

Samantha Thi Porter

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Summary

I am a digital archaeologist on a mission to both use technology to make learning about the past more accessible, and to make new technologies accessible to researchers and citizen scientists alike.

My specialties include 3D scanning and printing, advanced digital imaging, virtual and augmented reality, and prehistoric technology.



Experience

2017 – present	Digital Preservation Specialist, Liberal Arts Technologies and Innovation Services, U of MN
2015-2016	Media Services Fellow, Digital Content Library, U of MN
2015	Research Assistant in 3D Animation and Digital Reconstruction
2010-2013	Teaching Assistant, U of MN
2008-2009	Intern, American Museum of Natural History

Education

2019	PhD in Anthropology	University of Minnesota, Twin Cities
2014	MA in Anthropology	University of Minnesota, Twin Cities
2009	BA in Anthropology, Urban Design	New York University

Major Grants, Awards, and Fellowships

- MUSE Award from the American Alliance of Museums (2019) Bronze award for Mobile Experience.
- 3M Art and Technology Award (2018) Developed Augmented Reality App for the Minneapolis Institute of Art
- University of Minnesota Doctoral Dissertation Fellowship (2016)
- Leakey Foundation Grant (2015)
- University of Minnesota Thomas F. Wallace Fellowship (2012)
- National Science Foundation Graduate Research Fellowship (Honorable Mention, 2011 and 2012)

Skills and Certifications

- 3D Scanning and 3D printing
- Reflectance transformation imaging
- Image editing and processing
- French (reading, speaking, writing)
- Game design and development
- SCI SCUBA Certified
- Part 107 FAA Certified (drone piloting)

Peer Reviewed Publications

Daniel Griffin, Samantha T. Porter, Matthew L. Trumper, Kate E. Carlson, Daniel J. Crawford, Daniel Schwalen, Colin H. McFadden (2021) Gigapixel Macro Photography of Tree Rings. *Tree-Ring Research*; 77 (2): 86–94. doi: <https://doi.org/10.3959/TRR2021-3>

Samantha T. Porter, Morgan Roussel, and Marie Soressi (2019). A Comparison of Châtelperronian and Protoaurignacian Lithic Technology Using Data Derived from 3D Models. *Journal of Computer Applications in Archaeology*.

Matthew Douglass, Dennis Kuhnel, Matthew Magnani, Luke Hittner, Michael Chodoronek, and Samantha T. Porter (2017). Community Outreach, Digital Heritage and Private Collections: A case study in understanding archaeological remains on private lands through public engagement in the North American Great Plains. *World Archaeology*: 49(5): 623-638.

Samantha T. Porter, Nadine Huber, Christian Hoyer, and Harald Floss (2016). Portable and low-cost solutions to the imaging of Paleolithic art objects: A comparison of photogrammetry and reflectance transformation imaging. *Journal of Archaeological Science: Reports*, 10: 859–863.

Matthew Magnani, Matthew Douglass, and Samantha T. Porter (2016). Closing the seams: resolving frequently encountered issues in photogrammetric modelling. *Antiquity*, 354: 1654–1669.

Samantha T. Porter, Morgan Roussel, and Marie Soressi (2016). A Simple Photogrammetry Rig for the Reliable Creation of 3D Artifact Models in the Field: Lithic Examples from the Early Upper Paleolithic Sequence of Les Cottés (France). *Advances in Archaeological Practice*, 4(1): 71-86.

Gilliane F. Monnier, Jammi L. Ladwig, and Samantha T. Porter (2012). Swept under the rug: the problem of unacknowledged ambiguity in lithic residue identification. *Journal of Archaeological Science*, 39:3284-3300.

Academic and Professional Conference Presentations

Colin McFadden and Samantha Porter (2019). *Virtual Escape Rooms for Educational Engagement*. Annual MNCodes Summit, Minneapolis, Minnesota.

