DEBORAH KHIDER

PERSONAL INFORMATION

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email khider@usc.edu

website https://www.isi.edu/people/dkhider/

phone +1 (310) 448 8460

EDUCATION

2006–2011 University of Southern California

PhD

GPA: 4.0 · Ocean Sciences
Thesis: *Paleoceanography of the Indonesian Seas over the last 25,000 years*
Advisors: Dr. Lowell D. Stott & Dr. Julien Emile-Geay

2004–2006 University of Southern California

Bachelor of Science

GPA: 3.82 · *Environmental Engineering*
Graduated *Magna cum laude*, Presidential Scholar

2001–2005 Hawaii Pacific University

Bachelor of Science

GPA: 3.93 · *Oceanography and Applied Mathematics*
Graduated *Magna cum laude*

RESEARCH EXPERIENCE

University of Southern California

2021– Lead Scientist, Information Sciences Institute
Research focused on using artificial intelligence in the (paleo)geosciences

2020-2021 Research Scientist, Information Sciences Institute
Research focused on using artificial intelligence in the (paleo)geosciences

2018-2020 Data Scientist, Information Sciences Institute
Research focused on using artificial intelligence in the (paleo)geosciences

2018 Postdoctoral Scholar, Information Sciences Institute
MINT: Model Integration through Knowledge-Rich Data and Process Composition
Supervisor: Dr. Yolanda Gil

2016–2017 Postdoctoral Scholar, Earth Sciences
LinkedEarth: Crowdsourcing data curation and standards development in paleoclimatology.
Supervisor: Dr. Julien Emile-Geay

2013–2015 Postdoctoral Scholar, Earth Sciences

University Of California, Santa Barbara

Probabilistic age modeling of paleoceanographic data.
Supervisor: Dr. Lorraine Lisiecki

2011–2013 Postdoctoral Fellow, Institute for Geophysics

The University of Texas at Austin

Uncertainty quantification of paleoclimatic records and forward modeling of climate proxies using Bayesian Inference.
Supervisors: Dr. Charles Jackson and Dr. Terrence M. Quinn

TEACHING EXPERIENCE

University Of Southern California

2019-present Lecturer, Data Science

DSCI549: Introduction to Computational Thinking and Data Science
DSCI560: Data Science Professional Practicum

University Of Utah

2016-2021 Guest Lecturer, SPATIAL Short Course

Lecture on Data Management in the geosciences.

FORCE11 Summer Course

2019 Lecturer

The scientific paper of the future

University Of California, Santa Barbara

Fall 2015 Lecturer, Earth Sciences

EARTH130 – Global Warming: Science and Society.
Introduction to the scientific and societal issues surrounding global climate change.

ADVISING

Graduate Students

Dhiren Oswal (2024 - present) - Master in Computer Science, advised on a project creating a toolbox using table understanding to help paleoclimatologists access unstructured tabular data.

Zeru Zhou (2023) - Master in Computer Science, advised on a project about global temperature reconstruction using Bayesian inference.

Jordan Landers (2022-present) - PhD Earth Sciences, committee member.

Alexander James (2020-present) - PhD Earth Sciences, committee member.

Feibei Pan (2022) - Master in Applied Data Science, advised on a project about sentiment analysis.

Shravya Manety (2021) - Master in Computer Science, advised on a project on recommender systems. Now at Amazon

Myron Kwan (2020) - Master in Computer Science, advised on a project about time series analysis. Now at Amazon.

Pratheek Athreya (2020) - Master in Applied Data Science, advised on a project about time series analysis. Now at Walmart Global Tech

PUBLICATION RECORD

Journal Articles

James, A., J. Emile-Geay, N. Malik, **D. Khider**. (2024). Detecting paleoclimate transitions with Laplacian Eigenmaps of Recurrence Matrices (LERM). *Paleoclimatology and Paleoceanography*, 39, e2023PA004700. doi: 10.1029/2023PA004700

Zhu, F., J. Emile-Geay, G. J. Hakim, D. Guillot, **D. Khider**, R. Tardif, W.A. Perkins (2024). cfr (v2024.1.26): a Python package for climate field reconstruction. *Geoscientific Model Development*, 17, 8, doi: 10.5194/gmd-17-3409-2024

Khider, D., J. Emile-Geay, F. Zhu, A. James, J. Landers, V. Ratnakar, Y. Gil. (2022). Pyleoclim: Paleoclimate timeseries analysis and visualization with Python. *Paleoclimatology and Paleoceanography*, 37, 10, e2022PA004509. doi:10.1029/2022PA004509.

