Charles Perreault

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EDUCATION

2011	Ph.D., Anthropology, University of California, Los Angeles
2007	M.Sc., Anthropology, Université de Montréal, Canada
2004	B.Sc., Anthropology, Université de Montréal, Canada

PROFESSIONAL APPOINTMENTS

2020–Present	Associate Professor, School of Human Evolution and Social Change, Arizona State University
2014–2020	Assistant Professor, School of Human Evolution and Social Change, Arizona State University
2013–2014	Assistant Professor, Department of Anthropology, University of Missouri
2011–2013	Omidyar Fellow, Santa Fe Institute, New Mexico

AFFILIATIONS

2021–Present	IHO Research Scientist, Institute of Human Origins, Arizona State University
2017–Present	Faculty Affiliate, Center for Archaeology and Society, Arizona State University
2015–2021	Research Faculty, Institute of Human Origins, Arizona State University
2015–Present	Core Faculty, Center for Social Dynamics & Complexity, Arizona State University
2017–Present	Associate, Coalition for Archaeological Synthesis
2015–2016	Honors Faculty, Barrett, The Honors College, Arizona State University

PUBLICATIONS

Books

1. 2019. **Perreault C.** The Quality of the Archaeological Record, *The University of Chicago Press*.

Journal Articles

26 2026. **Perreault, C**. Cultural evolution accelerated human range expansion by more than two orders of magnitude. *Proceedings of the National Academy of Sciences*123 (11), e2523038124.

25. 2025. **Perreault, C.** A georeferenced ethnolinguistic map of Driver et al. Indian Tribes of North America (1953). *Journal of Open Archaeological Data*. 13(18), pp. 1–5. DOI: https://doi.org/10.5334/joad.185

24 2024. Paige, J. **and Perreault, C.** 3.3. million years of stone tool complexity suggests that cumulative culture began during the Middle Pleistocene. *Proceedings of the National Academy of Sciences*. 121(26): e2319175121.

23 2023. Perreault, C. Archaeology after the loss of innocence. *Antiquity*, 97(396): 1369-1380.

22 2023. Paige, J. and **Perreault, C**. A dataset describing the manufacturing of stone tools over 3 million years. *Journal of Open Archaeology Data*. 11(12): 10.5334/joad.114.

21 2023. Paige, J. and **Perreault, C**. How surprising are lithic reduction strategies? The information entropy of the Modes A-I framework. *Journal of Lithic Technology.*

20. 2022. Shen, X., Z. Dongju, **C. Perreault,** Xia, H., Liu, Yishou, and Fahu, C. Exploitation of lyddite and jasper by Epipaleolithic foragers in the Northeastern Tibetan Plateau and surrounding regions. *Archaeological and Anthropological Sciences*, 14 (7): 1-16.

19. 2022. **Perreault, C.** and R. Boyd. Evolution of social learning with payoff and content bias. *Games*, 13 (7).

18. 2020. Dongju Zhang, Huan Xia, Fahu Chen, Bo Li, Viviane Slon, Ting Cheng, Ruowei Yang, Zenobia Jacobs, Qingyan Dai, Diyendo Massilani, Xuke Shen, Jian Wang, Xiaotian Feng, Peng Cao, Melinda A Yang, Juanting Yao, Jishuai Yang, David B Madsen, Yuanyuan Han, Wanjing Ping, Feng Liu, **Charles Perreault**, Xiaoshan Chen, Matthias Meyer, Janet Kelso, Svante Pääbo,

Qiaomei Fu. Denisovan DNA in Late Pleistocene sediments from Baishiya Karst Cave on the Tibetan Plateau. *Science*, 370 (6516): 584-587.

17. 2018. Derex, M., **C. Perreault**, and R. Boyd, Divide and conquer: intermediate levels of population fragmentation maximize cultural accumulation. *Philosophical Transactions B,* 373: 20170062*.*

16. 2018. **Perreault C.**, Time-averaging slows down rates of change in the archaeological record. *Journal of Archaeological Methods and Theory.* 25 (3): 953-964**.**

15. 2017. Madsen, D. B., **C. Perreault**, D. Rhode, Y. Sun, M. Yi, K. Brunson, P. J. Brantingham. Early foraging settlement of the Tibetan Plateau highlands. *Archaeological Research in Asia*, 11, 15-26.

14. 2016. Mathew, S. and **C. Perreault,** Cultural history, not ecological environment, is the main determinant of human behavior. *Proceedings of the Royal Society B*, 283: 20160177.

