010 Late Formative Period Exchange Systems in the Phoenix Basin. Paper presented at The Symposium on the Application of Archaeological Science in Arizona, Arizona Archaeological Council, Tucson, Arizona.

**Shackley, M.S.**

- 2010 The Secondary Distribution of Archaeological Obsidian in the Rio Grande Quaternary Sediments, Jemez Mountains to San Antonio, New Mexico: Inferences for Prehistoric Procurement and the Age of Sediments. Poster presentation, 38<sup>th</sup> International Symposium on Archaeometry, Tampa, Florida.

**Shackley, M.S. (Keynote Address)**

- 2009 The Geoarchaeology of Obsidian Provenance Studies: Past, Present, and Future. In *Obsidian from Magma to Artifact: Geological and Archaeological Perspectives*. Geological Society of America Annual Meeting, Portland, Oregon.

Nazaroff, A., and **M.S. Shackley**

- 2009 Testing the Size Dimension Limitation of Portable XRF Instrumentation for Obsidian Provenance. Poster presentation, Geological Society of America Annual Meeting, Portland, Oregon.

**Shackley, M.S.**, and C. Henrickson

- 2009 From The Unknown To Known: The State Of Obsidian Source Provenance Studies In Baja California. In Symposium: *The Emerging Archaeology of Baja California: Challenging Paradigms of Isolation and Marginality*. Society for American Archaeology, Atlanta, Georgia.

**Shackley, M.S.**

- 2009 Discussant: Provenance and Archaeology: A Review. In the Society for Archaeological Science and International Association for Obsidian Studies Sponsored Symposium, *Provenance Studies in Archaeology*. Society for American Archaeology, Atlanta, Georgia.

Arakawa, F., A. Duff, C. Ward, J. Moss, J. Kantner, and **M.S. Shackley**

- 2008 Obsidian Procurement Patterns in the Chaco Era. Poster presented at the Southwest Symposium, Tempe, Arizona.

- 2007 **Shackley, M.S.**, Keynote Address: *Archaeological Petrology, X-ray Fluorescence Spectrometry, and Obsidian Studies in a 21<sup>st</sup> Century Geoarchaeology*. Geological Society of America Annual Meeting, Denver, Colorado.

- 2007 Marina Milić, **M. S. Shackley**, and Boban Tripković  
Viewing Serbian Prehistoric Long-Distance Relations via Obsidian Sourcing Studies. Paper presented at the Annual Meeting of the American Institute of Archaeology, Chicago.

**Shackley, M.S**

- 2007 Discussant: *The Allure of the Exotic*. Sponsored symposium, Society for American Archaeology Annual Meeting, Austin, Texas.



- 2007 C.M. Snyder, A.I. Duff, J. Kantner, **M.S. Shackley**  
Obsidian Sourcing Analysis from Three Chacoan Great House Communities in Western New Mexico. Poster presented at the Society for American Archaeology, Annual Meeting, Austin, Texas.
- 2006 Morgan, L.E., J. Watkins, P.R. Renne, M. Manga, **M.S. Shackley**, M.C. Martin  
High-Resolution Synchrotron-Source FTIR measurements of hydration rinds on volcanic glasses as applied to archaeology, *Eos Trans. American Geophysical Union*, 87(52), Fall Meet. Suppl., Abstract V31D-0626.
- 2006 Carolyn Dillian, **M.S. Shackley**  
Mid-Atlantic Super-Long Distance Obsidian Exchange. Paper presented at the 71<sup>st</sup> Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.
- 2005 **Shackley, M.S.**, Paleoindian Basalt and Obsidian Sources in the North American Southwest: A Preliminary Model of Late Paleoindian Territoriality. Paper presented in the Symposium on Archaeological Geology, Geological Society of America, Annual Meeting, Salt Lake City, Utah.
- 2005 T. Carter, S. Delerue, G. Poupeau, **M.S. Shackley**, N.J.G. Pearce  
*Cappadocian Obsidians from Early Neolithic Catalhöyük: Revisiting Provenance Studies*. Poster presented at Archéométrie 2005, Colloquium Groupe de Méthodes Pluridisciplinaires Contribuant à l'Archéologie se déroulera à l'Institut National des Sciences et Techniques Nucléaires (INSTN, Saclay), 19-22 April, 2005.
- 2005 **Shackley, M.S.**, Chair and Organizer: Symposium, *Fourth Millennium B.P. Adoption of Domesticated Maize and Squash in the North American Southwest: The Assemblage from McEuen Cave, Southeastern Arizona*. The 70<sup>th</sup> Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.
- 2005 **Shackley, M.S.**, Chronometry and Geochemistry at McEuen Cave: The Radiocarbon and Obsidian Geochemical Data. Paper presented in the Symposium, *Fourth Millennium B.P. Adoption of Domesticated Maize and Squash in the North American Southwest: The Assemblage from McEuen Cave, Southeastern Arizona*. Presented at the 70<sup>th</sup> Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.
- 2005 B. Vierra, **M.S. Shackley**, and M. Jodry  
Late Paleoindian and Early Archaic Foragers of the Northern Rio Grande. Paper presented in the Symposium, *From Paleoindian to Archaic – Views on a Transition*. The 70<sup>th</sup> Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.