Manety, S., **D. Khider**, Heiser, C., McKay, N., Emile-Geay, J., Rouston, C. (2022). PaleoRec: A sequential recommender system for the annotation of paleoclimate datasets. *Environmental Data Science*, 1, e4, doi: 10.1017/eds.2022.3.

Gil, Y., D. Garijo, **D. Khider**, C. Knoblock, V. Ratnakar, M. Osorio, H. Vargas, M. Pham, J. Pujara, B. Shbita, B. Vu, Y.-Y. Chiang, D. Feldman, Y. Lin, H. Song, V. Kumar, A. Khandelwal, M. Steinbach, K. Tayal, S. Xu, S.A. Pierce, L. Pearson, D. Hardesty-Lewis, E. Deelman, R. Ferreira da Silva, R. Mayani, A. R. Kemanian, Y. Shi, L. Leonard, S. Peckham, M. Stoica, K. Cobourn, Z. Zhang, C. Duffy, L. Shu. (2021) Artificial Intelligence for modeling complex systems: taming the complexity of expert models to improve decision making. *The ACM Transactions on Interactive Intelligent Systems*, 11, 2, 1-49, doi: 10.1145/3453172.

McKay, N., J. Emile-Geay, **D. Khider**. (2021) GeoChronR - an R package to model, analyze, and visualize age-uncertain paleoscientific data. *Geochronology*, 3, 149-169, doi: 10.5194/gchron-3-149-2021.

Kaufman, D.; McKay, N.; Routson, C.; Erb, M.; Davis, B.; Heiri, O.; Jaccard, S.; Tierney, J.; Dätwyler, C.; Axford, Y.; Brussel, T.; Cartapanis, O.; Chase, B.; Dawson, A.; de Vernal, A.; Engels, S.; Jonkers, L.; Marsicek, J.; Moffa-Sánchez, P.; Morrill, C.; Orsi, A.; Rehfeld, K.; Saunders, K.; Sommer, P. S.; Thomas, E.; Tonello, M.; Tóth, M.; Vachula, R.; Andreev, A.; Bertrand, S.; Biskaborn, B.; Bringué, M.; Brooks, S.; Caniupán, M.; Chevalier, M.; Cwynar, L.; Emile-Geay, J.; Fegyveresi, J.; Feurdean, A.; Finsinger, W.; Fortin, M.; Foster, L.; Fox, M.; Gajewski, K.; Grosjean, M.; Hausmann, S.; Heinrichs, M.; Holmes, N.; Ilyashuk, B.; Ilyashuk, E.; Juggins, S.; **Khider, D.**; Koinig, K.; Langdon, P.; Larocque-Tobler, I.; Li, J.; Lotter, A.; Luoto, T.; Mackay, A.; Magyari, E.; Malevich, S.; Mark, B.; Massaferro, J.; Montade, V.; Nazarova, L.; Novenko, E.; Pařil, P.; Pearson, E.; Peros, M.; Pienitz, R.; Płóciennik, M.; Porinchu, D.; Potito, A.; Rees, A.; Reinemann, S.; Roberts, S.; Rolland, N.; Salonen, S.; Self, A.; Seppä, H.; Shala, S.; St-Jacques, J.; Stenni, B.; Syrykh, L.; Tarrats, P.; Taylor, K.; van den Bos, V.; Velle, G.; Wahl, E.; Walker, I.; Wilmshurst, J.; Zhang, E.; and Zhilich, S. (2020). A global database of Holocene paleotemperature records. *Scientific Data*, 7(1): 115.