Samantha T. Porter and Colin McFadden (2019). *'Riddle Mia This' – A Mobile, Augmented Reality, Museum Puzzle Experience*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Krakow, Poland.

Ilaria Patania, Kathryn Ranhorn, Jason Lewis, Samantha Porter, Debra Colarossi, Husna Mashaka, Julius Ogutu, and Christian Tryon (2019). *The geoarchaeological history of Kisese II Rockshelter, Tanzania*. Annual Meeting of the Paleoanthropology Society, Albuquerque, New Mexico.

Gilbert Tostevin, Petr Škrdla, Gilliane Monnier, Elisabetta Boaretto, Daniel Richter, Michael Glascock, Lenka Lisá, Ladislav Nejman, Antonín Přichystal, Aldona Kurzawska, Ondřej Mlejnek, Kristina Golubiewski-Davis, Samantha Porter, Jordan Jennings, and Katharine Baldwin. (2019). *Macro- and Micro-archaeology in the Middle Danube: the role of Tvarožná X in understanding the Middle to Upper Paleolithic transition*. Annual Meeting of the Paleoanthropology Society, Albuquerque, New Mexico.

Samantha T. Porter (2019). *Digital Humanities at the Minneapolis Institute of Art*. Invited talk at Carnegie Mellon University, Pittsburgh, Pennsylvania.

Colin McFadden and Samantha Porter (2018). *Capturing Reality: An Introduction*. MinneWebCon Conference, Minneapolis, Minnesota.

Samantha T. Porter, Colin McFadden, and Gilbert Tostevin (2018). *Multi-Scalar Approaches to Structure-from-Motion Site Documentation at Crvena Stijena, Montenegro*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Tübingen, Germany.

Samantha T. Porter, Morgan Roussel, and Marie Soressi (2017). *A Comparative Analysis of Châtelperronian and Protoaurignacian Blade Core Technology Using Data Derived from 3D Models*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Atlanta, Georgia.

Kristina Golubiewski-Davis, Samantha T. Porter, Matt Edling, John Soderberg, and Gilbert Tostevin (2017). *The Use and Reuse of 3D Scanned Lithic Refits*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Atlanta, Georgia.

Samantha T. Porter, Kele Missal, and Leszek Pawlowicz (2016). *A Comparison of Methods for Creating 3D Models of Obsidian Artifacts*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Oslo, Norway.

Samantha T. Porter and Nadine Huber (2015) *Portable and Low-cost Solutions to the Imaging of Paleolithic Art Objects: Photogrammetry and Polynomial Texture Mapping*. Computer Applications and Quantitative Methods in Archaeology Annual Meeting, Sienna, Italy.

Academic Conference Posters

Daniel Griffin, Colin McFadden, Malik Nusseihbeh, Kate Carlson, Matthew Trumper, Daniel Crawford, and Samantha Porter (2019). *Ultra High Resolution Imaging in Dendrochronology*. Annual meeting of the American Geophysical Union.

Samantha T. Porter, Morgan Roussel, Marie Soressi, and Gilbert Tostevin (2019). *A lithic behavioral approach to cultural transmission hypotheses across the Late Mousterian, Chatelperronian, and Protoaurignacian in Western Europe*. Annual Meeting of the Paleoanthropology Society, Albuquerque, New Mexico.

Gilliane Monnier, Gilbert Tostevin, Mile Baković, Nicola Borovinić, Carolina Mallol, Goran Čulafić, Eugene Morin, Elisabetta Boaretto, Goran Pajović, Paloma Vidal-Matutano, Marga Jambrina, Ángel Carrancho, Dušan Mihailović, Norbert Mercier, Mike Morley, Samantha Porter, and Robert Whallon (2019). *New excavations at Crvena Stijena, Montenegro: a multidisciplinary investigation of fire use by Neanderthals in Southeastern Europe*. Annual Meeting of the Paleoanthropology Society, Albuquerque, New Mexico.

