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Research Associate Professor/Co-Director

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ACADEMIC APPOINTMENTS

2016 TO PRESENT

- Director of the Digital Heritage & Humanities Collections, University of South Florida Libraries
- Research Associate Professor, University of South Florida Libraries
- Courtesy Associate Professor, School of Geosciences, University of South Florida
- Courtesy Associate Professor, Department of Anthropology, University of South Florida
- University of South Florida Technical Representative to the Cooperative Ecosystem Studies Units (CESU) Network

2007 to 2016

- Director, Alliance for Integrated Spatial Technologies College of Arts and Sciences, University of South Florida
- Research Assistant Professor, College of Arts and Sciences, University of South Florida
- Courtesy Assistant Professor, School of Geosciences, University of South Florida
- Courtesy Assistant Professor, Department of Anthropology,
- University of South Florida Technical Representative to the Cooperative Ecosystem Studies Units (CESU) Network.

PROFESSIONAL EXPERIENCE

1971 to 1978

- Executive Director of Admissions, Morse Business College, Hartford, Connecticut

1978 to 1997

- Owner and President, Garage Doors of Naples, Construction firm, Naples, Florida. Retired in 1996

EDUCATION

- University of South Florida, Department of Anthropology, Tampa, Florida
Doctor of Philosophy Degree, Applied Anthropology – Archaeology, 2007
2007 University of South Florida Graduate School, Outstanding Dissertation Award
- Florida State University, Department of Anthropology, Tallahassee, Florida
Master of Science Degree, Anthropology, specialization in Archaeology, 2002
- Bryant University, Marketing and Management, Smithfield, Rhode Island
Bachelor of Science Degree, Business Administration, 1969

CURRENT INITIATIVES

The digital 3D documentation and preservation of threatened heritage sites around the world continues to be a major focus of my work. Current areas include early Mesoamerican stone sculpture, medieval Armenian art and architecture, Spanish colonial fortifications in the Caribbean, and historic and prehistoric archaeological sites in the Southeast United States. With my partner Lori Collins, we have developed an integrated suite of progressive and conventional techniques to produce accurate, high-resolution 2D and 3D imagery and visualizations for purposes of research, analysis, education, and public outreach. The data collection methods are non-contact and non-destructive, and include terrestrial and aerial laser scanning (LiDAR), close-range laser and white light scanning, surface and subsurface remote sensing, and multiple high-resolution photographic, photogrammetric, and sensor techniques. Other technologies include survey-grade Global Positioning Systems (GPS), Geographic Information Systems (GIS), and geo-referenced databases. The diverse datasets are processed through multiple modeling and virtualization software to produce numerous products that can be used by researchers and educators as

well as heritage planners and managers to develop preservation, conservation, and monitoring programs. We have established a network of scientists and professionals that includes historic preservation architects, archaeologists, historians, geologists, geographers, computer scientists, and cultural and environmental resource specialists.

RESEARCH DIRECTOR ACTIVITIES

As co-director of the Digital Heritage and Humanities Collections (DHHC) at the USF Libraries it is my responsibility to hire and manage field and lab personnel and ensure their expertise meets DHHC standards. I develop funded projects and grants and formulate budgets. I also conduct the reconnaissance and logistical planning for DHHC projects, and organize and manage the implementation of fieldwork and data collection operations. Overall, these responsibilities and activities expand and enhance the research and educational opportunities for students and faculty in the University of South Florida. Many of these projects have and will continue to provide research projects and materials for theses and dissertations. Besides offering varied internship, research, and training opportunities for students, they will receive education and experience in progressive 3D and high-resolution documentation and data collection technologies along with new software, modeling, and analytical techniques that will contribute to their gainful employment.

SELECTED RECENT AND CURRENT PROJECTS:

The Castillo de San Marcos, St. Augustine, Florida. Project documents entire 16th century Spanish Fortification in digital 3D for the National Park Service. Data used for preservation, condition assessment, education, and public outreach. 2018 to 2020.

