# Simon C Brewer

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**Research Interests**

Understanding complex systems in space and time

Analysis of spatial and spatio-temporal data

Changes in past climate and terrestrial ecosystem response

Understanding societal response to environmental changes

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**Education**

2002 Ph.D. Université d’Aix-Marseille I, Marseille, France

* Biosciences de l’Environnement.

1997 MSc. Royal Holloway and Bedford College,

University of London, UK.

* Quaternary Sciences.

1996 BSc. Kings College, University of London, UK.

* Biological Sciences (specialty: Ecology).

**Academic Positions**

2019-Present Associate Professor

Geography Department, University of Utah, USA

2011-2019 Assistant Professor

Geography Department, University of Utah, USA

2008-2011 Post-Doctoral Research Associate (Advisor: Prof. S.T. Jackson)

Department of Botany, University of Wyoming, USA

2007-2008 Post-Doctoral Research Associate (Advisor: Prof. L. Francois)

Laboratory of Planetary and Atmospheric Physics, Liege, Belgium

2006-2007 Post-Doctoral Research Associate (Advisor: Dr. L. Borgniat)

CEMAGREF, Aix-en-Provence, France

2002-2006 Post-Doctoral Research Associate (Advisor: Prof. J. Guiot)

CEREGE-CNRS, Aix-en-Provence, France

**Grants and Funding**

* Current: EAR-Climate: Mountain Glacier Contribution to Sea Level CE 1900-2100 (U.S. National Science Foundation, Co-PI. $626,852)
* Finished: Modeling the Vegetation of the Past (U.S National Science Foundation Paleoclimate Perspectives on Climate Change Program; PI. $271,584);

## Publications (\* indicates student author)

## Peer-reviewed publications:

\*Han, J, Wan, N, Brewer, SC, McCrum, M. (2023). Spatial access to Emergency General Surgery (EGS) services and EGS bypass behaviours in California, Annals of GIS, 1-11

McKnite AM, Job KM, Nelson R, Sherwin CMT, Watt KM, Brewer SC. (2022). Medication based machine learning to identify subpopulations of pediatric hemodialysis patients in an electronic health record database. Inform Med Unlocked. 34:101104. doi: 10.1016/j.imu.2022.101104.

Watt, JH, Brunelle, A, Brewer, S, Bentz, B, Morris, J, DeRose, RJ. Holocene record of vegetation change and mountain pine beetle outbreaks at Lake of the Woods, Montana, USA. Western North American Naturalist 82 (3), 524-536

\*Richards Steed, R., Bakian, A.V., Smith, K.R., Wan, N., Brewer, S., Medina, R., VanDerSlice, J. (2022). Evidence of transgenerational effects on autism spectrum disorder using multigenerational space-time cluster detection. International Journal of Health Geographics 21 (1), 1-13. https://doi.org/10.1186/s12942-022-00313-4

Medina, R.M., Brewer, S., Linke, A.M., Nicolosi, E.A., Allain, M., Tharp, D. (2022). The sociospatial ecology of deaths during police interactions in the United States, 2016–2020. Political Geography 98, 102710

Codding, B.F., Coltrain, J.B., Louderback, L., Vernon, K.B., Magargal, K.E., Yaworsky, P.M., Robinson, E., Brewer, S.C., Spangler, J.D. (2022). Socioecological dynamics structuring the spread of farming in the North American Basin-Plateau Region. Environmental Archaeology 27 (4), 434-446

\*Vernon, K.B., Yaworsky, P.M., Spangler, J., Brewer, S., Codding, B.F. (2022). Decomposing habitat suitability across the forager to farmer transition. Environmental Archaeology 27 (4), 420-433

\*Bhattarai, A., Cova, T.J., Brewer, S.C. (2022). Perceived Recovery Trajectories in Post-Earthquake Nepal–A Visual Exploration With Self Organizing Maps. IEEE Open Journal of the Computer Society 3, 111-121

Shyr, D.C., Kelly, B., Brewer, S.C. (2022). Predicting Relapse In Pediatric Patients with Acute Leukemia Undergoing Stem Cell Transplant Using Interpretable Machine Learning-A Proof-of-Concept Study of Applying Machine Learning, Pediatric Blood and Cancer, 69.