13. 2016. **Perreault, C.**, M. T. Boulanger, A. M. Hudson, D. Rhode, D. B. Madsen, J. W. Olsen, M. L. Steffen, J. Quade, M. D. Glascock, and P. J. Brantingham, Characterization of obsidian from the Tibetan Plateau by XRF and NAA. *Journal of Archaeological Science Reports*, 5: 392-399.

12. 2015. Mathew, S. and **C. Perreault**, Behavioural variation in 172 small-scale societies indicates that social learning is the main mode of human adaptation. *Proceedings of the Royal Society B*, 282: 20150061.

11. 2014. Rhode, D., P. J. Brantingham, **C. Perreault**, D. Madsen, Mind the gaps: testing for hiatuses in regional radiocarbon date sequences. *Journal of Archaeological Science*, 52: 567-577.

10. 2013. **Perreault, C.**, P. J. Brantingham, S. L. Kuhn, S. Wurz, G. Xing, Measuring the complexity of lithic technology. *Current Anthropology*, 54 (S8), S397-S406.

9. 2013. P. J. Brantingham, X. Gao, D. B. Madsen, D. Rhode, **C. Perreault**, J. Woerd, and J. Olsen, Late occupation of the high-elevation northern Tibetan Plateau based on cosmogenic, luminescence, and radiocarbon ages. *Geoarchaeology*, 28 (5): 413-431.

8. 2012. **Perreault, C.,** The pace of cultural evolution. *PLoS One*. 7(9): e45150.

7. 2012. **Perreault C.,** C. Moya and R. Boyd, A Bayesian approach to the evolution of social learning. *Evolution and Human Behavior*, 33(5): 449-459.

6. 2012. **C. Perreault** and S. Mathew., Dating the origin of language using phonemic diversity. *PLoS One*, 7(4): e35289.

5. 2012. Kandler, A., **C. Perreault** and J. Steele., Cultural evolution in spatially structured populations: A review of alternative modeling frameworks. *Advances in Complex Systems*, 15(1-2).

4. 2011. **Perreault C**.,The impact of site sample size on the reconstruction of culture-histories. *American Antiquity,* 76(3): 547-572.

3. 2010. **Perreault, C**. and P. J. Brantingham, Mobility-driven cultural transmission along the forager-collector continuum, *Journal of Anthropological Archaeology*, 30(1): 62-68.

2. 2010. Brantingham P. J. and **C. Perreault**. Detecting the effects of selection and stochastic forces in archaeological assemblages. *Journal of Archaeological Science*, 37(12): 3122-3225.

1. 2010. **Perreault, C.** A note on the reconstruction of animal social network from independent small group observations. *Animal Behaviour*, 80(3): 551-562.

Peer-Reviewed Commentaries

1. 2014. K. Panchanathan, S. Mathew, and **C. Perreault**, Explaining group-level traits requires distinguishing process from product *Behavioral and Brain Sciences*, 37(3): 269-270. **[Invited comment]**

INVITED TALKS

2025	A macroarchaeology perspective to the stone tool record: Tracking long-term trends in complexity. Symposium Keynote. Max Planck Institute of Geoanthropology, Jena, Germany, October 21st 2025.
2025	Seeing is not understanding: Micro, meso and macro-level behavioral signals in taphonomic contexts. Session keynote. Kiel Conference. Kiel University, Germany, March 26th 2025.
2024	3.3 million years of stone tool complexity suggests that cumulative culture began during the Middle Pleistocene. Aarhus University, Denmark, September 24th 2024.

2022 Macroarchaeology: How can archaeology make novel and useful contributions? 28th European Association of Archaeologists Annual Meeting, Budapest, Hungary, September 3 2022.

2022 Macroarchaeology: How can archaeology make novel and useful contributions? University of Cambridge, UK, January 28th.

2018 When did our capacity for cumulative culture evolve? College of Earth Environmental Sciences, Lanzhou University, China, June 30th.

2013 The origins of social learning. Evolutionary studies at the University of Missouri, October 29th.

2012 Why is culture adaptive? IGERT Program in Evolutionary Modeling Seminar Series. Washington State University-Pullman. September 27th.

2012 The origins of cumulative culture. Wenner-Gren Symposium #145 on "Alternative Pathways to Complexity: Evolutionary Trajectories in the Middle Paleolithic and Middle Stone Age, Stockholm, Sweden. June 5th.

2012 The ecological and cultural determinants of human behavior. Behavioral Sciences Discussion Group, Santa Fe Institute. February 22nd.

