

ANSON H. CHEUNG

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Lamont-Doherty Earth Observatory,

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PROFESSIONAL APPOINTMENTS

Lamont-Doherty Postdoctoral Fellow

August 2023 -

Lamont-Doherty Earth Observatory, Columbia University

EDUCATION

Brown University

2017 - 2023

Ph.D. Earth, Environmental, and Planetary Sciences

Advisors: Dr. Timothy Herbert and Dr. Baylor Fox-Kemper

Sc.M. Earth, Environmental, and Planetary Sciences

2017 - 2019

Advisors: Dr. Timothy Herbert and Dr. Baylor Fox-Kemper

University of Arizona

2013 - 2017

B.S. Geosciences – Earth System Science

FELLOWSHIPS/SCHOLARSHIPS

Lamont-Doherty Postdoctoral Fellowship

2023 - 2025

Brown University Presidential Fellowship

2017 - 2020

Galileo Circle Scholarship

2017

Astronaut Scholarship Foundation Scholarship

2016 - 2017

Arizona Excellence Tuition Award Scholarship

2013 - 2017

Benjamin A Gilman International Scholarship

Spring 2016

Kissling Spirit of Inquiry Scholarship

2015 - 2016

Van de Verde Undergraduate Research Scholarship

2015 - 2016

UA/NASA Space Grant Internship

2014 - 2015

ACADEMIC HONORS

Outstanding Senior in the Department of Geosciences

2017

First Level Honors

2015

Academic Year Academic Distinction

2015

Academic Year Highest Academic Distinction

2014

Deans List with Distinction

Fall 2013, Spring 2014, Spring 2015

Deans List

Fall 2014, Fall 2015

PUBLICATIONS

†: Undergraduate Student *: Equal Contribution

PEER REVIEWED:

- [1] R. S. Vachula and **A. H. Cheung**. A meta-analysis of studies attributing significance to solar irradiance. *Earth and Space Science*, 10(1):e2022EA002466, 2023. doi: <https://doi.org/10.1029/2022EA002466>.
- [2] **A. H. Cheung**, S. Sandwick[†], X. Du, J. Abella-Gutiérrez, R. S. Vachula, T. D. Herbert, B. Fox-Kemper, and J. C. Herguera. Middle to Late Holocene sea surface temperature and productivity changes in the northeast Pacific. *Paleoceanography and Paleoclimatology*, 37(11): e2021PA004399, 2022. doi: <https://doi.org/10.1029/2021PA004399>.
- [3] V. J. Clementi, Y. Rosenthal, S. C. Bova, E. K. Thomas, J. D. Wright, R. A. Mortlock, O. C. Cowling, L. V. Godfrey, L. B. Childress, and **Expedition 379T Scientists**. Deep submarine infiltration of altered geothermal groundwater on the south Chilean Margin. *Communications Earth & Environment*, 3(218), 2022. doi: <https://doi.org/10.1038/s43247-022-00541-3>.
- [4] R. S. Vachula, R. Y. Sheppard, and **A. H. Cheung**. Preservation biases are pervasive in Holocene paleofire records. *Palaeogeography, Palaeoclimatology, Palaeoecology*, page 111165, 2022. doi: <https://doi.org/10.1016/j.palaeo.2022.111165>.
- [5] C. Li, V. J. Clementi, S. C. Bova, Y. Rosenthal, L. B. Childress, J. D. Wright, Z. Jian, and **Expedition 379T Scientists**. The sediment green-blue color ratio as a proxy for biogenic silica productivity along the Chilean Margin. *Geochemistry, Geophysics, Geosystems*, page e2022GC010350, 2022. doi: <https://doi.org/10.1029/2022GC010350>.
- [6] D. Thompson, M. McCulloch, J. E. Cole, E. V. Reed, J. P. D’Olivo, K. Dyez, M. Lofverstrom, J. Lough, N. Cantin, A. W. Tudhope, **A. H. Cheung**, L. Vetter, and R. L. Edwards. Marginal Reefs Under Stress: Physiological Limits Render Galápagos Corals Susceptible to Ocean Acidification and Thermal Stress. *AGU Advances*, 3(1):e2021AV000509, 2022. doi: <https://doi.org/10.1029/2021AV000509>.
- [7] **A. H. Cheung**, J. E. Cole, D. M. Thompson, L. Vetter, G. Jimenez, and A. W. Tudhope. Fidelity of the coral Sr/Ca paleothermometer following heat stress in the northern Galápagos. *Paleoceanography and Paleoclimatology*, 36(12):e2021PA004323, 2021. doi: <https://doi.org/10.1029/2021PA004323>.
- [8] E. V. Reed, D. M. Thompson, J. E. Cole, J. M. Lough, N. E. Cantin, **A. H. Cheung**, A. Tudhope, L. Vetter, G. Jimenez, and R. L. Edwards. Impacts of Coral Growth on Geochemistry: Lessons From the Galápagos Islands. *Paleoceanography and Paleoclimatology*, 36(4):e2020PA004051, 2021. doi: <https://doi.org/10.1029/2020PA004051>.
- [9] R. S. Vachula and **A. H. Cheung**. Late Neogene surge in sedimentary charcoal fluxes partly due to preservation biases, not fire activity. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 567:110273, 2021. doi: <https://doi.org/10.1016/j.palaeo.2021.110273>.
- [10] **A. H. Cheung***, R. S. Vachula*, E. Clifton[†], S. Sandwick[†], and J. M. Russell. Humans dominated biomass burning variations in Equatorial Asia over the past 200 years: Evidence from a lake sediment charcoal record. *Quaternary Science Reviews*, 253:106778, 2021. doi: <https://doi.org/10.1016/j.quascirev.2020.106778>.

