

Patrick Ryan Williams
Curator of Archaeological Science
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EDUCATION:

2006 Licenciatura en Arqueología (revalidado), Pontificia Universidad Católica del Perú.

1997 Ph.D., Anthropology - GIS & Remote Sensing minor, University of Florida.

The Role of Disaster in the Development of Agriculture and the Evolution of Social Complexity in the South-Central Andean Sierra.

1995 M.A., Anthropology, University of Florida.

Agricultural Hydraulics and the State in the Torata Valley, Perú

1993 B.A., Geography & Anthropology, Northwestern University.

Anthropology Thesis: Settlement Patterns of Southern Peruvian Coastal People from the Archaic to the Early Historic

Geography Thesis: A Reexamination of Agrarian Collapse on the Coast of Moquegua, Perú

INTERESTS:

Anthropology of imperialism and colonialism, complex societies, agricultural dynamics, landscape ecology, geographic information systems and remote sensing applications, geoarchaeology, archaeometry, Andean South America.

ACADEMIC EMPLOYMENT:

Administration

Head, Social Sciences, The Field Museum of Natural History, Chicago, 2014-2020

Associate Director for Research, The Field Museum of Natural History, Chicago, 2013-2014

Chair, Department of Anthropology, The Field Museum of Natural History, Chicago. 2010-2013

Founding Director, Elemental Analysis Facility, The Field Museum of Natural History, Chicago, 2003-

Research & Teaching

November 2006 – present Associate to Full Curator (tenured), Field Museum of Natural History

August 2001 – 2006 Assistant Curator (tenure-track), Field Museum of Natural History

Adjunct Professor, University of Illinois – Chicago & Northwestern U.

Courses taught: Analytical Archaeology (UIC); Landscape Archaeology and GIS (UIC), Andean Prehistory (UIC), Lost Tribes and Sunken Lands (UIC), Archaeological Field Methods (UIC), Archaeological Lab Methods (NU, UIC), Museum Exhibit Research and Design (UIC), Museum Collecting: Documentation, Registration, & Curation (UIC)

Dissertations supervised: Robin Coleman (NU 2010), Nicola Sharratt (UIC 2011), Sofia Chacaltana (UIC 2015), Pilar Escontrias (NU 2016), David Reid (UIC 2020), Marie Elizabeth Grávalos (UIC 2021), Emily Baca (UIC), John Hicks (UIC), Ben Schaefer (UIC), Ashley Vance (UIC), Corey Bowen (UIC), Cyrus Banikazemi (UIC), Emilee Witte (UIC), Maria Isabel Guevara Duque (UIC)

August 2000 - August 2001

Assistant Professor, Department of Archaeology, Boston University.

Courses taught: Remote Sensing and Archaeology, Statistics and Computer Sciences for the Archaeologist, Regional Archaeology and Geographical Information Systems

Dissertation Committees, primary research advisor: Chris Dayton (2008), Ben Vining (2011)

January 1999 - May 2000

Visiting Assistant Professor, Department of Anthropology and the Honors Program, University of Florida.

Courses taught: Honors Cultural Anthropology, Honors Fantastic Archaeology, Honors Development of World Civilization, GIS and Remote Sensing Methods in Anthropology

January-March 1998

Adjunct Faculty, Department of Anthropology, Sociology, and Criminal Justice, Valdosta State University.

Courses taught: Introductory Anthropology

GRANTS (\$4 million+; \$1.5 million+ federal funding):

Federal

National Science Foundation Archaeometry Program “Collaborative Projects EAF” \$163230 (co-PI, 2020)
 US Dept of State, “Peruvian Conservation Training” \$24,860 (PI, 2019)
 National Science Foundation Dissertation Improvement Grants to advisees (2009, 2010, 2018, 2018)
 National Science Foundation Archaeometry Program “Support for the EAF” \$131018 (co-PI, 2016)
 National Science Foundation Major Research Instrumentation Grant “ICP-MS” \$123400 (co-PI, 2015)
 National Science Foundation Archaeometry Program “EAF Interlab Comparison” \$146573 (co-PI, 2013)
 National Science Foundation Archaeometry Program “Adaptable Chamber LA-ICP” \$177236 (co-PI, 2008)
 National Science Foundation Senior Research Grant “Tiwanaku Roads” \$49052 (co-PI, 2006)
 National Science Foundation Major Research Instrumentation Grant “EAF” \$494295 (PI, 2003)
 National Endowment for the Humanities Collaborative Research Grant “Ritual Feting” \$68500 (co-PI; 2003)
 National Science Foundation Senior Research Grant “Imperial Interaction in the Andes” \$107981 (PI, 2000)
 J. W. Fulbright Scholarship, Perú \$7000 (1995)
 National Science Foundation Graduate Research Fellowship \$65,500 (1993)

Private Foundation (TFM indicates intramural funding)