Fuhriman, C., Medina, R.M., Brewer, S. (2022) Introducing a Dataset of Multi-Scale Geographies of ISIS Ideology from ISIS Sources. Terrorism and Political Violence 34 (4), 817-834

\*Kim, K., Yang, W., Brewer, S. (2022). Analyzing Change in Business Activity before, during, and after Autonomous Shuttle Bus Service in the Old Las Vegas Downtown Area. Journal of Urban Planning and Development 148 (1), 04021065

\*Wilson, K.M., McCool, W.C., Brewer, S.C., Zamora-Wilson, N., Schryver, P.J., Lamson, R., Huggard, A.M., Coltrain, J.B., Contreras, D.A., Codding, B.F. (2022). Climate and demography drive 7000 years of dietary change in the Central Andes. Scientific reports 12 (1), 1-16, 1

Park, K., Singleton, P.A., Brewer, S., Zuban, J. (2022). Pedestrians and the Built Environment during the COVID-19 Pandemic: Changing Relationships by the Pandemic Phases in Salt Lake County, Utah, USA. Transportation Research Record, 03611981221083606

Qiu, C., Ciais, P., Zhu, D., Guenet, B., Chang, J., Chaudhary, N., Kleinen, T., Li, X., Müller, J., Xi, Y., Zhang, W., Ballantyne, A., Brewer, S., et al. (2022). A strong mitigation scenario maintains climate neutrality of northern peatlands, One Earth, 5:1, 86-97, https://doi.org/10.1016/j.oneear.2021.12.008.

\*Khanal, R., Dhungel, S., Brewer, S.C., Barber, M.E. (2021). Statistical Modeling to Predict Climate Change Effects on Watershed Scale Evapotranspiration. Atmosphere 12 (12), 1565

Campbell, MJ, Dennison, PE, Kerr, KL, Brewer, SC and Anderegg, WRL. (2021) Scaled biomass estimation in woodland ecosystems: Testing the individual and combined capacities of satellite multispectral and lidar data. Remote Sensing of Environment, 262, 112511

\*Kim, K., Garcia, I., Brewer, S. (2021). Spatial relationship between eviction filings, neighborhood characteristics, and proximity to the central business district: A case study of Salt Lake County, Utah. Housing Policy Debate. https://doi.org/10.1080/10511482.2020.1838598

Qiu, C, Ciais, P, Zhu, D, Guenet, B, Peng, S, Petrescu, AMP, Lauerwald, R, Makowski, D, Gallego-Sala, AV, Charman, DJ and Brewer, SC (2021). Large historical carbon emissions from cultivated northern peatlands. Science advances 7 (23), eabf1332. DOI: 10.1126/sciadv.abf1332

Codding, BF, Brenner Coltrain, J, Louderback, L, Vernon, KB, Magaral, KE, Yaworsky, PM, Robinson, E, Brewer, SC, Spangler, JD (2021). Socioecological dynamics structuring the spread of farming in the North American Basin-Plateau Region. Environmental Archaeology, 1-13

Jones, TL, Brenner Coltrain, J, Jacobs, DK, Porcasi, J, Brewer, SC, Buckner, JC, Perrine, JD, Codding BF. (2021). Causes and consequences of the late Holocene extinction of the marine flightless duck (Chendytes lawi) in the northeastern Pacific. Quaternary Science Reviews 260, 106914

Carter, VA, Brunelle, A, Power, MJ, DeRose, RJ, Bekker, MF, Hart, I, Brewer, S, Spangler, JD, Robinson, E, Abbott, M, Maezumi, SY, Codding, BF. (2021). Legacies of Indigenous land use shaped past wildfire regimes in the Basin-Plateau Region, USA. Nature Communications Earth & Environment 2, 72. https://doi.org/10.1038/s43247-021-00137-3

Medina, R.M., Nicolosi, E.A., Brewer, S. and Moore, E. (2021). A Geographical Analysis of Socioeconomic and Ideological Drivers of Hate Crime in the United States. Applied Geospatial Research, 12:2. DOI: 10.4018/IJAGR.2021040103

Park, K., Rigolon, A., Choi, D., Lyons, T., Brewer, S., (2021). Transit to parks: An environmental justice study of transit access to large parks in the U.S. West. Urban Forestry & Urban Greening, 60, 127055.

\*Brussel, T. and Brewer, S. (2021). Functional paleoecology & the pollen-plant functional trait linkage. Frontiers in Ecology and Evolution, 8, 501.