Khider, D., J. Emile-Geay, N.P. McKay, Y. Gil, D. Garijo, V. Ratnakar, M. Alonso-Garcia, S. Bertrand, O. Bothe, P. Brewer, A. Bunn, M. Chevalier, L. Comas-Bru, A. Csank, E. Dassie, K. DeLong, T. Felis, P. Francus, A. Frappier, W. Gray, S. Goring, L. Jonkers, M. Kahle, D. Kaufman, N. M. Kehrwald, B. Martrat, H. McGregor, J. Richey, A. Schmittner, N. Scroxton, E. Sutherland, K. Thirumalai, K. Allen, F. Arnaud, Y. Axford, T. T. Barrows, L. Bazin, S.E. Pilaar Birch, E. Bradley, J. Bregy, E. Capron, O. Cartapanis, H.-W. Chiang, K. M. Cobb, M. Debret, R. Dommain, J. Du, K. Dyez, S. Emerick, M. P. Erb, G. Falster, W. Finsinger, D. Fortier, Nicolas Gauthier, S. George, E. Grimm, J. Hertzberg, F. Hibbert, A. Hillman, W. Hobbs, M. Huber, A.L.C. Hughes, S. Jaccard, J. Ruan, M. Kienast, B. Konecky, G. Le Roux, V. Lyubchich, V.F. Novello, L. Olaka, J.W. Partin, C. Pearce, S.J. Phipps, C. Pignol, N. Piotrowska, M.-S. Poli, A. Prokopenko, F. Schwanck, C. Stepanek, G. E. A. Swann, R. Telford, E. Thomas, Z. Thomas, S. Truebe, L. von Gunten, A. Waite, N. Weitzel, B. Wilhelm, J. Williams, J.J. Williams, M. Winstrup, N. Zhao, Y. Zhou (2019). PaCTS 1.0: A Crowdsourced Reporting Standard for Paleoclimate Data. *Paleoceanography and Paleoclimatology*, doi:10.1002/2019PA003632.

Zhu, F., J. Emile-Geay, T.R. Ault, N. McKay, G. Hakim, **D. Khider**, E.J. Steig, S. Dee, J.W. Kirchner. (2019) Climate models can correctly simulate the continuum of temperature variability. *Proceedings of the National Academy of Sciences of the United States of America*. doi:10.1073/pnas.1809959116.

Richey, J., K. Thirumalai, **D.Khider**, C. Reynolds, J. Partin, T. Quinn. (2019) Considerations for *Globigerinoides ruber* (white and pink) paleoceanography in the Atlantic Ocean: comprehensive insights from a long-running sediment trap. *Paleoceanography and Paleoclimatology*. doi:10.1029/2018PA03417.

Khider, D., S. Ahn, L. Lisiecki, C. Lawrence, M . Kienast. (2017) The role of uncertainty in estimating lead/lag relationships in marine sedimentary archives: A case study from the tropical Pacific. *Paleoceanography*. doi:10.1002/2016PA003057.

Ahn, S., **D. Khider**, L. Lisieicki, C. Lawrence. (2017) A probabilistic Pliocene-Pleistocene stack of benthic δ^{18}O using a profile hidden Markov model. *Dynamics and Statistics of the Climate System*. doi:10.1093/climsys/dzx002.

Tems, C., W. Berelson, R. Thunell, E. Tappa, X. Xu, **D. Khider**, S. Lund, O. Gonzalez-Yajimovich. (2016) Sedimentary δ^{15}N reveal decadal fluctuations in the intensity of the eastern tropical north Pacific oxygen minimum zone during the last 1200 years. *Paleoceanography*. doi:10.1002/2015PA002904.

Khider, D., G. Huerta, C. Jackson, L. Stott, J. Emile-Geay. (2015). A Bayesian, multivariate regression for *Globigerinoides ruber* Mg/Ca. *Geochemistry, Geosphysics, Geosystems*. doi:10.1002/2015GC005844

Lin, L., **D. Khider**, L. Lisiecki, C. Lawrence. (2014). Probabilistic sequence alignment of stratigraphic records. *Paleoceanography*. doi:10.1002/2014PA002713

Khider, D., C. Jackson, L. Stott. (2014). Assessing millennial-scale variability during the Holocene: a western tropical Pacific perspective. *Paleoceanography*. doi:10.1002/2013PA002534