Lilly Endowment, “Death: Life’s Mystery and Anthropology of Religion Endowment”, \$2.5M (PI, 2020)
 Negaunee Foundation, TFM, “Seed Funds for Research-Cerro Baúl”, \$24,000 (PI, 2020)
 Negaunee Foundation, TFM, “Collaborative Research-Cerro Baúl”, \$30,000 (PI, 2018)
 Negaunee Foundation, TFM, “Archaeological Chemistry Postdoc”, \$63,000 (PI, 2016)
 Negaunee Foundation, TFM, “ICP-MS Instrumentation” \$85,000 (PI, 2015)
 National Geographic Society, “Tiwanaku Temple at Cerro Baúl” \$15600 (PI, 2015)
 Negaunee Foundation, TFM, “Portable X-Ray Fluorescence Instrumentation” \$80,000 (co-PI, 2014)
 Negaunee Foundation, TFM, “Postdoctoral Teaching Fellows Program”, \$30000 (PI, 2013)
 Negaunee Foundation, TFM, “Collections Management Program”, \$30000 (PI, 2012)
 Brennan Foundation Grant “Tiwanaku Household Archaeology” \$5000 (co-PI; 2011)
 Grainger Fund for Science, TFM, “Collaborative Projects in the EAF” \$10000 (co-PI, 2011)
 Grainger Scientific Equipment Grant, TFM “Enhancements to the EAF” \$185000 (PI, 2007)
 Grainger Fund for Science, TFM, “Andes’ Oldest Brewery” \$16800 (PI, 2007)
 Dumbarton Oaks/Harvard University Research Grant “Late Tiwanaku Bioarchaeology” \$10000 (PI, 2006)
 Brennan Foundation Grant “Tiwanaku Geophysics” \$5000 (co-PI; 2004)
 Heinz Charitable Trust Grant for Latin American Archaeology “Cerro Baul” \$8000 (PI, 1998)
 Charles Fairbanks Scholarship, University of Florida \$900 (1997)
 G. A. Bruno Foundation Grant for Andean Archaeological Research “Cerro Baul” \$5000 (PI, 1997)

PUBLICATIONS (70+):

PEER REVIEWED BOOKS AND JOURNALS:

2022 **Williams, Patrick Ryan**, Gary Feinman, and Luis Muro Ynoñán, Editors. *Beyond Death: Beliefs Practice, and Material Expression*. Oxford: BAR Press and Fieldiana Anthropology (in press).

2022 **Williams, Patrick Ryan**, Nicola Sharratt, Cyrus Banikazemi, Andrew Roddick, Michele L. Koons, Collette Gabler, Ashley Vance. Ceramic Production in the Tiwanaku Sphere: LA-ICP-MS in the Moquegua, Titicaca, and Cochabamba Regions. In *Collaborative Analyses of Elemental Data: A Special Issue on Andean Ceramics and Ancient Political Networks*, edited by M. E. Gravalos, P. R. Williams, and L. Muro. *Journal of Archaeological Science: Reports*. (in press)

2022 Kosiba, Steve, Nicola Sharratt, Mark Golitko, Kylie Quave, Laure Dussubieux, and **Patrick Ryan Williams**. Local Knowledge, Imperial Aesthetics: LA-ICP-MS Analysis of Clay Procurement and Ceramic Production in Ancient Cuzco. In *Collaborative Analyses of Elemental Data: A Special Issue on Andean Ceramics and Ancient Political Networks*, edited by M. E. Gravalos, P. R. Williams, and L. Muro. *Journal of Archaeological Science: Reports*. (in press)

2022 Grávalos, M. Elizabeth, David A. Reid, Donna J. Nash, and **Patrick Ryan Williams**. Crafting Cosmopolitanism: Ceramic Production and Exchange during Wari Imperialism (600-1000 CE). In *Collaborative Analyses of Elemental Data: A Special Issue on Andean Ceramics and Ancient Political Networks*, edited by M. E. Gravalos, P. R. Williams, and L. Muro. *Journal of Archaeological Science: Reports*. (in press)

2022 Sharratt, Nicola, **Patrick Ryan Williams**, Donna J. Nash, Sofia Chacaltana-Cortez, Joshua Wackett. Crafting a Colony: geochemical insights into 1000 years of state craft in the Moquegua Valley, Peru. In *Collaborative Analyses of Elemental Data: A Special Issue on Andean Ceramics and Ancient Political Networks*, edited by M. E. Gravalos, P. R. Williams, and L. Muro. *Journal of Archaeological Science: Reports*. (in press)

2022 Dauphas, Nicolas, Timo Hopp, Grant Craig, Zhe J. Zhang, Maria C. Valdes, Philipp R. Heck, Bruce L. A. Charlier, Elizabeth A. Bell, T. Mark Harrison, Andrew M. Davis, Laure Dussubieux, **Patrick R. Williams**, Michael J. Krawczynski, Claudia Bouman, Nicholas S. Lloyd, Darren Tollstrup, and Johannes B. Schwieters. In situ 87Rb–87Sr analyses of terrestrial and extraterrestrial samples by LA-MC-ICP-MS/MS with double Wien filter and collision cell technologies. *J. Anal. At. Spectrom. JAAS*, DOI: 10.1039/D2JA00135G.

