

Doctor class title

Digital Twins and Cultural Heritage: Existential Implications

Dominique Rissolo
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CURRENT POSITIONS

- Assistant Research Scientist, Cultural Heritage Engineering Initiative, Qualcomm Institute, UC San Diego
- Adjunct Professor, Department of Anthropology, San Diego State University
- Adjunct Associate Professor, School of Geography and Earth Sciences, McMaster University

EDUCATION

- | | |
|------|---|
| 2001 | Ph.D. Anthropology; Emphasis in Archaeology
University of California, Riverside |
| 1998 | M.A. Anthropology
University of California, Riverside |
| 1994 | B.A. Anthropology; Archaeology Option, Minor in Geological Sciences
San Diego State University |

SELECTED RECENT PUBLICATIONS

Accepted or In Press (2019-Present)

Bartolomei, Cristiana, Falko Kuester, Eric Lo, Caterina Morganti, and Dominique Rissolo

2021 The Geisel Library: The Brutalist Architecture of William Pereira. In *Digital Modernism Heritage Lexicon*, edited by C. Bartolomei, A. Ippolito, and S.H. Tanoue Vizioli. Springer (accepted).

Attenni, Martina, Marika Griffio, Carlo Inglese, Alfonso Ippolito, Eric Lo, and Dominique Rissolo

2021 The Flexibility of Massive Data Capture: Rapid 3D Documentation and the Fountains of Rome. *Studies in Digital Heritage* (accepted).

Fortin, Julien, Sam Meacham, Dominique Rissolo, Christophe LeMaillot, and Fred Devos

2021 Environmental Challenges, Technical Solutions, and Stand Operating Procedures for Data Collection in Photogrammetric Studies toward a Unified Database of Objects and Features in Underwater Caves in Mexico. *The International Archives of the Photogrammetry, Remote Sensing, and Spatial Information Sciences* (accepted).

Calantropio, Alessio, Dominique Rissolo, and Evan Kovacs

2021 Pre- and Self-Calibration of Underwater Cameras for Photogrammetric Documentation of Submerged Archaeological Sites. In *Proceedings of the 9th International Congress on Archaeology, Computer Graphics, Cultural Heritage, and Innovation*. Editorial Universitat Politècnica de Valencia, Spain (accepted).

Chatters, James C., William O. Adams Jr., Diana Arano Recio, Dominique Rissolo, and Helena Barba Meineke

2021 Use of a Novel, Low-Cost 3D Ct-Scan Viewer by the Hoyo Negro Project, Quintana Roo, Mexico. In *Proceedings of the 9th International Congress on Archaeology, Computer Graphics, Cultural Heritage, and Innovation*. Editorial Universitat Politecnica de Valencia, Spain (accepted).

In Print (2019-Present)

Rissolo, Dominique

2020 In the Realm of Rain Gods: A Contextual Survey of Rock Art across the Northern Maya Lowlands. *Heritage* 2020(3):1094-1108.

Vid Petrovic, Dominique Rissolo, Eric Lo, Scott Blair, Philippe Rouja, Jean-Pierre Rouja, and Falko Kuester

2020 The Bermuda 100 Project: An Island-Scale Digital Atlas for Underwater Cultural Heritage. *Advisory Council on Underwater Archaeology Proceedings*, edited by Victor Mastone and Calvin Mires, pp. 43-48. Society for Historical Archaeology.

Calantropio, Alessio, Filiberto Chiabrando, Brett Seymour, Evan Kovacs, Eric Lo, and Dominique Rissolo

2020 Image Pre-Processing Strategies for Enhancing Photogrammetric 3D Reconstruction of Underwater Shipwreck Datasets. *The International Archives of the Photogrammetry, Remote Sensing, and Spatial Information Sciences XLIII-B2-2020:941-948*.

MacDonald, Brandi L., James C. Chatters, Eduard G. Reinhardt, Fred Devos, Sam Meacham, Dominique Rissolo, Barry Rock, Chris Le Maillot, David Stalla, Marc D. Marino, Eric Lo, and Pilar Luna Erreguerena

2020 Paleoindian Ochre Mines in the Submerged Caves of the Yucatan Peninsula, Quintana Roo, Mexico. *Science Advances* 6(27):1-13.