The Cascajal Block 3D Digitization Project, Veracruz, Mexico. High-resolution 3D digital documentation of potentially the earliest Mesoamerican writing system conducted under the auspices of Mexico's National Institute of Anthropology and History (INAH). 2018-2020.

The Armenian Heritage and Social Memory Program. Ongoing project to 3D digitally document and preserve Medieval Armenian churches, monasteries, and fortifications. Project is conducted in cooperation with the office of the Armenian Church's Mother See of Holy Etchmiadzin. Data provide the church with CAD drawings and 3D models that are used for restoration and preservation. 2015-present.

Five Year Monitoring and Evaluation of Environmental Degradation of Six Launch Complexes, Cape Canaveral Air Force Station (CCAFS), Florida. This project is conducted for the Department of Defense, the United States Air Force Space Command's 45th Space Wing, and Patrick Air Force Base. The work involves a state-of-the-art digital documentation survey using highly accurate terrestrial laser scanning (TLS) and 3-D spatial technologies to record a representative assortment of historic structures for purposes of preservation, archiving, and educational programs. The data is prepared for use by the DoD, the CCAFS, and management and staff for planning and management purposes, 2015-2020.

Zona Arqueológica Chalcatzingo, Morelos, Mexico. Documentation and mapping of carved stone monuments and architectural structures at the Formative period archaeological site. Multi-faceted approach to determine levels of interaction between Middle Formative period settlements participating in the Mesoamerican interregional interaction sphere. This long-term project is conducted in collaboration with Mexico Instituto Nacional de Antropología e Historia (INAH) archaeologists Mario Córdova Tello and Carolina Meza, 2014 to present.

SELECTED PUBLICATIONS:

- 2018 3D Digital Documentation and Analysis of the Reef Bay Valley Petroglyphs, St. John, U.S. Virgin Islands National Park. 3D Digital Documentation Summit Proceedings, New Orleans, LA. April 18-20, 2017. In press. (Travis Doering, Lori Collins, Margo Schwadron, and Ken Wild)
- 2018 Phase I Archaeological Survey Patrick Air Force Base, On-Base Recreation Lodges, Patrick Air Force Base, Brevard County, Florida. (Jaime Rogers, Lori Collins, and Travis Doering)
- 2017 A Multi-Sensor Approach to Documenting a Large Collapse Sinkhole in West-Central Florida. American Geophysical Union Fall Meeting. (LD Collins, HG Kiflu, Tonian Robinson, Travis Doering, David Eilers, Mel Rodgers, Sarah Kruse, Shawn Landry, Jochen Braunmiller, Garrett Speed, Jorge Gonzalez, Richard McKenzie)
- 2017 Beyond Hype and Promise: Digital Heritage Strategies in Our Nation's Parks for Preservation, 3D Learning, Outreach, and Education. 3D Digital Documentation Summit Proceedings, New Orleans, LA. April 18-20, 2017. (Collins, Lori and Travis Doering)
- 2017 Mesoamerica in the Pre-Classic Period: Early, Middle, Late Formative. In *Encyclopedia of Global Archaeology*, Second Edition, edited by C. Smith. Springer, New York. Electronic and hard copy volumes. In press (Travis Doering)
- 2017 3D Digital Documentation and Analysis of the Reef Bay Valley Petroglyphs, St. John, U.S. Virgin Islands National Park. In press. 3D Digital Documentation Summit Proceedings, New Orleans, LA. April 18-20, 2017. In press. (Travis Doering, Lori Collins, Margo Schwadron, and Ken Wild)
- 2016 El registro de 3D de la escultura en Chalcatzingo y sus alcances en la conservación. Proceedings of the Tercer Congreso Internacional el Patrimonio Cultural y las Nuevas Tecnologías: Herramientas y Lenguajes para Museos. Museo Nacional de Antropología, Mexico City. November 28-30, 2016 Session: The Museological Sense: Reflecting on New Technologies in Museum and Heritage Organizations, 1976-2016. (Mario Córdova Tello, Travis Doering, Lori Collins, and Carolina Meza Rodríguez)
- 2016 Examining Erosion with a Terrestrial Laser Scanning Survey of the Russell Cave Rock Shelter. Technical Report prepared for the Southeast Archeology Center, National Park Service, Tallahassee, FL. (Lori Collins and Travis Doering)
- 2015 Una aproximación a los relieves de Chalcatzingo: el escaneo láser 3D. Proceedings of the Primer Congreso Internacional el Patrimonio Cultural y las Nuevas Tecnologías: Una visión Contemporánea. Mexico City. (Córdova Tello, Mario, Carolina Meza Rodríguez, Omar Espinosa Severino, Travis Doering and Lori Collins)
- 2015 Sunshine Speedway Resource Group (Site 8PI12003) 3D Documentation Project. Report prepared for the Florida Department of Transportation (FDOT), District 7, West Central Florida, Tampa, Florida (Lori Collins and Travis Doering).
- 2014 El Sacrificio en la Unidad Política de La Venta, Tabasco. Tabasco: Una Visión Antropológica e Histórica. M. A. Rubio Jiménez, R. P. Vela and B. P. González. Mexico City, Consejo Nacional para la Cultura y las Artes, Instituto Estatal de Cultura de Tabasco, Universidad Nacional Autónoma de México: 85-155. (Mary Pohl, Christopher von Nagy, Lori Collins, Travis Doering, Shannon Weatherby, Maria Tway)