Khider, D., L. Stott, J. Emile-Geay, R. Thunell, D. Hammond. (2011). Assessing El Niño Southern Oscillation variability during the past millennium. *Paleoceanography*. doi:10.1029/2011PA002139

Reuter, J., L. Stott, **D. Khider**, A. Sinha, H. Cheng, R. Edwards. (2009). A new perspective on the hydroclimate variability in northern South America during the Little Ice Age. *Geophysical Research Letters*. doi:10.1002/2009GL041051

Peer-Reviewed Conference Papers

Khider, D., J. Emile-Geay, V. Ratnakar, K. Pevey, M. Gorelli, N. McKay, J. Landers. Facilitating scientific investigations from long-tail data with Python (2024). *Scipy*.

Garijo, D., **D.Khider**, V. Ratnakar, Y. Gil, E. Deelman, R.F. da Silva, C. Knoblock, Y. Chiang, M. Pham, J. Pujara, B. Vu, D. Feldman, R. Mayani, K. Cobourn, C. Duffy, A. Kemanian, L. Shu, V. Kumar, A. Khandelwal, A., K. Tayal, S. Peckham, M. Stoica, A. Dabrowski, D. Hardesty-Lewis, S. Pierce. An intelligent interface for Integrating Climate, Hydrology, Agriculture, and Socioeconomic mocels. *Proceedings of the 24th International Conference on Intelligent User Interfaces: Companion, of IUI '19*.

Gil, Y., K. Cobourn, E. Deelman, C. Duffy, R. Ferreira da Silva, A. Kemanian, C. Knoblock, V. Kumar, S. Peckham, L. Carvalho, Y.-Y. Chiang, D. Garijo, **D. Khider**, A. Khandelwal, M. Pahm, J. Pujara, V. Ratnakar, M. Stoica, B. Vu. (2018) MINT: Model Integration Through Knowledge-Powered Data and Process Composition. *Proceedings of Modelling for Sustainable Food-Energy-Water Systems: 9th International Congress on Environmental Modelling and Software*.

D. Garijo, **D. Khider**, Y. Gil, L. Carvalho, B. Essawy, S. Pierce, D. H. Lewis, V. Ratnakar, S. Peckham, C. Duffy, J. Goodall. (2018) A semantic model catalog to support composition and reuse. *Proceedings of Modelling for Sustainable Food-Energy-Water Systems: 9th International Congress on Environmental Modelling and Software*.

Gil, Y., D. Garijo, V. Ratnakar, **D. Khider**, J. Emile-Geay, N. McKay. (2017). A controlled crowdsourcing approach for practical ontology extensions and metadata annotations. In d'Amato C. et al. (eds) The Semantic Web - ISWC2017. ISWC2017. Lecture Notes in Computer Science, vol 10588. Springer, Cham.

Articles in Refereed Workshops

Berhanu, B., E. Bisrat, E., Y. Gil, **D. Khider**, M. Osorio, V. Ratnakar, V., H. Vargas. (2022). An AI Approach to Integrating Climate, Hydrology, and Agriculture Models. In Proceedings of the *First International Workshop on Social Impact of AI for Africa (SIAIA)*, held at the 36th Annual Conference of the Association for the Advancement of Artificial Intelligence (AAAI-22).

Gil, Y., **D. Khider**, M. Osorio, V. Ratnakar, H. Vargas, D. Garijo, D., S. Pierce. (2022). Towards Capturing Scientific Reasoning to Automate Data Analysis. In Proceedings of the *44th Annual Conference of the Cognitive Science Society (CogSci)*.

Khider, D., J. Emile-Geay, A. James, F. Zhu. (2022). PaleoHack: Putting EarthCube tools in the hands of paleogeoscientists (ec2022v2). Zenodo. https://doi.org/10.5281/zenodo.6780990

McKay N., J. Emile-Geay, **D. Khider**. (2022). Database interoperability, uncertainty quantification and reproducible workflows in the paleogeosciences (Version ec2022). Zenodo. https://doi.org/10.5281/zenodo.6780665

Gil, Y., **D. Khider**, M. Osorio, V. Ratnakar, H. Vargas, D. Garijo, S. Pierce.(2022). Towards capturing scientific reasoning to automate data analysis. *Proceedings of the 44th Annual Conference of the Cognitive Science Society (CogSci)*