- [11] N. A. O'Mara, **A. H. Cheung**, C. S. Kelly, S. Sandwick[†], T. D. Herbert, J. M. Russell, J. Abella-Gutiérrez, S. G. Dee, P. W. Swarzenski, and J. C. Herguera. Subtropical Pacific Ocean Temperature Fluctuations in the Common Era: Multidecadal Variability and Its Relationship With Southwestern North American Megadroughts. *Geophysical Research Letters*, 46(24):14662–14673, 2019. doi: <https://doi.org/10.1029/2019GL084828>.
- [12] **A. Cheung**, B. Fox-Kemper, and T. Herbert. Can we use sea surface temperature and productivity proxy records to reconstruct Ekman upwelling? *Climate of the Past*, 15(6):1985–1998, 2019. doi: <https://doi.org/10.5194/cp-15-1985-2019>.
- [13] **A. H. Cheung**, M. E. Mann, B. A. Steinman, L. M. Frankcombe, M. H. England, and S. K. Miller. Reply to “Comment on ‘Comparison of Low-Frequency Internal Climate Variability in CMIP5 Models and Observations’”. *Journal of Climate*, 30(23):9773–9782, 2017a. doi: <https://doi.org/10.1175/JCLI-D-17-0531.1>.
- [14] **A. H. Cheung**, M. E. Mann, B. A. Steinman, L. M. Frankcombe, M. H. England, and S. K. Miller. Comparison of Low-Frequency Internal Climate Variability in CMIP5 Models and Observations. *Journal of Climate*, 30(12):4763–4776, 2017b. doi: <https://doi.org/10.1175/JCLI-D-16-0712.1>.
- [15] M. E. Mann, B. A. Steinman, S. K. Miller, L. M. Frankcombe, M. H. England, and **A. H. Cheung**. Predictability of the recent slowdown and subsequent recovery of large-scale surface warming using statistical methods. *Geophysical Research Letters*, 43(7):3459–3467, 2016. doi: <https://doi.org/10.1002/2016GL068159>.

IN PROGRESS:

- [1] **A. H. Cheung**, X. Du, M. C. Parish, R. S. Vachula, B. Fox-Kemper, and T. D. Herbert. Spatiotemporal evolution and drivers of western North America hydroclimate and Pacific sea surface temperature during the Holocene. in revision.

CONFERENCE/WORKSHOP PRESENTATIONS

*: Equal Contribution

ORAL:

- [1] **Cheung***, **A. H.**, R. Cleveland-Stout*, R. Hébert*, and X. Zhang*. From simple models and physics. In *PAGES 2k-CVAS Topical Science Meeting: Centennial climate variability at regional scale in models and reconstructions*, Potsdam, Germany, March 2023. PAGES CVAS–PAGES2k.
- [2] **Cheung, A. H.**, L. A. Parsons, and B. Fox-Kemper. Time of emergence in the Last Millennium Reanalysis and CCSM4. In *AGU Fall Meeting 2022*, Chicago, IL, USA, December 2022. American Geophysical Union.
- [3] **Cheung, A. H.**, B. Fox-Kemper, and T. D. Herbert. Can we use sst and productivity records from eastern boundary current systems to reconstruct upwelling? In *Climate Variability Across Scales (CVAS) Workshop*, Seattle, WA, USA, January 2019. PAGES CVAS.
- [4] **Cheung, A.H.**, J. E. Cole, L. Vetter, G. Jimenez, D. M. Thompson, and A. W. Tudhope. Multiproxy Reconstructions of the Eastern Equatorial Pacific: Measuring Sr/Ca, Ba/Ca, and Li/Mg in Modern Corals using ICP-OES. In *Goldschmidt Conference 2018*, Boston, MA, USA, August 2018. European Association of Geochemistry and the Geochemical Society.