2022 Hastorf, CA, KM. Moore, IE. Smail, R. Penfil, **P. R. Williams**, D. Riebe, KJ Knudson. Formative Exchange in the Andean Titicaca Basin: Isotopic Camelid Data and Lithic Sourcing: Evidence from the Taraco Peninsula, Bolivia. *Ñawpa Pacha*. DOI: 10.1080/00776297.2022.2066300

2022 Dehglin, Louise, Donna Nash, and **P. R. Williams**. Wari Imperial Motives: the Variety of Decorated Ceramics at Cerro Baúl. *Ñawpa Pacha*. DOI: 10.1080/00776297.2022.2068227

2022 **Williams, P. R.**, David Reid, Donna Nash, Sofia Chacaltana, Kirk Costion, Paul Goldstein, Nicola Sharratt. Obsidian Utilization in the Moquegua Valley through the Millennia. In *Obsidian Across the Americas*, edited by G. Feinman and D. Riebe. Oxford: BAR. (in press)

2022 Reid, David, **P. R. Williams**, Kurt Rademaker; Nicholas Tripcevich, and Michael D. Glascock. The Characterization of Small-Sized Obsidian Debitage Using P-XRF: A Case Study from Arequipa, Peru. In *Obsidian Across the Americas*, edited by G. Feinman and D. Riebe. Oxford: BAR. (in press)

2021 **Williams, P.R.** and Nash, D.J. Consuming Kero: Molle Beer and Wari social identity in Andean Peru. *Journal of Anthropological Archaeology* 63, p.101327.

2021 Nash, Donna and **Patrick Ryan Williams**. As Wari Weakened. Ritual Transitions in the Terminal Middle Horizon of Moquegua, Peru. In Joanne M. A. Murphy, Ed. *Rituals, Collapse, and Radical Transformation in Archaic States*. London: Routledge, pp. 77-99.

2020 Véronique Bélisle , Hubert Quispe-Bustamante, Thomas J. Hardy, Allison R. Davis, Elder Antezana Condorie, Carlos Delgado González, José Victor Gonzales Avendaño, David A. Reid, **Patrick Ryan Williams**. Wari impact on regional trade networks: Patterns of obsidian exchange in Cusco, Peru. *Journal of Archaeological Science Reports* 32: 102439.

2020 Vining, Benjamin and **Patrick Ryan Williams**. Crossing the Western Altiplano: An Ecological Context to Tiwanaku Migrations. *Journal of Archaeological Science* 113:105046.

2020 **Williams, Patrick Ryan**. *Cambio Climático en los Antiguos Andes*. Universidad Nacional de Moquegua, Peru. 218 pp.

2020 **Williams, Patrick R.** Wari, Geography & Culture of. In Claire Smith, Ed. *Encyclopedia of Global Archaeology*. New York: Springer: 11095-11107.

2020 **Williams, Patrick R.** Moseley, Michael. In Claire Smith, Ed. *Encyclopedia of Global Archaeology*. New York: Springer: 7414-7416.

2020 **Williams, Patrick Ryan**, Donna Nash, and Sofia Chacaltana. Wari and Tiwanaku: Early Imperial Repertoires in Andean South America. In A. Boozer, B. Daring, and B. Parker, Eds. *Archaeologies of Empire: Local Participants and Imperial Trajectories*. Albuquerque, University of New Mexico Press.

2019 Biver, Matthew E., Patricia Chirinos Ogata, Donna J. Nash and **Patrick Ryan Williams** Comida y contacto cultural: Resultados preliminares del Proyecto de Investigación Paleobotánica Wari en Moquegua. *Actas del IV Congreso Nacional de Arqueología Volumen II*. Lima: Ministry of Culture of Peru. Pp. 77-88.

2019 Stephens, Lucas, Dorian Fuller, Nicole Boivin, Torben Rick, ..., **Patrick Ryan Williams**, et al. Archaeological Assessment reveals Earth's Early Transformation through Land Use. *Science* Vol. 365, Issue 6456, pp. 897-902. DOI: 10.1126/science.aax1192

2019 **Williams, Patrick R.**, Donna Nash, Anita Cook, William Isbell, and Robert J. Speakman. Wari Ceramic Production in the Heartland and Provinces. In *Ceramics of the Indigenous Cultures of South America: Production and Exchange*, Michael D. Glascock, Hector Neff, and Kevin J. Vaughn, editors. Albuquerque: University of New Mexico Press, pp 125-133.