- 2014 Topographical Modeling and GIS Database Design of Four Prehistoric Mound Locations, St. Petersburg, Florida. Report prepared for the City of St. Petersburg, Florida (Lori Collins and Travis Doering).
- 2013 Terrestrial and Airborne LiDAR Digital Documentation of Petroglyphs in Three Regions: Virgin Islands National Park, St. John, U.S. Virgin Island (VIIS), Hawai'i Volcanoes National Park (HAVO), Pu'uuhonua o Honaunau National Historical Park (PUHO), and the Chesapeake and Ohio Canal National Historical Park (CHOH) & Great Falls National Park (GFNP). Report and interpretation for the National Park Service, Southeast Archaeological Center, Tallahassee (Lori Collins and Travis Doering)
- 2013 *Fort Matanzas National Monument Digital Documentation Project*. National Park Service, Southeast Archaeological Center, Tallahassee. (Lori Collins and Travis Doering)
- 2013 *Archaeological Resource Sensitivity Modeling in Florida State Parks District 1: The Northwest Florida Region*. Florida Department of Environmental Protection, Division of Recreation and Parks, Tallahassee, FL. (Lori Collins, Jeffrey Du Vernay, Steven Fernandez, and Travis Doering)
- 2012 *Terrestrial Laser Scanning, 3D and Reflective Imagery Documentation of a Newly Discovered Group of Prehistoric Native American Petroglyphs*. National Park Service, Capital District, Washington, D.C. (Travis Doering and Lori Collins)
- 2012 *Archaeological Resource Sensitivity Modeling in Florida State Parks District 2: The Northeast Region*. Florida Department of Environmental Protection, Division of Recreation and Parks, Tallahassee, FL. (Lori Collins, Jeffrey Du Vernay, Steven Fernandez, and Travis Doering)
- 2011 *The Takalik Abaj Monumental Stone Sculpture Project: High Definition Digital Documentation and Analysis*. Guatemalan Proyecto Nacional Tak'alik Ab'aj, Ministry of Culture and Sports, and the Director General of Cultural and Natural Patrimony, the Institute of Anthropology and History, Guatemala City, Guatemala, C.A. (Travis Doering and Lori Collins)
- 2011 Observations of Beach Cusp Evolution at Melbourne Beach, Florida, USA. *Geomorphology* 129(1-2):131-140. (Joseph van Gaalen, Sarah Kruse, Giovanni Coco, Travis Doering, and Lori Collins)
- 2010 Revisiting Kaminaljuyú Monument 65 in Three-Dimensional High Definition. In *The Place of Sculpture in Mesoamerica's Preclassic Transition: Context, Use, and Meaning*, edited by Clark, Guernsey and Arroyo. The 2007 Dumbarton Oaks Pre-Columbian Symposium, Antigua, Guatemala, 5-6 October 2007. Dumbarton Oaks, Washington, D.C. (Travis Doering and Lori Collins)
- 2010 Mesoamerican Sculpture: Three-Dimensional Documentation to Dissemination. Proceedings from the 37th Meeting of Computer Applications and Quantitative Methods in Archaeology, *Making History Interactive*. CAA 2009 Williamsburg, Williamsburg, VA. (Travis Doering and Lori Collins)
- 2010 *Terrestrial Laser Scanning Survey and CAD of the Florida Caverns Visitor's Center, Marianna, Florida (8JA1068)*. Hammond Design Group, LLC and the Florida Department of Environmental Protection, Division of Recreation and Parks, Tallahassee, FL. (Lori Collins and Travis Doering)