Berhanu, B.; E. Bisrat, Y. Gil, **D. Khider**, M. Osorio, V. Ratnakar, H. Vargas. (2022). An AI Approach to Integrating Climate, Hydrology, and Agriculture Models. *Proceedings of the First International Workshop on Social Impact of AI for Africa (SIAIA), held at the 36th Annual Conference of the Association for the Advancement of Artificial Intelligence (AAAI-22)*

Khider, D. P. Athreya, V. Ratnakar, Y. Gil, F. Zhu, M. Kwan, and J. Emile-Geay. 2020. Towards Automating Time SeriesAnalysis for Paleogeosciences. *InMileTS '20: 6th KDD Workshop on Mining and Learning from Time Series*, August 24th, 2020, San Diego, California, USA.ACM, New York, NY, USA, 6 pages

Khider, D., L. Stott, R. Saikku, J. Partin, C. Jackson, D. Hammond, A. Newton, R. Thunell. (2013). How unusual is the 20th century within the Indo-Pacific Warm Pool? *The Third International Workshop on Climate Informatics*, Boulder, CO.

Conference Abstracts

Camron, M.D.A, S. Bailey, E.A. Belkin, J. Bravo, J. Clyne, D. Das, O. Eroglu, K. FitzGerald, R. Ford, M.A. Grover, J. Gum, J. Jones, J. Kent, **D. Khider**, R. M. May, J. Munroe, B.E.J. Rose, N. Sobhani, J.T. Thielen, C.L. Walker. (2025). The Project Pythia Hackathon: Developing Scientists' Skills and Community in Open Source Development and Education. *105th Annual Meeting of the American Meteorological Society*

Khider, D. (2023). PaleoCube: Enabling cloud-based Paleoclimatology. *AGU Fall Meeting*

Khider, D. (2020). AI in the paleogeosciences: progress, challenges, and opportunities. *AGU Fall Meeting* (Invited)

Khider, D., F. Zhu, Y. Gil (2019). autoTS: Automated Machine Learning for Time Series Analysis. *AGU Fall Meeting*, San Francisco, CA.

Khider, D. et al. (2019) MINT: An intelligent interface for understanding the impacts of climate change on hydrological, agricultural and economic systems. *AGU Fall Meeting*, San Francisco, CA.

Khider, D., Y. Gil. (2018). AI in geosciences: progress, challenges, and opportunities. *AGU Fall Meeting*, Washington, D.C. (Invited)

Khider, D., N. McKay, J. Emile-Geay, D. Garijo, Y. Gil, V. Ratnakar. (2018). Supporting paleoclimate research with the FAIR principle: lessons from LinkedEarth. *AGU Fall Meeting*, Washington, D.C.

Zhu, F., J. Emile-Geay, T. Ault, N. McKay, G.J. Hakim, **D. Khider**, E.J. Steig, S. Dee, J.W. Kirchner. (2018) Climate models can correctly simulate the continuum of temperature variability. *AGU Fall Meeting*, Washington, D.C.

Garijo, D., Y. Gil, K.M. Cobourn, E. Deelman, C. Duffy, R. Ferreira de Silve, A. Kermanian, C. Knolblock, V. Kumar, S. Peckham, Y.-Y. Chiang, **D. Khider**, A. Khandelwal, J. Pujara, V. Ratnakar, M. Stoica, M. Pham, B. Vu. (2018) Integrating models through knowledge-powered data and process composition. *AGU Fall Meeting*, Washington, D.C.

McKay, N, J. Emile-Geay, **D. Khider**. (2018) Scientific workflows, reproducibility and uncertainty quantification in the paleogeosciences. *AGU Fall Meeting*, Washington, D.C.