2019 **Williams, Patrick R.**, Donna Nash, Josh Henkin, and Ruth Ann Armitage. Archaeometric Approaches to Defining Sustainable Governance: Wari Brewing Traditions and the Building of Political Relationships in Ancient Peru. *Sustainability* 11(8), 2333; <https://doi.org/10.3390/su11082333>

2019 Sharratt, N., S. deFrance, **P. R. Williams**. Spanish Colonial Networks of Production: Earthenware Storage Vessels from the Peruvian Wine Industry. *International Journal of Historical Archaeology* <https://doi.org/10.1007/s10761-018-0480-3>.

2019 Hart, Megan, Ana Londoño, and **Patrick R. Williams**. The Rise and Fall of Peruvian Adaptive Agriculture in the Face of Climatic Instability. *Geophysical Research Abstracts* 21, EGU2019-4537.

2019 Londoño, Ana, Megan Hart, and **Patrick Ryan Williams**. Dryland irrigation, the expansion of an Agricultural Frontier in the Moquegua Region of Peru. *Geophysical Research Abstracts* 21, EGU2019-4525.

2018 **Williams, P. R.**, A. C. Londoño, M. Hart. Modeling Archaeological Landscape Transformations in Early Andean Empires. In *New Geospatial Approaches in the Anthropological Sciences*, R. Anemone and Glenn Conroy, Eds. Albuquerque: UNM Press. Pp. 189-209.

2018 Dayton, C., **P. R. Williams**, B. Vining, and S. Smith. Geophysical Investigations at Khonko Wankane. In *Khonko Wankane: Archaeological Investigations in Jesus de Machaca, Bolivia*, J. W. Janusek, ed. Contributions of the Archaeological Research Facility No 68. University of California, Berkeley.

2017 **Williams, P. R.** Una Perspectiva Comparada de Caminos Wari y Tiwanaku: los Antecedentes del Qhapaq Ñan Incaico. In *Nuevas Tendencias en el Estudio de los Caminos* Sofia Chacaltana, Elizabeth Arkush, and Giancarlo Marcone, Eds. Lima: Ministry of Culture of Peru. Pp. 30-47.

2017 Edmundo de la Vega, Charles Stanish, Michael E. Moseley, **P. R. Williams**, Benjamin R. Vining, Cecilia Chavez, and Karl LaFavre. Qawra Thaki: el Sistema de Caminos Transversales entre el Altiplano y los Valles Occidentales del Sur Peruano. In *Nuevas Tendencias en el Estudio de los Caminos* Sofia Chacaltana, Elizabeth Arkush, and Giancarlo Marcone, Eds. Lima: Ministry of Culture of Peru. Pp. 100-123.

2017 Londoño, Ana C., **Patrick Ryan Williams**, Megan L. Hart. A change in landscape: Lessons learned from abandonment of ancient Wari agricultural terraces in Southern Peru. *Journal of Environmental Management* 202 (3):532-542.

2016 Golitko, Mark, Nicola Sharratt, and **Patrick Ryan Williams**. "Open-Cell Ablation of Killke and Inka Pottery from the Cuzco Area: Museum Collections as Repositories of Provenience Information." *Recent Advances in Laser Ablation ICP-MS for Archaeology*. Springer Berlin Heidelberg. Pp. 27-52.

2016 Janusek, J. & **Williams, P. R.** Tectonic Technē in the Production of Tiwanaku Monumentality. In *Making Value, Making Meaning: Technē in Pre-Columbian Mesoamerica and Andean South America*. Cathy L. Costin, editor. Washington DC: Dumbarton Oaks. Pp. 95-128.

2016 **Williams, P. R.** and Donna Nash. Religious Ritual and Wari State Expansion. In *Ritual and Archaic States*, edited by Joanne M. A. Murphy. Gainesville: University Press of Florida. Pp. 131-156.

2016 **Williams, Patrick Ryan**. "Prologue." *Recent Advances in Laser Ablation ICP-MS for Archaeology*. Springer Berlin Heidelberg.

2016 **Williams, P. R.** *Exploration with radar and electrical resistivity*. in Liangchengzhen: 1998-2001 Excavation Report (volume III). Edited by Luan Fengshi, Anne Underhill, Yu Haiguang, Fang Hui, Cai Fengshu, Wang Fen, Geoffrey Cunnar. Wenwu/Cultural Relics Press, pp. 1013-1021.

2015 **Williams, P. R.**, J. Janusek, & C. Lemuz. Monumentalidad e Identidad en la Producción Monumental Lítica de Tiwanaku. In Juan Chacama y Antti Korpisaari, Eds. *El Horizonte Medio: Nuevos Aportes para el Sur del Peru, Norte de Chile, y Bolivia*. Lima: Instituto Frances de Estudios Andinos. Pp. 31-56.