\*Yaworsky, P.M., Vernon, K.B., Spangler, J., Brewer, S. and Codding, B.F. (2020). Advancing predictive modeling in archaeology: An evaluation of regression and machine learning methods on the Grand Staircase-Escalante National Monument. PLoS One, https://doi.org/10.1371/journal.pone.0239424

\*Heyer, J., Brewer, S., Brunelle, A., Leys, B., Lundeen, Z., Rittenour, T., Power, M. (2020). Age control for the Lake Bottom oxbow in the Dolores River watershed of eastern Utah, USA. Quaternary International, <https://doi.org/10.1016/j.quaint.2020.09.013>

\*Sullivan, P.R., Campbell, M.J., Dennison, P.E., Brewer, S., Butler, B. (2020). Modeling Wildland Firefighter Travel Rates by Terrain Slope: Results from GPS-Tracking of Type 1 Crew Movement. Fire 2020, 3(3), 52; https://doi.org/10.3390/fire3030052

\*Li, J., Hassan, D., Brewer, S. and Sitzenfrei, R. (2020). Is Clustering Time-Series Water Depth Useful? An Exploratory Study for Flooding Detection in Urban Drainage Systems. Water, 12(9), 2433; https://doi.org/10.3390/w12092433

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\*Fuhriman, C., Medina, R.M. and Brewer, S. (2020). Introducing a Dataset of Multi-Scale Geographies of ISIS Ideology from ISIS Sources. Terrorism and Political Violence. https://doi.org/10.1080/09546553.2020.1742707

\*Vernon, K.B., Yaworsky, P.M., Spangler, J., Brewer, S. and Codding, B.F. (2020). Decomposing Habitat Suitability Across the Forager to Farmer Transition. Environmental Archeology, https://doi.org/10.1080/14614103.2020.1746880

\*Sabouri, S., Brewer, S. and Ewing, R. (2020). Exploring the relationship between ride-sourcing services and vehicle ownership, using both inferential and machine learning approaches. Landscape and Urban Planning, 198, https://doi.org/10.1016/j.landurbplan.2020.103797

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Giesecke, T., Wolters, S., van Leeuwen, J.F.N., van der Knaap, P.W.O., Leydet, M. and Brewer, S. (2019). Postglacial change of the floristic diversity gradient in Europe. Nature Comm., 10(1), 1-7.

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\*Brussel, T., Minckley, T.M., Brewer, S.C. and Long, C.J. (2018). Community‐level functional interactions with fire track long‐term structural development and fire adaptation. Journal of Vegetation Science, 29:3. DOI: 10.1111/jvs.12654

\*Jameel, Y., Brewer, S., Fiorella, R.P., Tipple, B.J., Terry, S., and Bowen, G.J. (2018). Isotopic reconnaissance of urban water supply system dynamics. Hydrology and Earth System Sciences Discussions, DOI: 10.5194/hess-2018-283

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Medina, R.J., Nicolosi, E., Brewer, S. and Linke A.M. (2018) Geographies of Organized Hate in America: A Regional Analysis. Annals of the American Association of Geographers. DOI: 10.1080/24694452.2017.1411247

\*Marsicek, J., Shuman, B., Bartlein, P.J, Shafer, S.L. and Brewer S. (2018) Reconciling divergent trends and millennial variations in Holocene temperatures. Nature. DOI: 10.1038/nature25464

Giesecke, T. and Brewer, S. (2018). Notes on the postglacial spread of abundant European tree taxa. Veg. History and Archaeobotany, 27:2, 337-349. DOI: 10.1007/s00334-017-0640-0

\*Heyer, J., Brewer, S. and Shinker, J.J. (2017). Using high-resolution reanalysis data to explore localized western North America hydroclimate relationships with ENSO. Journal of Climate, doi: 10.1175/JCLI-D-16-0476.1

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Giesecke, T., Brewer, S., Finsinger, W., Leydet, M. and Bradshaw, R.H.W. (2017). Patterns and dynamics of European vegetation change over the last 15000 years. Journal of Biogeography, doi: 10.1111/jbi.12974

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\*Jameel, Y., Brewer, S., Good, S.P., Tipple, B.J., Ehleringer, J.R., and Bowen, G.J. (2016) Spatiotemporal variation in the tap water isotope ratios of Salt Lake City: a novel indicator of urban water system structure and dynamics, Water Resources Research, 52, 1-20.