Khider, D., J. Emile-Geay, N. McKay, D. Garijo, Y. Gil, V. Ratnakar (2018). LinkedEarth: Supporting paleoclimate research with crowdsourced ontologies, software, and data standards. *EarthCube All Hands Meeting, Washington, D.C.*

Khider, D., J. Emile-Geay, N. McKay, D. Garijo, V. Ratnakar, Y. Gil, F. Zhu (2017). LinkedEarth and 21st century paleoclimatology: reducing data friction through standard development. *AGU Fall Meeting*, New Orleans, LA. Abstract IN32A-03 (Invited)

Khider, D., J. Emile-Geay, N. McKay, C.S. Jackson, C. Rouston (2016). Testing the Millennial-Scale Holocene Solar-Climate Connection in the Indo-Pacific Warm Pool. *AGU Fall Meeting*, San Francisco, CA. Abstract PP43A-2309.

L.E. Lisiecki, S. Ahn, G. Gebbie, A.M. Jones, **D. Khider**, C. Lawrence. (2016). Incorporating the effects of age uncertainty derived from benthic δ^{18}O alignment into paleoceanographic data compilations. *AGU Fall Meeting*, San Francisco, CA. Abstract PP33D-04.

Khider, D., D. Garijo, J. Emile-Geay, Y. Gil, N. McKay, V. Ratnakar. (2016). The future of past climates: LinkedEarth and 21st century paleoclimatology. *SciDataCon*.

Khider, D., J. Emile-Geay, N. McKay, L. von Gunten, D. Kauffman. (2016). PAGES2k: data crowd-curation for collaborative paleoscience. *SciDataCon*.

Tems, C., W. Berelson, R. Thunell, E. Tappa, X. Xu, **D. Khider**, S. Lund, O. Gonzalez-Yajimovich. (2016). High-frequency fluctuations in the eastern tropical North Pacific oxygen minimum zone during the last 1200 years. *AGU Ocean Sciences meetint*, Abstract PC51A-03.

Khider, D., S. Ahn, L. Lisiecki, C. Lawrence, M . Kienast. (2015). On the timing of glacial terminations in the equatorial Pacific. *AGU Fall Meeting*, San Francisco, CA. Abstract PP53C-2365.

Lisiecki, L., S. Ahn, **D. Khider**, C. Lawrence. (2015). Probabilistic Stack of Plio-Pleistocene benthic δ^{18}O records constructed using profile hidden Markov models. *AGU Fall Meeting*, San Francisco, CA. Abstract PP13D-07.

Khider, D., L. Lisiecki. (2014). Statistical constraints on the relative link between eccentricity forcing and the 100,000-year glacial cycle. *AGU Fall Meeting*, San Francisco, CA. Abstract PP41D-1436.

Stott, L., **D. Khider**, C. Jackson, G. Huerta. (2014). What forced Holocene millennial-scale variability? A tale from the Western Tropical Pacific. *AGU Fall Meeting*, San Francisco, CA. Abstract PP41C-1379 (Presenting Author).

Khider, D., L. Stott, R. Saikku, J. Partin, C. Jackson, D. Hammond, A. Newton, R. Thunell. (2013). How unusual is the 20th century within the Indo-Pacific Warm Pool? *AGU Fall Meeting*, San Francisco, CA. Abstract PP42A-03.

Khider, D., T. Quinn, C. Reynolds. (2012). Assessing the temperature variability from Mg/Ca and δ^{18}O in *Globigerinoides ruber* from the Northern Gulf of Mexico. *AGU Fall Meeting*, San Francisco, CA. Abstract PP43A-2008.

Reuter, J,. L. Stott, **D. Khider**. (2012). Middle East Rainfall Variability during the Common Era. *AGU Fall Meeting*, San Francisco, CA. Abstract PP21B-1992.

Khider, D., L. Stott, R. Saikku, D. Hammond. (2011). Evidence for a Bipolar Seesaw during the Late Holocene. *AGU Fall Meeting*, San Francisco, CA. Abstract PP34A-02.

Khider D, L. Stott, J. Emile-Geay, R. Thunell (2010). Assessing ENSO over the past millennium: a western tropical Pacific perspective. *AGU Fall Meeting*, San Francisco, CA. Abstract PP51B-05.

Khider, D., L. Stott, J. Emile-Geay, R. Thunell (2010). Has El Niño changed over the past millennium? *Graduate Climate Conference*, Seattle, WA.

Khider, D., L. Stott, J. Emile-Geay, R. Thunell (2010). A history of ENSO variability over the past millennium as told by a marine sediment core from the western tropical Pacific. *10th International Conference on Paleoceanography*, La Jolla, CA.