2015 Sharratt N., M. Golitko, and **P. R. Williams**. Pottery Production, Regional Exchange and State Collapse during the Middle Horizon: LA-ICP-MS analyses of Tiwanaku Pottery in the Moquegua Valley, Perú. *Journal of Field Archaeology* 40(4):397-412.

2015 Piscitelli, Matthew, Sofía Chacaltana Cortez, Nicola Sharratt, Mark Golitko, and **Patrick Ryan Williams**. Inferring Ceramic Production, Social Interaction, and Political Dynamics in the Moquegua Valley through Geochemical Analysis. *Ceramic Analysis in the Andes*, edited by Isabelle Druc. Madison: Deep University Press.

2014 Eerkens, J. W., Barfod, G. H., Vaughn, K. J., **Williams, P. R.**, & Leshner, C. E. Iron isotope analysis of red and black pigments on pottery in Nasca, Peru. *Archaeological and Anthropological Sciences* 6, 241-254.

2013 Levine, Abigail, Charles Stanish, **P R Williams**, Cecilia Chavez, and Mark Golitko. Trade and Early State Formation in the Northern Titicaca Basin. *Latin American Antiquity* 24(3): 289-308.

2013 Londono, A. C., Megan L. Hart, **Patrick Ryan Williams**, Megan L. Hente. Ground Based Lidar of Ancient Andean Agricultural Systems. Proceedings of the 2013 Digital Heritage International Congress. New York: IEEE: pp. 507-510.

2013 **Williams, P. R.** Tiwanaku: A Cult of the Masses. In A. Vranich and C. Stanish, eds. *Visions of Tiwanaku*. Los Angeles: Cotsen Institute of Archaeology at UCLA. pp. 27-40.

2013 **Williams, Patrick Ryan**, Ana Cristina Londono, Megan L. Hart, Donna J. Nash, Sofia Chacaltana C., Megan L. Hente. Surface Architectural Scanning of Archaeological Sites with Ground Based Lidar in Southern Peru. Proceedings of the 2013 Digital Heritage International Congress. New York: IEEE: pp. 605-608.

2012 Arnold, Dean E., Bruce F. Bohor, Hector Neff, Gary M. Feinman, **Patrick Ryan Williams**, Laure Dussubieux, Ronald Bishop. The First Direct Evidence of Pre-Columbian Sources of Palygorskite for Maya Blue. *Journal of Archaeological Science* 39:2252-2260.

2012 Golitko, Mark, James Meierhoff, Gary Feinman, and **P. R. Williams**. Complexities of Collapse: the evidence of Maya obsidian as revealed by Network Graphical Analysis. *Antiquity* 86: 507-523.

2012 Janusek, J., **P. R. Williams**, M. Golitko, and C. Lemuz. Building Taypikala: Telluric Transformations In The Lithic Production Of Tiwanaku in *Mining and Quarrying in the Ancient Andes*, K. Vaughn and N. Tripcevich, eds. New York: Springer. Pp. 65-97.

2012 McEwan, Gordon and **P. R. Williams**. The Wari Built Environment: Landscape and Architecture of Empire. In S. Bergh, ed. *Wari: Lords of the Ancient Andes*. Cleveland: Cleveland Museum of Art. Pp. 65-81.

2012 Meierhoff, J., Mark Golitko, Gary M. Feinman & **Patrick Ryan Williams**. Chemical characterisation of obsidian from the Maya site of San José, Belize. *Antiquity* 86 (332):1-7.

2012 Sayre, Matthew, David Goldstein, William Whitehead, and **P. R. Williams**. A Marked Preference: Chicha de Molle and Wari State Consumption Practices. *Ñawpa Pacha* 32(2):231-258.

2012 Sharratt, N., **P. R. Williams**, M. C. Lozada, and J. Starbird. Late Tiwanaku Mortuary Patterns in the Moquegua Drainage, Peru: Excavations at the Tumilaca la Chimba Cemetery. In L. Klarich, C. Stanish, & A. Vranich, eds. *Advances in Titicaca Basin Archaeology* 3. Ann Arbor: UMMA.

2012 **Williams, Patrick Ryan**, Laure Dussubieux, and Donna J Nash. "Provenance of Peruvian Wari obsidian: Comparing INAA, LA-ICP-MS, and portable XRF," in Ioannis Liritzis and Chris Stevenson, ed., *Obsidian and Ancient Manufactured Glasses*. Albuquerque, NM: University of New Mexico Press. Pp. 75-96.

2011 Arnold, Dean, Jason Branden, Gary Feinman, **Patrick R. Williams**, and J. P. Brown. La primera evidencia de producción de azul Maya: Redescubriendo una tecnología mesoamericana olvidada. *Mesoamerica Debates y Perspectivas*. Colegio de Michoacan, Mexico. Pp. 199-218.