2011 The pace of cultural evolution. Behavior, Evolution, and Culture Speaker Series, UCLA. May 23rd.

CONFERENCE ACTIVITY

2024 Huang, C. H., Paige, J. and C. Perreault (Chairs) Symposium. Big ideas to match our future: Big data and macroarchaeology. 89th Annual Meeting of the Society of American Archaeology, New Orleans, LA, April 20th 2024.

2024 Paige, J. and C. Perreault. Developing a macro-archaeological infrastructure to help assess the relationship between hominin technological and biological change. 93rd Annual Meeting of the American Association of Biological Anthropologists. Los Angeles, CA, March, 22nd 2024.

2023 Paige, J. and C. Perreault. How surprising are contents of lithic assemblages? The information entropy of the stoneworking Modes A-I framework. *92st Annual Meeting of the American Association of Biological Anthropologists*, Portland, OR, March 28th.

2023 Paige, J. and C. Perreault. Are changes in Rates of Technological Change Robust to Error? A paired Bayesian and simulation approach to assessing the Pleistocene record. *88th Annual Meeting of the Society for American Archaeology*, Portland, OR, March 31st.

2022 Paige, J. and C. Perreault, The evolution of cumulative culture in the hominin lineage. *91st Annual Meeting of the American Association of Biological Anthropologists*, Denver, CO, March 26th.

2022 Paige, J. and C. Perreault, Evaluating the reliability of lithic technology for detecting prehistoric migrations. *Annual Paleoanthropology Society Meeting*, Denver, CO, March 23rd.

2019 Perreault C., A macroarchaeology approach: how can archaeology make novel and useful contributions to evolutionary theory?, *84th Annual Meeting of the Society for American Archaeology*, Albuquerque, NM, April 12th.

2019 *Paige, J., *Dytchkowskyj, D. and C. Perreault, Measuring the complexity of stone tool technologies from the Lower Paleolithic through the Late Holocene, *84th Annual Meeting of the Society for American Archaeology*, Albuquerque, NM, April 12th.

2018 *Paige, J., and C. Perreault, Were early stone tool technologies genetically transmitted? Comparing passerine nests and Acheulean handaxes, 2nd Cultural Evolution Society Conference, Tempe AZ, October 22th.

2018 *Paige, J., *Dytchkowskyj, D. and C. Perreault, Measuring the complexity of stone tool technologies from the Lower Paleolithic through the Late Holocene, 2nd Cultural Evolution Society Conference, Tempe AZ, October 22th.

2018 *Paige, J., and C. Perreault, Was Acheulean technology genetically constrained? Comparing variation in Acheulean tools to variation in North American bird nests, *83rd Annual Meeting of the Society for American Archaeology*, Washington DC, April 13th.

2017 Madsen, D., P. J. Brantingham, Yongjuan S., Rhode, D., Mingjie, Y., and C. Perreault, Reconstructing the initial human occupation of the Northern Tibetan Plateau, *European Geosciences Union General Assembly 2017*, Vienna, Austria, April 25th.

2017 **Miltimore, D., *Paige, J., and C. Perreault, Comparing traditional and photogrammetric 3D model-based measurements of lithic artifacts, *82nd Annual Meeting of the Society for American Archaeology*, Vancouver, Canada, March 30th.

2017 *Paige, J., and C. Perreault, Assessing likelihood of convergence in flake attributes, *Paleoanthropology Society 2017 Annual Meeting*, Vancouver, Canada, March 28th.

2016 Hudson, A. M., Olsen, J. W., Quade, J., Lei, G., Huth, T., Zhang, H, C. Perreault, Wetlands sediment record from the upper Yarlung Tsangpo valley, southwest Tibetan Plateau, reveals mid-Holocene Epipaleolithic human occupation coincident with increased early and mid-Holocene wetness driven by enhanced Indian Monsoon rainfall, *American Geophysical Union Fall Meeting, San Francisco, December 13th*.

2016 P. J. Brantingham and C. Perreault, Where is the evidence for selection? Climate change and the colonization of the Northern Tibetan Plateau, *81st Annual Meeting of the Society for American Archaeology*, Orlando, April 7th.

2015 Perreault. C., Measuring the complexity of lithic technology. *80th Annual Meeting of the Society for American Archaeology*, San Francisco, April 17th.

2013 Perreault. C., The scale of the archaeological record and the origins of social complexity. *112th Annual Meeting of the American Anthropological Association*, Chicago, November 21st.

2012 Perreault. C., The pace of cultural evolution, *78th Annual Meeting of the Society for American Archaeology*, Honolulu, April 17th.

2011 Perreault. C., The pace of technological evolution. *Annual Archaeology Graduate Student Conference*, Fowler Museum, UCLA. February 19th.