SELECTED PROFESSIONAL PRESENTATIONS

- 2018 Collins, Lori, Travis Doering, and Margo Schwadron
Heritage at Risk: How 3D Spatial and Imaging Tools are Helping Managers and Researchers Better Preserve, Protect, and Interpret the Castillo de San Marcos and Fort Matanzas, St. Augustine, Florida. 70th Annual Meeting of the Florida Anthropological Society, May 2018, St. Petersburg, Florida.
- 2018 Penders, Thomas, Lori Collins, and Travis Doering
Digital Strategies to Preserve our Nation's Space History: Cape Canaveral Air Force Station. 70th Annual Meeting of the Florida Anthropological Society, May 2018, St. Petersburg, Florida.
- 2018 Doering, Travis and Lori Collins
Improving Heritage Tourism with Digital Archaeology: The City of St. Petersburg and 3D Archaeological Applications. 70th Annual Meeting of the Florida Anthropological Society, May 2018, St. Petersburg, Florida.
- 2018 Doering, Travis and Lori Collins
The History and Digital Documentation of the Medieval Haghpats Monastery Complex in Armenia. 21st Biennial New College Conference on Medieval & Renaissance Studies, Sarasota, Florida.
- 2018 Doering, Travis and Lori Collins
The Haghpats Monastery Complex Lori Province, Armenia. Reading the Natural World: Perceptions of the Environment and Ecology in the Global Middle Ages & Renaissance. 24th Annual ACMRS Interdisciplinary Conference, Phoenix, Arizona
- 2018 Robinson, Tonian, Lori D. Collins, Talib Oliver-Cabrera, Travis Doering, David Eilers, Shimon Wdowinski, Henok G Kiflu, Sarah Kruse, Jorge Gonzalez, Garrett Speed, Richard McKenzie, Noelia Garcia
Using multiple high-resolution surveying techniques to observe Sinkhole collapse in West Central Florida. 2018 IEEE/PES Transmission and Distribution Conference and Exposition, Denver, CO.
- 2017 Collins, Lori and Travis Doering
Leveraging 3D in Libraries. University of South Florida Tampa, University of Miami, Florida International University, VIP: The SHIFT, Paraprofessional Conference December 18, 2017. University of South Florida, Marshall Student Center, Tampa.
- 2017 Collins, Lori and Travis Doering
Heritage Management and Digital Collections Development Using 3D and Imaging Approaches. SPAR 3D Expo and International Conference 2017, April 3-5. Houston, TX.
- 2017 Doering, Travis and Lori Collins
3D Digital Documentation and Analysis of the Reef Bay Valley Petroglyphs, St. John, U.S. Virgin Islands National Park. National Center for Preservation Technology and Training (NCPTT) Summit on Digital Preservation, April 18-20. New Orleans, LA.
- 2017 Collins, Lori and Travis Doering
Preserving Our Nation's Space History: Historic Landmark 3D Preservation at Cape Canaveral Air Force Station, Florida. Florida Trust for Historic Preservation 39TH Annual Conference, Preservation Reinvented for Art & Enterprise. St. Petersburg, Florida, May 18-20, 2017.