2011 Vaughn, Kevin, Laure Dussubieux, and **P. R. Williams**. A Pilot Compositional Analysis of Ceramics from the Kroeber Collection. *Journal of Archaeological Science* 38: 3560-3567.

2011 Thornton, Erin K. Susan D. deFrance, John Krigbaum, and **P R. Williams**. Isotopic Evidence for Middle Horizon to Sixteenth Century Camelid Herding in the Osmore Valley, Peru. *International Journal of Osteoarchaeology* 21: 544-567.

2010 C Stanish, E de la Vega, M Moseley, **P R Williams**, C Chavez, B Vining, K LaFavre. Tiwanaku Trade Patterns in Southern Peru. *Journal of Anthropological Archaeology* 29(4): 524-532.

2010 **Williams, P. R.** Innovación Agrícola, Intensificación, y Desarrollo Socio-político. *Georama* 2(3): 58-67.

2010 **Williams, P. R.** Paisajes hidráulicos y las relaciones sociales en los Andes del Horizonte Medio. *Georama* 2(4): 56-62.

2009 Sharratt, N., M. Golitko, **P. R. Williams**, and L. Dussubieux. Ceramic Production during the Middle Horizon: Wari and Tiwanaku clay procurement in the Moquegua Valley, Peru. *Geoarchaeology* 24(6): 792-820.

2009 Dussubieux, Laure and **P. R. Williams**. Elemental Analysis of Peruvian Copper-Based Artefacts using LA-ICPMS. In *2nd International Conference Archaeometallurgy in Europe 2007*. Associazione Italiana di Metalurgia. Pp. 489-497.

2009 Marcus, Joyce and **Patrick Ryan Williams**, editors. *Andean Civilization: A Tribute to Michael E. Moseley*. Los Angeles: Cotsen Institute of Archaeology Press, UCLA.

2009 Nash, D. and **P. R. Williams**. Wari Political Organization: The Southern Periphery. *Andean Civilization: A Tribute to Michael E. Moseley*. J. Marcus and P. R. Williams, eds. Los Angeles: Cotsen Institute of Archaeology Press, UCLA. Pp. 257-276.

2009 **Williams, P. R.** Wari and Tiwanaku Borderlands. In M. Young-Sanchez, ed. *Tiwanaku: Papers from the 2005 Mayer Center Symposium*. Denver: Denver Art Museum. Pp. 211-224.

2009 Kelly J. Knudson, Sloan R. Williams, Rebecca Osborn, Kathleen Forgey and **P. R. Williams** The geographic origins of Nasca trophy heads using strontium, oxygen, and carbon isotope data. *Journal of Anthropological Archaeology* 28:244-257.

2008 D. J. Goldstein, R. C. Coleman, and **P. R. Williams**. You are What you Drink. Reconstructing Middle Horizon (500-1000 C.E.) Social Dynamics through Paleoethnobotanical Interpretations of Fermented Beverage Production and Consumption at Cerro Baúl, Moquegua, Perú. In J. Jennings and B. Bowers (eds.) *Drink, Power, and Society in the Andes*. Gainesville, University of Florida Press. pp. 133-166.

2008 Laffoon, J. E., L. A. Curet, **P. R. Williams**, W. Pestle, and L. Dussubieux. "Comparing the results of trace element analysis of human tissues using ICP-MS versus LA-ICP-MS." *AMERICAN JOURNAL OF PHYSICAL ANTHROPOLOGY*, pp. 136.

2008 Vining, B., **P. R. Williams**, D. Blom, y N. Couture. Hacia una Imagen del Espacio Social en Tiwanaku: Perspectivas por Medio de Metodos Geofisicos en el Altiplano Boliviano. In *Arqueologia de las Tierras Altas, Valles Interandinos, y Tierras Bajas de Bolivia: Memorias del I Congreso de Arqueologia de Bolivia* (Claudia Rivera Casanovas, ed.). La Paz: Instituto de Investigaciones Antropologicas y Arqueologicas – Universidad Mayor de San Andres. pp. 63-76.

2008 Arnold, D., J. R. Branden, **P. R. Williams**, G. M. Feinman, & J. P. Brown
The first direct evidence for the production of Maya Blue: rediscovery of a technology. *Antiquity* 82: 151–164.

2008 **Williams, P. R.**, D. J. Nash, M. Moseley, S. deFrance, M. Ruales, A. Miranda, D. Goldstein
Encuentros en el Reino Wari. *Boletin de Arqueologia PUCP* 9: 207-232.

2007 Dussubieux, Laure, Mark Golitko, **Patrick Ryan Williams** and Robert J. Speakman
LA-ICP-MS analysis applied to the characterization of Peruvian Wari ceramics. In *Archaeological Chemistry: Analytical Techniques and Archaeological Interpretation*, edited by Michael D. Glascock, Rachel S. Popelka-Filcoff & Robert J. Speakman. Washington, DC: American Chemical Society Symposium Series 968: 349-363.