Morganti, Caterina, Cecilia Mazzoli, Eric Lo, Cristina Bartolomei, Dominique Rissolo, and Falko Kuester

2020 UAV for Mapping Historic Buildings: Geisel Library of University of California, San Diego. In *D-SITE, Drones - Systems of Information on Cultural Heritage for a Spatial and Social Investigation*, edited by Salvatore Barba, Sandro Parrinello, Marco Limongiello, and Anna Dell'Amico, pp. 218-225. Pavia University Press, Pavia, Italy.

Glover, Jeffrey B., Jessica Moss, and Dominique Rissolo (eds.)

2020 *Digital Archaeologies, Material Worlds (Past and Present)*. Proceedings of the 45th Annual Conference on Computer Applications and Quantitative Methods in Archaeology. Tübingen University Press, Tübingen, Germany.

Rissolo, Dominique, Michael R. Hess, José Huchim Herrera, Eric Lo, Vid Petrovic, Fabio E. Amador, and Falko Kuester

2019 Comprehensive Digital Documentation and Preliminary Structural Assessment of Satunsat: A Unique Maya Architectural Labyrinth at Oxkintok, Yucatan, Mexico. *The International Archives of the Photogrammetry, Remote Sensing, and Spatial Information Sciences* Volume XLII-2/W15:989-992.

Rissolo, Dominique

2019 Foreword. In *Analysis, Conservation, and Restoration of Tangible and Intangible Cultural Heritage*, edited by Carlo Inglese and Alfonso Ippolito, pp. xvi-xvii. IGI Global, Hershey, PA.

Rissolo, Dominique

2019 Foreword. In *Conservation, Restoration, and Analysis of Architectural and Archaeological Heritage*, edited by Alfonso Ippolito and Carlo Inglese, pp. xiv. IGI Global, Hershey, PA.

Vaughan, Andrew, Jeffrey B. Glover, and Dominique Rissolo

2019 Detecting Undocumented Maya Archaeological Sites in the Yalahau. In *Archaeological Methods and Applications in Multispectral Image Processing*, edited by Lauren Santini, Willem VanEssendelft, and Bryce Davenport. Oxbow Press, Oxford, UK.

SELECTED RECENT PROFESSIONAL PAPERS (2019-Present)

Rissolo, Dominique

2021 An Overview and Synthesis of Paleocoastal Research on the Yucatan Peninsula. Paper presented at the 86th Annual Society for American Archaeology Meetings (virtual).

Kuester, Falko. Vid Petrovic, Eric Lo, Dominique Meyer, Dominique Rissolo, Jean-Pierre Rouja, Philippe Rouja

2021 Towards Large Scale Digital Twins of Maritime Heritage Structures. Paper presented at the Sixth Biennial Marine Transportation System Innovative Science and Technology Conference (virtual).

Huang, Corly, Qiming Chen, Vid Petrovic, Dominique Rissolo, and Leanne Chukoskie

2021 Interactive Game-Based Exploration of an Underwater Paleontological Site. Paper presented at the 7th International Conference of the Immersive Learning Research Network (virtual).

Rissolo, Dominique, Roy Jaijel, Beverly Goodman, Patricia Beddows, Derek Smith, Jeffrey B. Glover

2020 Paleocoastal Reconstruction of an Ancient Maya Trading Port, Quintana Roo, Mexico. Poster presented at the 2020 Ocean Sciences Meeting, San Diego, CA.

Drohobytsky, Danylo, Dominique Rissolo, Travis W. Stanton, José Francisco Osorio Leon, Eric Lo, Jeremy D.

Coltman, Karl A. Taube, Dominique Rissolo, Falko Kuester

2019 Comprehensive Multi-Resolution Digital Documentation and Analysis of the Architecture and Iconography of Chichen Itza. Paper presented at VI Congreso Internacional, El Patrimonio Cultural y Las Nuevas Tecnologías, Queretaro, Mexico.

Rissolo, Dominique, Vid Petrovic, Michael Hess, Eric Lo, Dominique Meyer, Christopher McFarland, and Falko Kuester

2019 Multimodal Data Fusion and Analysis for Heritage Structures. Paper presented at the Engineering Mechanics Institute Conference, Caltech, Los Angeles, CA.