- 2005 C. D. Dillian, **M.S. Shackley**, and C.A. Bello  
Crossing the Delaware: Documenting Super-Long Distance Obsidian Exchange in New Jersey. Paper presented at the 70<sup>th</sup> Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.
- 2004 R.M. Wegener, B.A. Bradley, K.L. Blake, **M.S. Shackley**  
Prehistoric Lithic Traditions and Obsidian Procurement Patterns in West-Central New Mexico. Paper presented at the 69<sup>th</sup> Annual Meeting of the Society for American Archaeology, Montreal, Canada.
- 2002 K.L. Butler and **M.S. Shackley**  
Sites of Discovery: Art and Archaeology in 19<sup>th</sup>-Century Photographs of Southwest Archaeological Sites. Poster presented at the Annual Pecos Conference, Pecos National Historic Park, New Mexico.
- 2002 **Shackley, M.S.**, Use of Three-Dimensional Laser Scanning at McEuen Cave, Southeastern Arizona. Multi-Media Presentation with J. Holmlund, B. Huckell, L. Huckell, J. Nicoli, and E. Brennan at the 67<sup>th</sup> Annual Meeting of the Society for American Archaeology, Denver, Colorado.
- 2001 Butler, K.L., and **Shackley, M.S.**, Sites of Discovery: The Creation of Public Knowledge About the American Southwest in 19<sup>th</sup> Century America, with Kathleen Butler. Poster presentation at the Annual Meeting of the American Studies Association, Washington, DC.
- 2001 **M.S. Shackley**, Lisa W. Huckell, and Bruce B. Huckell  
The 2001 Excavations at McEuen Cave (AZ W:13:6 ASM), Southeastern, Arizona. Paper presented at the Pecos Conference, Flagstaff, Arizona, 10 August 2001.
- 2001 **M.S. Shackley** and James Bayman  
Obsidian Source Provenance, Projectile Point Morphology and Sacaton Phase Hohokam Cultural Identity. Paper presented in the symposium *A Snaketown Retrospective* at the 66<sup>th</sup> Annual Meeting of the Society for American Archaeology, New Orleans.
- 2000 **Shackley, M.S.**, Organizer and Chair for the SAA Sponsored Forum: *The Adoption of the Bow and Arrow in North America: Chronology, Technology, and Social Process*. Presented at the 65<sup>th</sup> Annual Meeting of the Society for American Archaeology, Philadelphia, Pennsylvania, 8 April 2000.
- 2000 **Shackley, M.S.**, The Southwest Archaeological Obsidian Project in The Northern Region. Workshop presented at the 73<sup>rd</sup> Pecos Conference, Dolores, Colorado.