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\*Tasic, I., Porter, R.J., Brewer, S. (2016). Applications of Generalized Additive and Bayesian Hierarchical Models for Areal Safety Analysis: Case Study of an Urban Multimodal Transportation System in Chicago, Illinois. Transportation Research Record Journal of the Transportation Research Board 2601:99-109

Nogués-Bravo, D., Veloz, S., Holt, B.G., Singarayer, J., Valdes, P., Davis, B.A.S., Brewer, S., Williams, J.W. & Rahbek C. (2016) Amplified plant turnover in response to climate change forecast by Late Quaternary records. Nature Climate Change, doi: 10.1038/NCLIMATE3146

\*Panthail, J.K., Brewer, S.C. & Burian, S.J. (2015). Statistical Modeling of the PM2.5-Albedo-Streamflow Relationship in Parley’s Creek, Utah, Using MODIS Albedo Data. American Society of Civil Engineers (ASCE). 2638-2647

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\*Arnold, J.D., Brewer, S. and Dennison, P.E. (2014) Modeling climate-fire connections within the Great Basin and Upper Colorado river basin, Western United States. Fire Ecology, 10:2, 64-75

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\*Liu, Y., Brewer, S., Booth, R.K., Minckley, T.A. and Jackson, S.T. (2012). Temporal density of pollen sampling affects the age determination of the mid-Holocene Tsuga (hemlock) decline. Quaternary Science Reviews, 45, 54-59

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Tarasov, P.E., Cheddadi, R., Guiot, J., Bottema, S., Peyron, O., Belmonte, J., Ruiz-Sanchez, V., Saadi, F.A. and Brewer, S. 1998. A method to determine warm and cool steppe biomes from pollen data; application to the Mediterranean and Kazakhstan regions. Journal of Quaternary Science, 13, 335-344.

Peer-reviewed Conference Publications

\*Panthail, J.K., Brewer, S. and Burian, S.J. (2015). Statistical modeling of the PM2.5-Albedo-Streamflow relationship in Parley’s Creek, Utah using MODIS albedo data. EWRI World Environmental and Water Resources Congress, Austin, Texas. May 17-25, 2015

Arnold, L., Bréon, F.-M., Brewer, S., Guiot, J., Jacquemoud, S. and Schneider, J. 2005. The green vegetation as a biosignature on Earth and Earth-like planets. In (eds) Beaulieu, J.P., Lecavelier des Etangs, A. and Terquem, C. Extrasolar Planets: Today and Tomorrow, XIXth IAP Colloquium, Paris, France, 30 June - 4 July 2003. ASP Conference Series, ISBN 1-58381-183-4, vol. CS 321.

Davis, B.A.S. and Brewer, S. 2003. The application of multi-dimensional GIS in palaeoclimate research. 1st ESF-HOLIVAR Workshop on “Combining Climate Proxies”. Lammi Biological Station, Finland, 17-20, April, 2002. [www.gsf.fi/esf\_holivar/](http://www.gsf.fi/esf_holivar/)

Books and/or Book Chapters

Garfinkel-Castro, A., Bushman, T., Sabouri, S., Brewer, S.C., Song, Y. and Park, K. (2020). Cluster analysis. In: (ed.) Ewing, R., and Park, K. Advanced Quantitative Research Methods for Urban Planners, Routledge, 359 pp.

Wheelwright, M., Levine, Z., Garfinkel-Castro, A., Bushman, T., Sabouri, S. and Brewer, S.C. (2020) Principal component and factor analysis. In: (ed.) Ewing, R., and Park, K. Advanced Quantitative Research Methods for Urban Planners, Routledge, 359 pp.

Kim, K., Brewer, S.C. and Ewing, R. (2020) Spatial Econometrics. In: (ed.) Ewing, R., and Park, K. Advanced Quantitative Research Methods for Urban Planners, Routledge, 359 pp.

Heckbert, S., Isendahl, C., Gunn, J., Brewer, S., Scarborough, V., Chase, A.F., Chase, D.V., Costanza, R., Dunning, N., Beach, T., Luzzadder-Beach, S., Lentz, D. and Sinclair, P. (2019). Growing the Maya social-ecological system from the bottom up: complex systems models of resilience. In: Handbook of Historical Ecology and Applied Archaeology, C. Isendahl & D. Stump, eds. Oxford University Press

Brewer, S., Guiot, J., Davis, B.A.S and Barboni, D. (2015). Pollen data as climate proxies. In (ed.) Elias, S. Encyclopedia of Quaternary Science ed. 2, Elsevier, Oxford.