2010 Rhode, D., Madsen, D., Brantingham, P. J., and C. Perreault, Early Human occupation on the northeast Tibetan Plateau (Rhode, D., Madsen, D., Brantingham, P. J). *American Geophysical Union Fall Meeting*, San Francisco. December 16th.

2010 Perreault. C., Cultural evolution is faster than biological evolution. *109th Annual Meeting of the American Anthropological Association*, New Orleans. November 18th.

2007 Perreault. C., Mobility topology and cultural transmission: Exploring the forager – collector continuum. *73th Annual Meeting of the Society for American Archaeology*, Vancouver, Canada. March 28th.

RESEARCH FUNDING ACTIVITY

2025 (submitted) *S-STEM: using Human origins to Motivate Advancement in STEM (HUMANS)* (Denise SU (PI,) C. Campisano, P. LePore, Perreault. C., J. Silk CO-PIs).

National Science Foundation

$1.99 million

2025 (submitted) *Developing an open-source digital infrastructure for extracting structured data from archaeological text.*. Digital Humanities Advancement Grant. Paige, J. PI, Perreault, C. CO-PI).

National Endowment for the Humanities

$133,640

2019 *Testing the Reliability of Stone Tools in Reconstructing Cultural Relationships in Prehistory.* Perreault, C. (PI).

Leaky Foundation.

$8,718

2016 Field Research Funds, Institute of Human Origins, ASU

$10,000

2010 Cotsen Friends of Archaeology Summer Research Funds, UCLA

$6,500

Other funding

2006–2010	Canada Graduate Scholarships Program (SSHRC), Doctoral Fellowship
2006	Fond Québécois de la Recherche sur la Société et la Culture (FQRSC), Doctoral Research Scholarship (Declined)
2005–2006	Canada Graduate Scholarship Program (SSHRC), Master's Scholarships
2005	Fond Québécois de la Recherche sur la Société et la Culture (FQRSC), Master in Research Scholarship (Declined)

TEACHING AWARDS

2020	Excellence in Undergraduate Teaching Award in the School of Human Evolution and Social Change
2018	Nominated for Outstanding Doctoral Mentor Award, ASU Graduate College
2016	Excellence in Teaching Award in the School of Human Evolution and Social Change

TEACHING

ASU

SHESC Early Start Program
Summer 2018
Early start is a bridge program designed to facilitate the transition from high school to college. It targets underrepresented students that are at risk of not graduating.

ASB 591 – The Quality of the Archaeological Record (Graduate seminar)
Spring 2016, Spring 2022

ASM 591 – Professionalism II (Graduate seminar)
Fall 2022, Fall 2025

ASB 222 – Buried Cities and Lost Tribes (In person)
Average enrollment: 450

Spring 2015, Fall 2015, Spring 2016, Spring 2017, Spring 2018, Fall 2018, Spring 2019, Fall 2019, Fall 2020, Fall 2021, Spring 2021, Spring 2022, Spring 2024, Spring 2025, Fal 2025, Fall 2026

ASB 222 – Buried Cities and Lost Tribes (Online)
Average enrollment: 300
Summer 2015 A, Summer 2016 A, Summer 2016 B, Summer 2017 A, Summer 2017 B, Summer 2019 A, Summer 2019 B, Summer 2020 A, Summer 2020 B, Spring 2021, Summer 2021 A, Summer 2021 B, Spring 2022, Summer 2023 A, B, Summer 2024 A, B, Summer 2025, A, B.

ASM 246 – Human Origins (In Person)
Enrollment: 121
Spring 2019

University of Missouri

World Archaeology
Spring 2014

Fundamentals of Archaeology
Fall 2013, Spring 2014

ASU GRADUATE MENTORING

Primary Mentor

2022—Present	Pietro Beltrame
2018–Present	Cindy Hsin-yee Huang (PhD granted Spring 2026)
2015–2022	Jonathan Paige (PhD granted Fall 2022)

Committee Member

2025–Present	Aarilee Loenzen
2019–Present	Patrick Fahey
2017–Present	John Murray

ASU UNDERGRADUATE MENTORING

2015–2020 Derek Miltimore

For his work with me on stone tool analysis, Derek won in 2016 the Undergraduate Research Award from SHESC and, in 2017, was co-author with my graduate student Jonathan Paige on a poster that won Second Place at the Institute for Social Science Research Poster Award, and was admitted to the graduate program at the University of Missouri, Columbia.