Khider, D., L. Stott, J. Emile-Geay, R. Thunell (2009). Inter- and intrannual variability in the production of planktonic foraminifera: implications for ENSO reconstruction based on the oxygen isotope distribution of individuals. *AGU Fall Meeting*, San Francisco, CA. Abstract PP13D-1434.

INVITED TALKS

2024

Towards AI Scientists - a use case for paleoclimatology
University of Southern California

LinkedEarth and 21st century paleoclimatology.
University of California Riverside.

2023

AI in the (paleo)geosciences: progress and new opportunities.
TransAI.

AI, Violet Teaming, and Environmental Justice
5th NOAA Workshop on Leveraging AI in Environmental Sciences

Will AIs ever be one of us?
Department of Earth Sciences, University of California, Santa Barbara

2022

LinkedEarth: building a community for the paleogeosciences revolving around data, software, and FAIR principles
Information Sciences Institute, University of Southern California

2022

AI in the paleogeosciences: Progress, Challenges, and Opportunities
Information Sciences Institute, University of Southern California

2021

AI in the paleogeosciences: Progress, Challenges, and Opportunities
PaleoPercs

AI in the paleogeosciences: Progress, Challenges, and Opportunities
Department of Earth Sciences, University of Southern California.

2020

AI in the paleogeosciences: Progress, Challenges, and Opportunities
IS-GEO

AI in the paleogeosciences: Progress, Challenges, and Opportunities
Artificial Intelligence Division, Information Sciences Institute, University of Southern California.

2017

Testing the Millennial-Scale Holocene Solar-Climate Connection in the Indo-Pacific Warm Pool.
Department of Earth Sciences, University of Southern California.

The future of past climates: LinkedEarth and 21st century paleoclimatology.
Department of Earth Science Speaker's Club, University of California, Santa Barbara. EarthCube Lecture

The future of past climates: LinkedEarth and 21st century paleoclimatology.
Department of Earth Science, California State University, Bakersfield. EarthCube Lecture

The future of past climates: EarthCube and 21st century paleoclimatology.
Department of Earth, Environmental, and Planetary Sciences, Brown University. EarthCube Lecture

2016

The future of past climates: LinkedEarth and 21st century paleoclimatology.
College of Earth, Ocean, and Atmospheric Sciences, Oregon State University. EarthCube Lecture

The future of past climates: LinkedEarth and 21st century paleoclimatology.
Institute for Geophysics Seminar, The University of Texas at Austin. EarthCube Lecture

The future of past climates: LinkedEarth and 21st century paleoclimatology.
Department of Earth Sciences Paleoenvironmental Seminar, University of Southern California.

2015

Probabilistic timing of glacial terminations in the Tropical Pacific.
Department of Earth Sciences Paleoenvironmental Seminar, University of Southern California

2014

How unusual is the 20th century within the Indo-Pacific Warm Pool?
Department of Earth Science Speaker's Club, University of California, Santa Barbara

Assessing millennial-scale variability during the Holocene: a western tropical Pacific perspective.
Department of Geography Climate Research seminar, University of California, Santa Barbara

Assessing millennial-scale variability during the Holocene: a western tropical Pacific perspective.
Interdepartmental graduate program in Marine Science seminar, University of California, Santa Barbara

2011

Evidence for a Bipolar Seesaw over the Holocene.
Institute for Geophysics Seminar, The University of Texas at Austin

2010

Effect of salinity on foraminiferal Mg/Ca: Paleoceanographic implications.
Department of Earth Sciences Paleoenvironmental Seminar, University of Southern California

Is El Niño changing? A perspective from the Indonesian Seas.
Department of Earth Sciences Paleoenvironmental Seminar, University of Southern California

2008

How unusual is the 20th century?
Department of Earth Sciences Paleoenvironmental Seminar, University of Southern California

SYNERGISTIC ACTIVITIES

Workshops

2025 · FAIRLeap: FAIR publishing in the geosciences. Organizer and lecturer

2024 · PyRATES: Python and R Analysis of TimeSerieS. Organizer and lecturer

2023 · Building Upon the EarthCube Community: A Geoscience and Cyberinfrastructure workshop - Organizer and Chair.