Grimm, E.C., Bradshaw, R.H.W., Brewer, S., Flantua, S., Giesecke, T., Lezine, A.M., Takahara, H., Williams, J.W. (2013). Databases and their applications. In (ed.) Elias, S. Encyclopedia of Quaternary Science ed. 2, Elsevier, Oxford.

Marchant, R., Brewer, S., Webb III, T. and Turvey, S.T. (2009). Holocene Deforestation: A History of Human-Environmental Interactions, Climate Change and Extinction.  In (ed.) Turvey, S.T. Holocene Extinctions. Oxford Unveristy Press.

Brewer, S., Guiot, J. and Barboni, D. (2007). Pollen data as climate proxies. In (ed.) Elias, S. Encyclopedia of Quaternary Science, vol. 4, Elsevier, Oxford, pp 2498-2510.

Roberts, N., Stevenson, A.C., Davis, B., Cheddadi, R., Brewer, S., and Rosen, A. 2004. In: Holocene climate, environment and cultural change in the circum-Mediterranean region. In: Battarbee R.W., Gasse F., and Stickley C.E. (eds), Past Climate Variability through Europe and Africa. Kluwer Academic Publishers, Dordrecht, the Netherlands, pp 343-362.

Selected Conference Abstracts

Brewer S., Giesecke, T., Finsinger, W. and Wolters, S. Estimating long-term functional diversity from pollen data and plant traits. International Association of Vegetation Science, Brno, Czech Republic. 19-24 July, 2015

Brewer S. Ecoinformatics and the Paleoworld. 2014. International Conference on Ecological Informatics, Nanjing, China. 21-23 October, 2014

Brewer S.,Marsicek, J.P, Davis, B.A.S. 2013. Holocene pollen records from the northern mid-latitudes: syntheses, spatial patterns and gradients. AGU, San Francisco, December 9-13 2013

Brewer S., Bartlein, P.J., Harrison, S.P., Jackson, S.T, Marlon, J.R., Marsicek, J.P, Davis, B.A.S., Shuman, B.N., Williams, J.W. 2011. Benchmarking transient paleoclimate simulations: comparisons with terrestrial datasets. AGU, San Francisco, December 5-9 2011

Brewer, S., Bartlein, P.J. and Harrison, S.P. 2011. Benchmark datasets: vegetation and terrestrial climates. INQUA, Berne, Switzerland, July, 21-27, 2011

Brewer, S.,Marsciek, J., Davis, B.A.S. and Shuman, B.N. 2011. Uncertainty in large-scale climate reconstructions. INQUA, Berne, Switzerland, July, 21-27, 2011

Brewer, S. and Jackson, S.T. 2010. Vegetation response to abrupt climate change during the Bolling-Allerod and the Younger Dryas. 95th ESA Annual Meeting, Pittsburgh, USA, 1-6 August 2010.

Jackson, S.T. and Brewer, S. 2009. What do regime shifts of the past indicate about those likely to come? 94th ESA Annual Meeting, Albuquerque, USA, 3-7 August 2009.

Brewer, S., Norris, J.R., Lesser, M.L., Betancourt, J.L. and Jackson, S.T. 2009. Climate variability and the distribution of the ponderosa pine. 94th ESA Annual Meeting, Albuquerque, USA, 3-7 August 2009.

Brewer, S. and Guiot, J. 2008. Recent progress in palaeoclimate reconstructions from pollen data. Keynote talk, XII IPC, Bonn, Germany, 30 August – 5 September 2008

Brewer, S., Francois, L., Cheddadi, R., Laurent, J.-M. and Favre, E. 2008. Comparison of simulated and observed vegetation for the mid-Holocene in Europe. ESF-EuroCLIMATE Meeting, Giens, France, 29-30 September, 2008

Brewer, S. and Guiot, J. 2007. Palaeoclimate simulations: data-model comparisons. EuroCLIMATE Workshop, Aix-en-Provence, France, 7-12 May 2007.

Brewer, S., Guiot, J. Wu, H. and Hély-Alleaume, C. 2006.  Palaeoclimate and palaeovegetation reconstructions from European fossil pollen records by the inversion of a vegetation model. EGU General Assembly, Vienna, Austria. 03/2006.

Brewer, S., Cheddadi, R. and de Beaulieu, J.-L. 2005. The postglacial recolonisation of deciduous Quercus in Europe based on pollen data. Invited talk, Botanical Society of Scotland Symposium on Atlantic Oakwoods, Oban, Scotland, 9/2005.