ASU SERVICE

College level service

Fall 2023 – Spring 2026 Senator, College Senate, ASU

Unit level service

Spring 2024 – Spring 2026 SHESC Academic Program/ 7 Year Review Committee

Fall 2024 – Ongoing Member of the SHESC Executive Committee

The role of the executive committee is to advise the directorate of the School on strategic planning and provide faculty input.

Fall 2021 – Spring 2023 SHESC Graduate/Undergraduate Committee

Fall 2021 – Spring 2023 SHESC Approach Convener – Archaeology

Fall 2021 Institute of Human Origins Operation Plans and Structure Committee

Fall 2018–Spring 2019 Member of the Archaeology Approach Faculty Search Committee

Fall 2018–Spring 2021 Member of the SHESC Executive Committee.

Spring 2018 Member of the Evolutionary Anthropology Approach Faculty Search Committee

Spring 2018	Member of the Archaeology Approach Faculty Search Committee
Fall 2017–Spring 2018	Co-organizer, Evolution of Social Complexity Speaker Series
Spring 2018	Member of the Reynold Ruppé Prize in Archeology Committee
Spring 2017	Member of the Graduate Student Evaluation Committee, Archaeology Approach
Fall 2015–Spring 2017	Chair of SHESC Colloquium Series Committee
Fall 2014–Spring 2015	Member of the Evolutionary Anthropology Search Committee

Professional level service

Spring 2019–Spring 2022	Member of the Minority Scholarships Committee of the Society for American Archaeology
Fall 2017–Fall 2018	Organizing Committee, Cultural Evolution Society Conference 2018
Spring 2015	Scientific Committee, The Cultural Evolution of Technology Workshop, Conference on Complex Systems 2015

FIELD RESEARCH EXPERIENCE

2018	Tibet Research Group, Lanzhou University (PI Fahu Chen) Role: Scientific advisor
2016–2017	Human Origins in Northeast Asia Project Role: PI
2007–Present	Tibet Paleolithic Project, Tibet, China (PI P. Jeffrey Brantingham)
2011–2014	Universal Patterns in the Emergence of Complex Societies, John Templeton Foundation Grant, Santa Fe Institute (PI Jeremy A. Sabloff)
2007–2010	Joint Mongolian-Russian-American Archaeological Expeditions, Mongolia (PI John Olsen)
2010	Inferring Structure and Forecasting Dynamics on Evolving Networks MURI Project, UCLA.

2006–2007	Mathematical and Simulation Modeling of Crime Project, UCLA.
2003–2005	Projet Méganticois, Québec, Canada
2003	Proyecto Huaca Santa Clara, Peru
2002	Proyecto Santa Universidad de Montreal, Peru

PEER-REVIEW ACTIVITIES

Journal Articles

1. Animal Behavior
2. Cliodynamics: The Journal of Quantitative History and Cultural Evolution (2015)
3. Behavioral Ecology and Sociobiology
4. Evolution & Human Behavior (2014, 2015, 2018)
5. Journal of Archaeological Science
6. Journal of Human Evolution (2016)
7. PaleoAnthropology
8. Springer (book chapter) (2014)
9. Texas A&M University Press
10. Proceedings of the Royal Society B (2023)
11. Scientific Reports
12. Frontier of Digital Humanities (2019)
13. Journal of Paleolithic Archaeology (2020)
14. Nature and Human Behavior (2020, 2021)
15. Lithic Technology (2022)
16. Antiquity (2023)
17. Science Advances (2024)
18. American Antiquity (2025)

Grant Proposals

1. Leaky Foundation (Spring 2019, Fall 2019)
2. Leverhulme Trust (Summer 2026)

Public Outreach and Community Service

Sep. 2024	Public lecture **"***Technological evolution: How humans adapt to their environment*". Lucy 50 Monthly Lecture Series, Institute of Human Origins, also available online.
Spring 2023	Wrote "Denisovan DNA" article for Becoming Human website (becominghuman.org).
Fall 2012 –Spring 2013	STEM mentor for high school students (Santa Fe MASTERS Program High School, 4 students)

Selected Media Appearance

Spring and summer 2025	Media coverage of 2025 article
July 2025	Independent Expert Commentary, ABC newspaper (leading newspaper in Spain, several international news outlets, including *Scientific American*.
June-Oct 2024	Media Coverage of 2024 *PNAS* article, 44 international news outlets, including *Scientific American*, Ars Technica
October 2020-December 2020	Media Coverage of 2020 *Science* article, 65 international news outlets.
November 2020	National Public Radio - KJZZ Radio Interview
January 2020	*Super Interessante* (Brazilian science magazine) *Wired Magazine*
May 2012	*Les Samedis du Monde*, Radio-Canada