2007 **Williams, P. R.**, N. Couture, and D. Blom Urban Structure at Tiwanaku: Geophysical Investigations in the Andean Altiplano. *Remote Sensing in Archaeology*, J. Wiseman and F. El-Baz, Eds. New York: Kluwer. Pp. 415-433.

2007 **Williams, P. R.** Review of *Identity and Power in the Ancient Andes: Tiwanaku Cities Through Time*. *Journal of Anthropological Research* 63:114-115.

2006 **Williams, P. R.** and D. J. Nash Sighting the Apu: A GIS Analysis of Wari Imperialism and the Worship of Mountain Peaks *World Archaeology* 38(3):455-468.

2006 Martin, R. D. A. M. MacLarnon, J. L. Phillips, L. Dussubieux, **P. R. Williams**, and W. B. Dobyns
Comment on "The Brain of LB1, *Homo floresiensis*" *Science* 312: 999b.

2006 **Williams, P. R.** Review of Andean Diaspora: The Tiwanaku Colonies and the Origins of South American Empire. *Journal of Latin American Anthropology* 11(2): 507-509.

2006 **Williams, P. R.** Agricultural Innovation, Intensification, and Sociopolitical Development: the Case of Highland Irrigation Agriculture on the Pacific Andean Watersheds. In *Agricultural Strategies*, J. Marcus & C. Stanish, Eds. Cotsen Institute of Archaeology, UCLA. Pp. 309-333.

2006 **Williams, P. R.**, C. Stanish, M. Moseley, and B. Vining. Roads Scholarship: A Methodological Approach to the Role of Trade in the Tiwanaku State of the South American Andes. in *From Space to Place, Proceedings of the Second International Workshop on Remote Sensing Archaeology*, edited by Stefano Campana and Maurizio Forte. BAR Intl Series 1568: lxxv.

2005 M. Moseley, D. Nash, **P. Williams**, S. DeFrance, A. Miranda, M. Ruales. Burning Down the Brewery: Excavation and Evacuation of an Ancient Imperial Colony at Cerro Baúl, Perú. *Proceedings of the National Academy of Sciences* 102(48):17264-17271.

2005 **Williams, P. R.**, D. K. Keefer, D. J. Nash, K. Sims, C. Dayton, M. Moseley. Envisioning the Invisible: Reconstructing the Taphonomy of Ancient Andean Agricultural Landscapes through GIS Slope Stability Models. *The Reconstruction of Archaeological Landscapes through Digital Technologies II*, M. Forte, Ed. Oxford: BAR Intl Series 1379. Pp. 53-59.

2005 Nash, D. and **P. R. Williams**. Architecture and Power on the Wari—Tiwanaku Frontier. *Archaeological Papers of the American Anthropological Association* 14. Pp. 151-174.

2004 **Williams, P. R.**, N. Couture, D. Blom, J. Janusek, B. Vining, and C. Dayton. Ground-Based Remote Sensing and Early State Development in the South-Central Andes. *Proceedings of the International Conference of Remote Sensing Archaeology*. Beijing: Joint Laboratory of Remote Sensing Archaeology, Chinese Academy of Sciences. Pp. 149-157.

2003 **Williams, P. R.** Hydraulic Landscapes and Social Conflict in Middle Horizon Peru in M. Forte & P. R. Williams, eds. *The Reconstruction of Archaeological Landscapes through Digital Technologies*. Oxford: BAR Intl Series S1151. Pp 163-172.

2003 Terrell, J. E., Hart, J. P., Barut, S., Cellinese, N., Curet, A., Denham, T., Kusimba, C. M., Latinis, K., Oka, R., Palka, J., Pohl, M. E. D., Pope, K. O., **Williams, P. R.**, Haines, H. and Staller, J. E. Domesticated landscapes: The subsistence ecology of plant and animal domestication. *J. Arch. Method and Theory* 10: 323-368.

2002 **Williams, P. R.** Re-thinking Disaster Induced Collapse in the Case of the Andean Highland States: Wari and Tiwanaku. *World Archaeology* 33(3): 361-374.

2002 **Williams, P. R.** and J. Isla. Excavaciones Arqueológicas en el Centro Administrativo Wari de Cerro Baúl. *Gaceta Arqueológica Andina* 26: 87-120.

2002 **Williams, P. R.** and D. Nash. Imperial Interaction in the Andes: Wari and Tiwanaku at Cerro Baúl. in W. Isbell & H. Silverman, eds. *Andean Archaeology*. New York: Plenum. Pp. 243-265.

2001 **Williams, P. R.**, J. Isla, and D. Nash. Cerro Baúl: un Enclave Wari en Interacción con Tiwanaku. *Boletín de Arqueología PUCP* 5: 69-88.