Brewer, S. and Davis, B.A.S. 2004. The temperature of Europe during the Holocene reconstructed from pollen data. EGU General Assembly, Nice, France.

Brewer, S., Davis, B.A.S and Ortu, E. 2004. Pollen-based climate reconstructions in the Alps: techniques and limitations. 1st ClimAlp Meeting, Aix-les-Bains, France, 1/2004.

Brewer S. and Davis, B.A.S. 2004. Developing a gridded data-set of pollen-based climate reconstructions for the Holocene in Europe. ESF-HOLIVAR Workshop, Bremen, Germany, 2/2004.

Brewer, S. and Davis, B.A.S. 2004. Holocene temperature of Europe reconstructed from pollen data. Workshop on the 8.2ka event, Montréal, Canada, 5/2004.

Brewer, S, Cheddadi, R. and de Beaulieu, J.-L. 2004. Combining pollen databases and genetic data: the recolonisation of deciduous Quercus in Europe. International Palynological Conference, Granada, Spain, 7/2004.

Brewer, S, Cheddadi, R. and Petit, R.J.P. 2004. Fagus sylvatica: postglacial history and genetic diversity. International Palynological Conference, Granada, Spain, 7/2004.

Brewer, S, Cheddadi, R. and de Beaulieu, J.-L. 2001. Postglacial colonization of forest trees inferred from fossil pollen and genetic markers. European Forest History: combining phylogeographical and paleoecological information. Orléans, France, 6/2001.

Invited talks in international conferences and workshops

Brewer S. Producing composite carbon accumulation estimates from peatland records. MilliePeat Workshop, Exeter, UK. 14-15, December, 2015

Brewer S. Reconstructions of past land cover characteristics using pollen and remote sensing data. LandCover6K Workshop, Reading, UK. 7-11, September, 2015

Brewer S. Ecoinformatics and the Paleoworld. International Conference on Ecological Informatics, Nanjing, China. 21-23 October, 2014

Brewer S. Holocene changes in climatic variability. PMIP Paleovariability Workshop, UCL, London, UK. March 12-14, 2014

Brewer S. European age-depth models. Age-depth modeling workshop, Queens University, Belfast, NI. January 13-16, 2014

Brewer, S., Marsicek, J.P, Davis, B.A.S. Holocene pollen records from the northern mid-latitudes: syntheses, spatial patterns and gradients. AGU, San Francisco, USA. December 9-13, 2013

Brewer, S. Spatiotemporal analysis of long-term peatland records. Synthesis Workshop on Holocene Circum-­Arctic Peatland Carbon Dynamics, Bethlehem, PA, USA. October 13-15, 2013

Brewer, S. Statistical and process based models in paleoecology. 50 Pressing Questions in Palaeoecology, Oxford, UK, December 13-14, 2012

Brewer, S. Reconstructions of large scale climate and vegetation patterns from pollen data. Holocene land-cover change in Eastern Asia for climate modelling. Shijiazhuang, China, October 9-11, 2012

Brewer, S. Pollen databases: current progress. Fire-Ice Workshop, Exeter, UK. October 1-5, 2012

Brewer, S. Benchmarking transient paleoclimate simulations: comparisons with terrestrial datasets. AGU, San Francisco, USA. December 5-9, 2011

Brewer, S. Global-scale paleoecological and paleoclimatological studies. What big questions can the Quaternary help us answer? Laramie, Wyoming, USA, November 12, 2011

Brewer, S. Benchmark data sets: vegetation and terrestrial climates. INQUA, Berne, Switzerland, July, 21-27, 2011

Brewer, S. Continental scale climate reconstructions from fossil pollen data: can we improve error propagation? Bayesian Hierarchical Models for High-Resolution Climate Reconstructions, Boulder, Colorado March 24-25, 2011,

Brewer, S., Bartlein, P.J. and Harrison, S. Climate reconstructions from plant fossil data. PMIP3 Meeting, Kyoto, Japan, December 6-10, 2010

Brewer, S., Blois, J., Davis, B.A.S., Shuman, B.N. and Williams, J.W. Mid and high-latitude pollen records. SynTrace Meeting, Oregon, USA, October 9-13, 2010

Brewer, S. Learning from the past: paleoenviromental data and models. Department of the Geophysical Sciences, University of Chicago, Chicago USA, November 20, 2009

Brewer, S. and Guiot, J. Recent progress in palaeoclimate reconstructions from pollen data. Keynote talk, XII IPC, Bonn, Germany, August 30, – September 5, 2008

Brewer, S., Francois, L., Cheddadi, R., Laurent, J.-M. and Favre, E. Comparison of simulated and observed vegetation for the mid-Holocene in Europe. ESF-EuroCLIMATE Meeting, Giens, France, September 29-30, 2008

Brewer, S. and Guiot, J. Palaeoclimate simulations: data-model comparisons. EuroCLIMATE Workshop, Aix-en-Provence, France, May 7-12, 2007.