- 2017 Doering, Travis and Lori Collins
Haghpat Monastery Complex, Armenia. Presentation to meeting of Armenian historians and writers. USF Library, Tampa, Florida, February, 2017.
- 2016 Collins, Lori and Travis Doering
New Technologies in Heritage Documentation. Historic Properties Workshop, Preservation Foundation of Palm Beach, Palm Beach. Florida. November 17, 2017.
- 2016 Córdova Tello, Mario, Travis Doering, Lori Collins, and Carolina Meza Rodríguez
El registro 3D de la escultura en Chalcatzingo y sus alcances en la conservación. Third International Congress on Cultural Heritage and New Technologies. Tools and Languages for Museums, November 28 – 30, National Museum of Anthropology in Mexico City.
- 2016 Collins, Lori and Travis Doering
Preserving Landscapes through Spatial Technologies Research Symposium, University of South Florida School of Geosciences
- 2015 Collins, Lori and Travis Doering
3D Survey and New Technologies for Heritage Preservation and Documentation Projects. Archaeological Institute of America, Jacksonville Chapter. University of North Florida, Jacksonville. February 21, 2015
- 2014 Doering, Travis, Lori Collins, Mario Córdova Tello, Carolina Meza Rodríguez, and Omar Espinosa Severino
3D Terrestrial Laser Scanning Survey at Chalcatzingo, Morelos, Mexico. Prospection Symposium. Patrimonio Cultural y las Nuevas Tecnologías – Una vision contemporánea, El Primer Congreso Internacional, Auditorio Fray Bernardino de Sahagún, Museo Nacional de Antropología, Mexico City December 3-6, 2014.
- 2014 Collins, Lori D., Travis F. Doering, Margo Schwadron, James McLeod, and Jorge Gonzalez
LiDAR and 3D Documentation at the Ninety Six National Historic Site, South Carolina: Using Digital Preservation Strategies to Better Manage, Protect, and Interpret the Only Existing American Revolutionary War Tunnel. General Session: Geophysics, Modeling, and Chemical Analyses. General Session: Geophysics, Modeling, and Chemical Analyses. Southeastern Archaeological Conference, Proceeding from the 71ST Annual Meeting, Nov. 12-15, 2014, Greenville, SC
- 2014 Doering, Travis F., Lori D. Collins, Margo Schwadron, and Ken Wild
3D Documentation and Analysis of the Reef Bay Valley Petroglyphs, St. John, U.S. Virgin Islands. General Session: Geophysics, Modeling, and Chemical Analyses. Southeastern Archaeological Conference, Proceeding from the 71ST Annual Meeting, Nov. 12-15, 2014, Greenville, SC
- 2013 Collins, Lori D., Travis F. Doering
Educational, Research and Curriculum Developments for TLS & 3D. 3D Documentation Conference, FARO Technologies, Orlando, FL. (Lori Collins and Travis Doering)
- 2013 Doering, Travis F., Lori D. Collins
Heritage Preservation and Terrestrial Laser Scanning (TLS). 3D Documentation Conference, FARO Technologies, Orlando, Florida