- 1999 **Shackley, M.S.** and Carolyn Dillian: Thermal and Environmental Effects on Obsidian Geochemistry: Experimental and Archaeological Evidence. Paper presented in the Symposium: *The Effects of Fire/Heat on Obsidian* at the 33<sup>rd</sup> Annual Meeting of the Society for California Archaeology, Sacramento, 24 April 1999.
- 1999 **Shackley, M.S.**, Ninety-nine Bottles of Beer on the Wall: The Evolution of American Beer Containers as a Reflection of Industry, Transportation, and the Settling of the West. Paper presented in the symposium, *Before Miller Time: The Role of Beer Production and Consumption in the Americas, 1770-1930*, at the 1999 Annual Meeting of the Society for Historical Archaeology, Salt Lake City, Utah.
- 1998 **Shackley, M.S.**, Precision Versus Accuracy in the XRF Analysis of Archaeological Obsidian: Some Lessons for Archaeometry and Archaeology. Paper presented at the 31<sup>st</sup> International Symposium on Archaeometry, Budapest, Hungary.
- 1998 **Shackley, M.S.**, Archaeologists, Archaeometrists, and the Notion of Obsidian in Prehistory. Paper presented in the invited symposium *From Glass to Ceramics: Archaeometry in Archaeological and Technological Studies* at the 63<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Seattle.
- 1998 P.D. LeTourneau, T.Baker, and **M.S. Shackley**: Folsom Period Obsidian Use in New Mexico. Paper presented at the 63<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Seattle.
- 1998 **Shackley, M.S.**, What is (XRF) X-Ray Fluorescence Spectrometry? Presented in the Workshop: *Obsidian Hydration I: Fundamentals of Dating and Sourcing*. The 63<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Seattle.
- 1998 Myles R. Miller, and **M.S. Shackley**: New Interpretations of Obsidian Procurement and Movement in the Jornada Mogollon Region of West Texas, Southern New Mexico and Northern Chihuahua. Paper presented at the symposium Recent Advances in Geochemical Compositional Analysis and Sourcing in West Texas. Annual Meetings of the Texas Archaeological Society, Waco.
- 1997 **Shackley, M.S.**, Southwest Archaeological Obsidian Studies: Lessons from the Past and Ideas for the Future. Workshop chaired at the 70<sup>th</sup> Annual Pecos Conference, Chaco National Cultural Center, Chaco Canyon, New Mexico.
- 1997 **M.S. Shackley** and B.B. Huckell: Field Report for McEuen Cave (AZ W:13:6 ASM). Paper presented at the 70<sup>th</sup> Annual Pecos Conference, Chaco National Cultural Center, Chaco Canyon, New Mexico.

- 1997 Arleyn Simon, Glen Rice, and **M.S. Shackley**  
Trade Items at Salado Platform Mounds: Ritual or Managerial Control? Paper presented at the 62<sup>nd</sup> Annual Meeting of the Society for American Archaeology, Nashville.
- 1996 **M.S. Shackley** and Bruce Huckell  
Workshop on Southwest Archaic Projectile Point Typology. Conference on the Archaic Prehistory of the North American Southwest, University of New Mexico, Albuquerque.
- 1996 Michael Glascock, Yaroslav Kuzmin, **M.S. Shackley**, and Andrei Tabarev  
Geochemical Characterization of Archaeological Obsidian from the Russian Far East: A Pilot Study. Poster presented at the 30th International Symposium on Archaeometry, University of Illinois, Urbana-Champaign.
- 1996 **Shackley, M.S.**, Elko or San Pedro?: Some Thoughts on Great Basin Versus Southwest Projectile Point Morphology and the Identification of Ethnic Group Boundaries. Paper presented in the symposium, *Archaic Cultures of the Southern Deserts of the American West*. Society for American Archaeology 61st Annual Meeting, New Orleans, Louisiana.
- 1996 James Bayman and **M.S. Shackley**: Obsidian Studies at the Casa Grande/Grewe Site Complex, South-Central Arizona. Paper presented at the Society for American Archaeology 61st Annual Meeting, New Orleans, Louisiana.
- 1996 **Shackley, M.S.**, Co-Moderator for Luncheon Workshop: *Compositional Studies and Geochemistry*. Society for American Archaeology 61st Annual Meeting, New Orleans, Louisiana.
- 1996 **Shackley, M.S.**, Geology, Geochemistry, and Prehistoric Distribution of Archaeological Obsidian Sources from the Papaguería. Paper presented at the Western Papaguería Cultural Resources Workshop, National Training Center, Phoenix, Arizona.
- 1995 **Shackley, M.S.**, Archaeological Consequence of the Chemical Variability and Secondary Deposition of Mule Creek Obsidian, New Mexico. Paper presented at the 68th Annual Pecos Conference, Mimbres, New Mexico.
- 1994 **Shackley, M.S.**, International Workshop on Field and Laboratory Standards in Obsidian Geochemistry (Organizer and Moderator). International Association for Obsidian Studies, and Society for American Archaeology Annual Meetings, Anaheim, California.
- 1993 **Shackley, M.S.**, Gamma Rays, X-Rays, Stone Tools and the "Sourcing" Myth: Are We Missing the Point? Paper presented in the symposium *Archaeological Science: Past Achievements/Future Directions*, at the 58th Annual Meeting of the Society for American Archaeology, St. Louis, Missouri.