Brewer, S., Guiot, J. Wu, H. and Hély-Alleaume, C. Palaeoclimate and palaeovegetation reconstructions from European fossil pollen records by the inversion of a vegetation model. ESF-Euroclimate Session, EGU, Vienna, April 2-7, 2006.

Brewer, S., Cheddadi, R. and de Beaulieu, J.-L. The postglacial recolonisation of deciduous Quercus in Europe based on pollen data. Botanical Society of Scotland Symposium on Atlantic Oakwoods, Oban, Scotland. September 14-16, 2005.

Brewer, S., Davis, B.A.S and Ortu, E. Pollen-based climate reconstructions in the Alps: techniques and limitations, 1st ClimAlp Meeting, Aix-les-Bains, France, January, 2004

Brewer S. and Davis, B.A.S. Developing a gridded data-set of pollen-based climate reconstructions for the Holocene in Europe. ESF-HOLIVAR Workshop, Bremen, Germany, February, 2004.

Brewer, S. and Davis, B.A.S. Holocene temperature of Europe reconstructed from pollen data. 8.2ka BP Event Workshop, AGU, Montreal, Canada, May, 2004

Brewer, S, Cheddadi, R. and de Beaulieu, J.-L. Combining pollen databases and genetic data: the recolonisation of deciduous Quercus in Europe. IPC, Granada, Spain, July, 2004

Brewer, S, Cheddadi, R. and de Beaulieu, J.-L. Postglacial recolonisation of oak and beech in Europe. Dept of Paleoecology, Vrije University, Amsterdam, Netherlands. March, 2002

Brewer, S, Cheddadi, R. and de Beaulieu, J.-L. Postglacial colonization of forest trees inferred from fossil pollen and genetic markers. Phylogeography of European forest trees and shrubs and application for their conservation and management, Orléans, France June, 27-30, 2001.

**Teaching**

* 2017. Ecological and environmental modeling (graduate seminar), Geography Department, University of Utah
* 2017-Present. Global Environmental Change, Honors College, University of Utah
* 2017. Ecological and environmental modeling (graduate seminar), Geography Department, University of Utah
* 2014-Present. Introduction to R (short course), Geography Department, University of Utah
* 2014. Open source geospatial software (graduate seminar), Geography Department, University of Utah
* 2012. Applications of time series analysis (graduate seminar), Geography Department, University of Utah
* 2012. Modeling long-term environmental processes (graduate seminar), Geography Department, University of Utah
* 2012-2014. Spatial modeling in GIS, Geography Department, University of Utah
* 2012-Present. Climate change: impacts, adaptation and mitigation, Geography Department, University of Utah
* 2011-Present. Spatial statistics, Geography Department, University of Utah
* Taught short course ‘Introduction to statistics using R’, Univ Cezanne, France (2004-2008), UQAM, Canada (2006-2007), U. Wyoming (2009, 2010), U. Nebraska (2010).

**Awards**

* Superior Teaching Award, 2013, College of Social and Behavioral Science, University of Utah
* Outstanding Mentor Award, 2012, 2014, 2016, Geography Department, University of Utah