- 2013 Collins, Lori D., Travis F. Doering
Using Laser Scanning to Document, Analyze, and Share Carved Stone Monuments from Mesoamerica: Case Studies from Mexico and Guatemala. 2013 SPAR International Conference, Digital Historic Preservation Session, Colorado Springs, Colorado.
- 2013 *University-Company Collaborations, and Latest from Universities*. 2013 SPAR International Conference. Panelist/Discussant. Colorado Springs, CO. (Travis Doering)
- 2012 *The Future of Documentation, Analysis, Preservation, and Management of Imperiled World Heritage: Terrestrial Laser Scanning, High-Resolution Imaging, and Spatial Technologies at Chalcatzingo, Mexico*. Homenaje a David Grove: Chalcatzingo a 80 Años de su Descubrimiento, Historia de las Investigaciones en Chalcatzingo. Ex Convento de Tepoztlán. Morelos, Mexico. (Travis Doering and Lori Collins)
- 2012 *New Directions for Cultural Resources in the CESU: Improving Management, Interpretation, and Research Using Terrestrial and Aerial LiDAR, GPS, and other Spatial and Imaging Survey Technologies*. Cooperative Ecosystem Studies Units Network 2012 National Meeting, Plenary Session Presentation, Integrating Cultural Resource Management in Ecosystem Studies: Past Projects and Future Directions. Howard University School of Law, Washington, D.C. (Lori Collins and Travis Doering)
- 2012 *New Directions for Heritage Preservation Opportunities Using Terrestrial Laser Scanning: From the Field to the Classroom and Beyond*. Multimedia presentation to the FARO Technologies 3D Documentation Conference, Orlando, FL. (Lori Collins and Travis Doering)
- 2012 *United States – Egypt LiDAR Workshop, Cairo, Egypt*. Participating instructor in a LiDAR workshop to the Egyptian National Authority for Remote Sensing and Space Sciences (NARSS), Ministry of State for Scientific Research, Arab Republic of Egypt. Conducted in collaboration with Hamilton College (host), USGS Earth Resources Observation and Science Program, Open Topography Facility with the San Diego Supercomputer Center, and Aerometric LiDAR Solutions. (Lori Collins and Travis Doering)
- 2011 Technology Display Presentations: Using Terrestrial LiDAR for Historic Preservation and Documentation. Society for Historical Archaeology Conference, Austin, TX. January, 2011. (Lori Collins and Travis Doering)
- 2011 *Increasing Archaeological Visibility with Holistic Documentation Strategies that Connect Communities*. Keynote workshop presentation at the International Symposium on Conservation and Cultural Management in Monuments, Landscapes, and World Heritage Sites: Overcoming the Challenges of Conservation in the XXI Century, Conservation and Restoration of Heritage Property, Granada, Spain, (Lori Collins and Travis Doering)
- 2011 *The La Venta Stone Monument Documentation Project: New Directions in Iconography and Preservation Opportunities for Carved Stone Monuments in Mesoamerica*. Paper presented at the 76th Annual Meeting of the Society for American Archaeology, Mesoamerican Origins: Papers in Honor of Mary D. Pohl, Sacramento, CA. (Lori Collins, Travis Doering, and Mary E. D. Pohl)
- 2011 *Observations on Formative Period Obsidian and its Distribution*. Paper presented at the 76th Annual Meeting of the Society for American Archaeology, Mesoamerican Origins: Papers in Honor of Mary D. Pohl, Sacramento, CA. (Travis Doering)

- 2011 *Technology Display Presentations: Using Terrestrial LiDAR for Historic Preservation and Documentation*. Paper presented at the 44th Society for Historical Archaeology Conference, Austin, TX. (Lori Collins and Travis Doering)
- 2011 *Takalik Abaj, Guatemala, Using 21st Century Technologies at a 2,500 Year Old Site*. Presentation to the Institute of Maya Studies, Invited Speaker, February 16, 2011, Miami, FL. (Travis Doering and Lori Collins)
- 2011 *Using Terrestrial Laser Scanning and Visualization of the Worlds Cultural Heritage to Educate, Engage, and Connect Communities*. Presentation to the 2011 Supercomputing Conference, Seattle, WA. (Lori Collins and Travis Doering)
- 2010 *Using Terrestrial LiDAR for Heritage Documentation in Mexico*. Presentation and demonstration to the Consejo de Arqueología, Instituto Nacional de Antropología e Historia (INAH), Mexico City. June 24-25, 2010. (Travis Doering and Lori Collins)
- 2009 *High Definition Documentation Survey (HDDS): Applications to Artifact and Monument Heritage Preservation*. Paper presented at the 53rd International Congress of Americanists, ICA 53, Restoration and Conservation of the Cultural Heritage of the Americas Symposium, Dr. Clara Bargellini Cioni and Dr. Humberto Rodríguez-Camilloni, Coordinators. Mexico City, Mexico. (Travis Doering and Lori Collins)

PEER REVIEWS

- 2018 National Science Foundation proposal
- 2017 Journal of Cultural Heritage “Accuracy assessment for photogrammetry models of heritage structures”
- 2016 National Science Foundation proposal
- 2015 Geoscience
- 2015 PeerJ
- 2013-2015 National Science Foundation proposals (3)