2021-2023 · PaleoHack - Organizer. The goal of these workshops is to build data science capacity within the geoscience community.

2021 · LinkedEarth Town Hall at the 2021 American Geophysical Union Meeting, New Orleans - Organizer

2021 · National Academies Workshop: Identifying New Community-Driven Science Themes for NSF's Support for Paleoclimate Research.

2017 · PAGES OC3.
Oregon State University, Corvallis, OR.

2016-2017 · GeoChronR - Organizer.
Northern Arizona University, Flagstaff, AZ.

2016 · Workshop on Paleoclimate Data Standards.
NOAA, Boulder, CO.

2015 · Expert Witness Training Academy: Effectively Communicating Science.
William Mitchell College of Law, St Paul, MN.

2013 · PMIP Ocean Workshop 2013: Understanding changes since the Last Glacial Maximum.
Corvallis, OR.

2013 · PAGES COMPARE Workshop: LGM sea surface temperatures.
Corvallis, OR.

2010 · ENSO variability workshop.
Scripps Institution of Oceanography, University of California San Diego, San Diego, CA.

Reviewer

Science, Nature, Nature Communications, Nature Geoscience, Geology, Geophysical Research Letters, Paleoceanography and Paleoclimatology, Marine Micropaleontology, Palaeogeography Palaeoclimatology Palaeoecology, Journal of Geophysical Research-Oceans, Geochemistry Geophysics Geosystems, Climate of the Past, Quaternary Science Reviews, Journal of Climate.

Community Service

2023-present · Advisory board, *DesignSafe*

2022-2024 · Science advisory board, *Earth System Grid Federation 2 - Department of Energy*

2022 · Co-chair Council of Funded Projects, *EarthCube*

2019-2020 · Organizing Committee, *EarthCube Annual Meeting*

2019-2020 · Organizing Committee, Datafest Events, *USC Center for Knowledge-Powered Interdisciplinary Data Science*

2014 · Session convener and chair, *AGU Fall Meeting*

2012–2013 · Judge, Outstanding Student Paper Awards, *AGU Fall Meeting*

2011 · Organizer, USC Paleoenvironmental Seminar Series

2010 · Wrigley Institute Summer Outreach Program

FUNDING

2024

Collaborative Research: P4Climate–A Paleo Perspective on the Links between Climate and Food Security - National Science Foundation, Paleo Perspectives on Present and Projected Climate

Collaborative Research: Elements: TUPS: Table Understanding for Paleoclimate Studies - National Science Foundation - Cyberinfrastructure for Sustained Scientific Innovation

CAIG: PaleoPAL: An AI Research Assistant for Paleoclimatology - National Science Foundation - Collaborations in Artificial Intelligence and Geosciences

2023

Collaborative Research: GEO OSE Track 1: Facilitating Reproducible Open GeoScience - National Science Foundation, Geoscience Open Science Ecosystem

Building Upon the EarthCube Community: A Geoscience and Cyberinfrastructure Workshop - National Science Foundation - RISE

2021

EarthCube Capabilities: PaleoCube: Enabling Cloud-Based Paleoclimatology- National Science Foundation, EarthCube

2020 Collaborative Research: A Big Data Approach to Fundamental Paleoclimate Questions - National Science Foundation, Paleo Perspective on Climate Change

Collaborative Research: PReSto: A Paleoclimate Reconstruction Storehouse to Broaden Access and Accelerate Scientific Inference - National Science Foundation, Geoinformatics

AWARDS

2022 EarthCube Leadership Award

2014-2015 Editor's citation for contribution in refereeing for *Nature*

2011-2013 UTIG Postdoctoral Fellowship

2011 USC Final Summer Dissertation Fellowship

2010 USC Earth Science Departmental Teaching Assistant Award (Geochemistry)

USC Wrigley-Sonosky Fellowship

1st Place USC GPSS Poster Symposium

WISE Award for nomination as Merit PhD candidate

USC Department of Earth Science Graduate Research Grant

PROFESSIONAL AFFILIATIONS

2007-present Member of the American Geophysical Union

2018-2020 Member of the International Environmental Modelling and Software Society