2001 **Williams, P. R.** Cerro Baúl: A Wari Center on the Tiwanaku Frontier. *Latin American Antiquity* 12(1): 67-83.

PUBLIC ORIENTED PUBLICATIONS:

2021 **Williams, Patrick R.**, How to Survive a Climate Crisis. *In the Field*. Summer 2021: 11.

2020 **Williams, Patrick R.**, The Politics of Beer. *In the Field*. Summer 2020: 12.

2019 **Williams, Patrick R.**, Donna Nash, Josh Henkin, and Ruth Ann Armitage. Beer Bonding: Brewing traditions built strong political relationships in ancient Peru. *Natural History* November 2019: 12-15.

2016 **Williams, P. R.** Inca or Tahuantinsuyu Empire. *Encyclopedia of Empire*. Oxford University Press.

2016 **Williams, P. R.** Tiwanaku or Tiahuanaco Culture. Encyclopedia of Empire. Oxford University Press.

2011 **Williams, P. R.** *Cerro Baúl*. Museo Contisuyo, Moquegua.

2005 **Williams, P. R.** "Inca." *World Book Online Reference Center*. 2005. World Book, Inc. 21 Nov. 2005 <<http://www.worldbookonline.com/wb/Article?id=ar273760>>.

2003 **Williams, P. R.** and D. Nash. Clash of the Andean Titans: Wari and Tiwanaku at Cerro Baul. *In the Field*. Summer: 16-17.

2000 **Williams, P. R.**, M. Moseley, and D. Nash. Empires of the Andes: A Majestic Frontier Outpost Chose Cooperation Over War. *Scientific American Discovering Archaeology* March/April: 68-73.

RESEARCH PROGRAMS:

June 1997 - present

Project Director, Cerro Baúl Excavation Project. Ongoing excavation of a Wari administrative center occupied ca. A. D. 600 - 1000.

Sept 2000 - present, PI, Geoarchaeological and geochemical investigations in the Andean altiplano. Collaborations with colleagues on investigating the buried structure of Tiwanaku urban sites.

Sept 2003 - present, Director, Elemental Analysis Facility at The Field Museum. Installation of a trace element and isotopic chemistry lab using LA-ICP-MS, XRF, and SEM-EDS for researching exchange systems in prehistory worldwide.

October 1995 - March 1996

Project Director, Moquegua Ancient Agriculture Project. Archaeological reconnaissance, remote sensing, and excavation of hydraulic sites, and ethnographic interviews with modern farmers.

June 1991 - August 1995

Field Archaeologist, Programa Contisuyo, Moquegua, Peru. Five field seasons as crew member to crew chief on several archaeological projects in southern Peru.

May - June 1991

Underwater Archaeologist, Combined Caesarea Expeditions, Israel.

Fall 1990 - Fall 1992

Contract Field Archaeologist, Midwest Archaeological Research Services, Illinois.

June - August 1990

Northwestern University Archaeological Field School, Cook County, Illinois.

EXHIBITS CURATED:

Death: Life's Greatest Mystery (Field Museum 2022)

Mummies: Images of the Afterlife (Field Museum 2015)

Maps: Finding our Place in the World (Field Museum 2007)

Ancient Americas: Wari / Nasca gallery (Field Museum 2007)

ORGANIZATIONS:

American Association of Museums 2019-

Institute for Andean Studies, 1998-; Board of Directors 2013-2018

Scientific Advisory Board, Ludwig Boltzmann Institute ArchPro, Vienna, 2014-

Society for American Archaeology, 1991-; Investment Committee 2019-, Local Advisory Chair 2022
American Anthropological Association, Archaeology Division, 2001-
Register of Professional Archaeologists, 2004-9, 2021-
Archaeological Institute of America, 2011-
Registro Nacional de Arqueólogos del Perú BW-9507, 1995-
Colegio de Arqueólogos del Perú 040612, 2006-
Advisory Board, Asociación Contisuyo; Director 2002-; Board member 2018-
AAUP-FMNH Chapter 2009-; President 2009-2011
AAUP, Illinois State Council representative 2009-2015
Universidad Nacional Toribio Rodriguez de Mendoza, Peru, Visiting Professor 2015-

LANGUAGES:

English - native speaker

Spanish - near native fluency in speaking, reading, and writing.

SKILLS:

Geographic Information Systems – ARCGIS, IDRISI

Image Processing - ENVI, ERDAS Imagine, ReflexW (GPR processing)

Geophysics: GPR (Mala Geoscience X3M; GSSI SIR 2000), Magnetometry (Geometrics G858, GEM Systems GSM-19WG); Electrical Resistivity (TR Systems)

X-ray fluorescence spectrometry (Bruker, Thermo-Niton, Innovx)

Laser Ablation-Inductively Coupled Plasma Mass Spectrometry (Varian, Thermo)

Multivariate statistical analysis