**University service**

* Member, Dean search committee, University of Utah, 2013-2014
* Member, Medical Geography search committee, University of Utah, 2013
* Member, GIScientist search committee, University of Utah, 2013
* Departmental Honors advisor, University of Utah, 2014-2016
* UROP reviewer, University of Utah, 2012-2016
* Graduate student advisor:
  + James Arnold (Masters, defended 2013)
  + Alex Headman (Masters, defended 2015)
  + Emily Nicolsi (Masters, defended 2015)
  + Ed Conrad (Masters, defended 2015)
  + Brian Olsen (Masters)
  + Kaila Macdonald (Masters, defended 2014)
  + Ryan Bares (Masters, defended 2014)
  + Thao Vy Nguyen (Masters, defended 2015)
  + Josh Heyer (Masters, defended 2016; PhD)
  + Vanessa Bailey (Masters, defended 2017; PhD)
  + Clair Bidez (Masters, defended 2017)
  + Tom Brussel (PhD, defended 2020)
* Graduate student committee (University of Utah):
  + Paris Latham (Masters, defended 2014)
  + Michael Seth Bogle (Masters)
  + Jared Butler (Masters, defended 2013)
  + Vachel Carter (PhD)
  + Kenneth Dudley (Masters, defended 2014)
  + Michael Freeman (Masters, defended 2014)
  + Liwei Fu (Masters, defended 2015)
  + Dustin Garrett (Masters)
  + Mohd Yusuf Jameel (PhD)
  + Yoshi Maezumi (PhD, defended 2015)
  + Ran Meng (PhD, defended 2014)
  + Clement Miege (PhD, defended 2015)
  + Julie Miller (PhD, defended 2014)
  + Josh Mueller (PhD)
  + Jai Kanth Panthail (Masters)
  + Yi Qi (PhD, defended 2014)
  + Benjamin Ritter (Masters, defended 2014)
  + David Selkowitz (PhD)
  + Corey Unger (Masters, defended 2015)
  + Jennifer Watt (PhD, defended, 05/2013)
  + Blake Wellard (Masters)
  + Steven Lizotte (Masters, defended 2020)
  + Durban Keeler (PhD)
  + Keuntae Kim (PhD)
  + Hassan Ameli (PhD)
  + Sadegh Sabouri (PhD)
  + Debolina Banerjee (PhD)
  + Dong-ah Choi (PhD)
  + Junsik Kim (PhD)
  + Keuntae Kim (PhD)
  + Ben Marconi (PhD)
  + Jiada Li (PhD)
  + Emma Marshall (Masters)
  + Morgan Macdonnell (Masters)
  + Matt Olsen (PhD)
  + Rebecca Steed (PhD)
  + Kripa Thapa (Masters)
  + Susana Velasquez Franco (PhD)
  + Kenneth Blake Vernon (PhD)
  + Peter Yaworksy (PhD)
* Member of student committee (other institutes):
  + Jeremiah Marsicek (PhD, U. Wyoming USA)
  + Yao Liu, (PhD U. Wyoming, USA, defended 2014)
  + Vincent Garreta (PhD CEREGE CNRS 6635, France, defended 2009)
  + Morteza Djamali (PhD IMEP CNRS 6116, France defended 2009)
  + Ali Thabeet (PhD IMEP CNRS 6116, France, defended 2008).

**Other activities**

* Leader of European Pollen Database support group ‘Mapping and data accuracy’
* Member of European Pollen Database support group ‘Database structure’
* Participating member of international working groups:
  + Paleoclimate Modelling Intercomparison Group (http://pmip.lsce.ipsl.fr/)
  + Paleocarbon Modelling Intercomparison Group
  + Global Paleofire Working Group (http://www.gpwg.org)
  + PAGES-HITE (http://www.pages.unibe.ch/science/focus4.html)
  + IHOPE (<http://www.aimes.ucar.edu/activities/ihope.shtml>)
  + Peatlands as Archives of Climate and History
* Organized and ran ESF/HOLIVAR Training course on Quantitative climate reconstruction and data-model comparisons, Toulouse, France, 27 June-8 July 2005
* Editorial board member for Ecological Informatics
* Reviewer for Journal of Geophysical Research, Journal of Quaternary Science, Quaternary Science Reviews, Journal of Paleolimnology, Journal of Vegetation Science, Journal of Applied Meteorology and Climatology, International Journal of Climatology, Grana; The Holocene; Palaeogeography, Palaeoclimatology, Palaeoecology, Journal of Biogeography, Proceedings of the National Academy of Sciences, Nature Communications
* Project reviewer for European Science Foundation, National Science Foundation, German Aerospace Center, Fonds de Recherche en Quebec

**Technical skills**

* Statistical techniques including geostatistics and spatial analysis, regression analysis, multivariate analysis, time series analysis, neural networks, Bayesian analysis and fuzzy logic.
* Relational databases including development and web-based access using CGI and HTML.
* Geographical Information Systems for spatial data analysis and image analysis.
* Programming languages including R, SQL, C/C++, Perl, Python, Fortran and Java
* In addition, I am familiar with a wide range of techniques and programs for data analysis and reduction under Unix (Linux), Mac OSX and Windows environments.
* I am fluent in French and English, and have given presentations and taught in both languages. My thesis and postdoctoral work has involved visiting and collaborating with laboratories across Europe and North America.