Rissolo, Dominique, Vid Petrovic, Alberto Nava Blank, James C. Chatters, Blaine Schubert, Pilar Luna Erreguerena, and Falko Kuester

2019 The Submerged Paleoamerican Cave Site of Hoyo Negro, Mexico: Recent Advances in Virtual Taphonomy. Paper presented at the American Association for the Advancement of Science – Pacific Division Meetings, Ashland, Oregon.

Rissolo, Dominique

2019 A Reexamination of Postclassic Maya Cave Altars along the Central Coast of Quintana Roo. Paper presented at the 84th Annual Society for American Archaeology Meetings, Albuquerque, NM.

RECENT PLENARY AND KEYNOTE

- 2021 The Cultural Heritage Engineering Initiative: Recent Visual Analytics Research for Digital Twin Applications. Arqueológica 2.0 9th International Congress/3rd GEORES-Geomatics and Preservation, Valencia, Spain (with Falko Kuester; virtual).
- 2021 Engineering a Future for the Past: The Strengths and Shortcomings of Digital Archaeology. Society for California Archaeology Annual Meeting (virtual).
- 2019 Beyond the Model. Rip, Model & Learn. School of Architecture, Sapienza, University of Rome.

MUSEUM AND ART EXHIBITIONS

- 2018 Turin 1911. INDIGO, Jacobs School of Engineering and the Division of Arts & Humanities, Exhibitor
- 2015 Maya Hidden Worlds Revealed. San Diego Natural History Museum. Content Expert.
- 2009 The Genographic Project. San Diego Museum of Man. Coordinator.

GRANT PROGRAM COMMITTEES (Over 1,650 grant and fellowship proposals reviewed)

- National Geographic Society, Committee for Research and Exploration, Reviewer Circle, 2018-
- National Geographic Society/Waitt Grants Program, 2007-2016
- National Geographic Society, Genographic Project Legacy Fund, 2007-2016
- Rapid Ocean Conservation Grants Program, 2013-2017
- Explorers Club Exploration Fund Grant Program, 2015-2017
- Council of American Overseas Research Centers, Multi-Country Research Fellowship Program, 2011-2012

EDITORIAL BOARDS

- *Eng-Advances in Engineering*, 2020-
- *Studies in Digital Heritage*, 2017-
- *SDSU Occasional Archaeological Papers*, 2006-2007

ORGANIZATION COMMITTEES AND BOARDS

- National Ocean Exploration Forum Advisory Board 2018
- National Oceanic and Atmospheric Administration (NOAA) Ocean Exploration Advisory Board 2014-
- National Geographic Society, Genographic Project Advisory Board, 2007-2015
- Fundación OLAS Advisory Committee 2013-
- Maritime Alliance Advisory Committee, 2010-2011
- OceanGate Foundation Advisory Board, 2011-2012
- SDSU Friends of Anthropology Steering Committee 2008-2009

CURRENT FIELD PROJECTS

- Proyecto Arqueológico Subacuático Hoyo Negro, Quintana Roo, Mexico; Co-director
- Proyecto Costa Escondida, Quintana Roo, Mexico; Co-director
- Proyecto de Arquitectura Subterránea de Quintana Roo, Mexico; Director
- 100 Island Challenge
- Bermuda 100
- Project LIMBER
- Turin 1911

DIGITAL DOCUMENTATION OF HERITAGE SITES

Piazza Mattei, Piazza Farnese, and Piazza Santa Maria in Trastevere, Rome, 2018

Villa Poniatowski, Rome, 2018

Borgo Medievale and Castello de Valentino, Turin, 2017

Conil excavations Quintana Roo, Mexico, 2017

Cenote Azul Cave, Quintana Roo, Mexico, 2016

Chicleros Cave, Quintana Roo, Mexico, 2016

Aluxes Cave, Quintana Roo, Mexico, 2016

Altar Cave, Quintana Roo, Mexico, 2016

Satunsat at Oxkintok, Yucatán, Mexico, 2016

Church at Ecab, Boca Iglesias, Quintana Roo, Mexico, 2014

Oratorio Cave, Quintana Roo, Mexico, 2014



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