- 1992 **Shackley, M.S.**, Range and Mobility in the Early Hunter-Gatherer Southwest. Paper presented in the symposium *Settlement and Subsistence in the Late Archaic and Early Ceramic Periods of the Southern Southwest* at the 57th Annual Meeting of the Society for American Archaeology, Pittsburgh.
- 1992 Peterson, J., Mitchell, D., **Shackley, M.S.**, Modeling Patterns of Lithic Procurement and Production: Regional and Intrasite Applications of Obsidian XRF Data from Pueblo Grande, Arizona. Paper presented at the 57th Annual Meeting of the Society for American Archaeology, Pittsburgh.
- 1992 **Shackley, M.S.**, and J. Hampel, Surface Effects in the Energy Dispersive X-Ray Fluorescence (EDXRF) Analysis of Archaeological Obsidians. Poster presentation in the session *Ancient Technology and Provenance on Nonmetals* at the 28th International Symposium on Archaeometry, Los Angeles.
- 1992 J. Peterson, D. Mitchell, and **M.S. Shackley**: Obsidian X-Ray Fluorescence Data from Pueblo Grande, AZ: Modeling Social and Economic Patterns in Lithic Procurement. Paper presented at the 28th International Symposium on Archaeometry, Los Angeles.
- 1991 **Shackley, M.S.**, Projectile Point Technology of Ishi and the Yahi-Yana: Inferences for Hunter-Gatherer Style and Ethnicity. Paper presented in the Session *Researching Symbolism, Style, and Ritual* at the 56th Annual Meeting of the Society of American Archaeology, New Orleans.
- 1990 **Shackley, M.S.**, Early Hunter-Gatherer Procurement Ranges and Mobility in the Southwest: Evidence from Obsidian Geochemistry and Lithic Technology. Poster presentation in Poster Session: Advances in Hydration Analysis and Chemical Characterization. Society for American Archaeology 55th Annual Meeting, Las Vegas.
- 1988 **Shackley, M.S.**, Session Chair, *Lithic Studies*. Society for American Archaeology 53rd Annual Meeting, Phoenix.
- 1988 **Shackley, M.S.**, Obsidian Studies in the Southwest: Geochemical and Archaeological Problems. Paper Presented at the 53rd Annual Meeting of the Society for American Archaeology, Phoenix.
- 1987 **Shackley, M.S.**, Sources of Archaeological Obsidian in the Southwest: Geochemical and Archaeological Problems. Paper Presented at the Conference on Trace Element Geochemistry of Obsidian With Applications to Anthropology. Annual Symposium on Southwestern Geology and Paleontology, Flagstaff, Arizona.
- 1987 Todd Boswick and **M.S. Shackley**: Settlement Strategies and Lithic Technology: An Examination of Variability in Hunter-Gatherer and Agriculturist's Chipped Stone Assemblages in the Sonoran Desert. Paper Presented at the 1987 Hohokam Symposium, Arizona State University, Tempe.
- 1986 M. Marzke and **M.S. Shackley**  
Tool Use and the Evolution of the Hominid Hand. Paper Presented at the Annual Meeting of the American Society for Physical Anthropology, Albuquerque.

- 1986 **Shackley, M.S.**, Diachronic and Spatial Variability in Obsidian Procurement in the American Southwest: A Trace Element Exploration of Southwest Obsidian Sources. Presented at the 51st Annual Meeting of the Society for American Archaeology, New Orleans.
- 1985 **Shackley, M.S.**, Lithic Raw Material Procurement and Hunter-Gatherer Mobility Strategies in the Southwest Archaic. Presented at the 50th Annual Meeting of the Society for American Archaeology, Denver.
- 1983 **Shackley, M.S.**, Late Prehistoric Agave Resource Procurement and a Broad Spectrum Subsistence Economy in the Mountain Springs Area, Western Imperial County, California. Presented at the Annual Meeting of the Society for California Archaeology, San Diego.
- 1982 **Shackley, M.S.**, Environment and Behavior: *Agave deserti* Procurement in the In-koh-pah Gorge Area, San Diego and Imperial Counties, California. Presented at the Annual Meeting of the Society for California Archaeology, Sacramento.
- 1981 **Shackley, M.S.**, An Inland Early Milling Site (4SDI6153) in San Diego County: Cultural and Environmental Interpretations. Session Chair, Archaeology of San Diego County. Presented at the Annual Meeting of the Southwestern Anthropological Association, Santa Barbara.

## **PROFESSIONAL AFFILIATIONS**

Arizona Archaeological Council  
 Arizona Archaeological and Historical Society (Life Member)  
 Geological Society of America (Archaeological Geology Division)  
 International Association for Obsidian Studies, Life Member (past President)  
 New Mexico Archaeological Council  
 New Mexico Geological Society (Life Member)  
 Phi Beta Kappa (inducted 1980)  
 Society for American Archaeology  
 Society for Archaeological Sciences, Life Member (past Vice-President)  
 Society for California Archaeology