Daniel Rodriguez Osorio, Samantha T. Porter, and Steve Kosiba (2019). *Photogrammetry Modeling and GIS Analysis at Rumiqolqa (Cusco, Peru): A Multi-ethnic Labor Colony Occupied during Inca and Spanish Colonial Rule*. Annual Meeting of the Society for American Anthropology, Albuquerque, New Mexico.

Kate Carlson, Malik Nusseihbeh, Colin McFadden, Samantha Porter, Matthew Trumper, Daniel Griffin (2018). *High-Resolution Imaging and Browser Based Measurement in Dendrochronology*. American Association of Geographers Annual Meeting, New Orleans, Louisiana.

Kathryn L. Ranhorn, Samantha Porter, Jason Lewis, and Christian Tryon (2018). *Virtual Reality at Kisese II: A Painted Rock Shelter in Kondoa, Central Tanzania*. Annual Meeting of the Society of Africanist Archaeologists, Toronto, Canada.

Samantha T. Porter (2016). *A Portable, Low-Cost, Open-Design Rig for Reflectance Transformation Imaging*. Annual Meeting of the European Society for Human Evolution, Madrid, Spain.

Samantha T. Porter (2015). A Portable Photogrammetry Rig for the Reliable Creation of High-Quality 3D Artifact Models in the Field. Poster Presentation. Annual Meeting of the Society for American Archaeology, San Francisco, California.

Matthew Magnani, Matthew Douglass, and Samantha T. Porter (2015). Low-cost Collection Digitization: Streamlining Photogrammetric Methodologies. Annual Meeting of the Society for American Archaeology, San Francisco, California.

Academic Workshops Given

Immersive Pedagogy (2019). Participant. Workshop on designing pedagogy for augmented and virtual reality applications. Carnegie Mellon University, Pittsburgh, Pennsylvania.

Paleolithic Social Transmission (2019). Participant. Collaborative design of social transmission experiments, specifically relating to lithic technology. University of New Mexico, Albuquerque, New Mexico.

Learning Photogrammetry (2019). Workshop Leader. Half day workshop on close range photogrammetry including theory and practical exercises. Carnegie Mellon University, Pittsburgh, Pennsylvania.

Capturing 3D Objects with the Camera You've Already Got (2018). Co-workshop Leader with Colin McFadden. Half day photogrammetry workshop done in conjunction with MinneWebCon 2018. Minneapolis, Minnesota.

Photogrammetry for Archaeology (2017). Workshop Leader. Two day workshop on photogrammetry of both objects and spaces for use in archaeological contexts. Leiden University, the Netherlands.

Published Mobile Applications

Virtual MISLS (2019). A Google Cardboard VR application that leads users through a virtual exhibit telling the story of the Military Intelligence Language School at Fort Snelling, Minnesota. In collaboration with Kathrine Hayes, Colin McFadden, Kevin Falcetano, and Daniel Shervheim. Developed in Unity. Available for iOS and Android.

Riddle Mia This (2018). An augmented reality escape game created for the Minneapolis Institute of Art. In collaboration with Colin McFadden and Charles McGregor. Developed in Unity. Available for iOS and Android.

Public Engagement, Presentations, and Media

Ambassador for the IF/THEN program of the American Association for the Advancement of Science (AAAS), which aims to promote positive role models of women in STEM to middle school aged girls.

Volunteer and consultant with Science and Social Studies Adventures (SASSA), a non-profit dedicated to engaging middle schoolers through innovative learning experiences.

Colin McFadden and Samantha Porter (2019). *'Riddle Mia This'*. Presentation of the at the February 2019 meeting of the Twin Cities chapter of the International Game Developers Association.

Panelist on *The Future of Immersive Experiences* as part of 2018 Twin Cities Startup Week.

Panelist on *Designing Interactive Installations* at GlitchCon Digital Games Festival 2018, hosted by Twin Cities PBS.

Interview with Artworks Podcast from the National Endowment for the Arts on the 'Riddle Mia This' project. August 2, 2018.