- [5] **Cheung, A.H.**, J. E. Cole, L. Vetter, C. Shaver, and G. Jimenez. New approaches to reconstruct oceanic conditions in the Eastern Equatorial Pacific. In *GeoDaze 2017*, Tucson, AZ, USA, March 2017. University of Arizona Geosciences.
- [6] **Cheung, A.H.**, L. A. Parsons, J. E. Cole, and J. T. Overpeck. Analysis of Amazon rainfall datasets and the importance of paleoclimate records. In *Arizona Space Grant Consortium Statewide Symposium*, Phoenix, AZ, USA, March 2015. Arizona Space Grant Consortium.

POSTER:

- [1] **Cheung, A. H.**, B. Fox-Kemper, and T. D. Herbert. Changes in Pacific sea surface temperature and western North America hydroclimate during the Holocene. In *American Quaternary Association Biennial Meeting*, Madison, WI, USA, June 2022. American Quaternary Association.
- [2] **Cheung, A. H.**, T. D. Herbert, and B. Fox-Kemper. Middle to Late Holocene sea surface temperature and productivity changes in the Northeast Pacific. In *AGU Fall Meeting 2020*, Virtual, December 2020. American Geophysical Union.
- [3] **Cheung, A. H.**, T. D. Herbert, and S. Sandwick. North Pacific sea surface temperature changes from Mid to Late Holocene. In *AGU Fall Meeting 2019*, San Francisco, CA, USA, December 2019a. American Geophysical Union.
- [4] **Cheung, A. H.**, T. D. Herbert, and S. Sandwick. North Pacific sea surface temperature changes from Mid to Late Holocene. In *Graduate Climate Conference 2019*, Woods Hole, MA, USA, November 2019b.
- [5] **Cheung, A.H.**, J. E. Cole, L. Vetter, G. Jimenez, D. M. Thompson, and A. W. Tudhope. Multiproxy Reconstructions of the Eastern Equatorial Pacific: Measuring Sr/Ca, Ba/Ca, and Li/Mg in modern Corals using ICP-OES. In *AGU Fall Meeting 2017*, New Orleans, LA, USA, December 2017. American Geophysical Union.
- [6] **Cheung, A. H.**, M. E. Mann, L. M. Frankcombe, M. H. England, B. A. Steinman, and S. K. Miller. Internal interdecadal variability in CMIP5 control simulations. In *AGU Fall Meeting 2015*, San Francisco, CA, USA, December 2015. American Geophysical Union.
- [7] **Cheung, A.H.**, L. A. Parsons, J. E. Cole, and J. T. Overpeck. Analysis of Amazon rainfall datasets and the importance of paleoclimate records. In *GeoDaze 2015*, Tucson, AZ, USA, March 2015. University of Arizona Geosciences.
- [8] **Cheung, A.H.** and J. E. Cole. Defining El Nino variability using coral isotopes and elemental records from Central Line Islands (Jarvis Island). In *UA Honors College First Years Honors Showcase*, Tucson, AZ, USA, May 2014. University of Arizona Honors College.

GRANTS (TOTAL = \$16,600)

AMQUA Student Travel Grant (\$300)	2022
Institute at Brown for Environment and Society Research Grant (total = \$9550)	2020,2022
Brown University Graduate School Doctoral Research Travel Grant (\$700)	2019
Brown University Graduate School International Travel Grant (total = \$1400)	2018,2019
Brown University Graduate School Conference Travel Grant (total = \$2600)	2017,2019, 2021,2022
Brown University Graduate Student Council Travel Grant (total = \$1050)	2017,2019,

Honors College Alumni Legacy Grant (Honors Thesis) (\$1000) 2020,2022
2016-2017

FIELD EXPERIENCE

JOIDES Resolution July 20, 2019 - August 18, 2019
JR100: Chilean Margin Paleoclimate
Inorganic Geochemist

CCGS Vector November 8, 2018
Saanich Inlet High Resolution Paleoclimate Piston and Gravity Coring
Scientist

TEACHING

Guest Lectures

Brown University – Principles of Planetary Climate Fall 2022
Instructor: Dr. Jung-Eun Lee
Lectures: Carbon Dioxide and Climate; Climate Variability

Brown University – Environmental Science in a Changing World Fall 2018
Instructor: Dr. Allison Jacobel
Lecture: Energy, Natural Gas, Fracking

Teaching Assistant

Brown University – Principles of Planetary Climate Fall 2022
Instructor: Dr. Jung-Eun Lee

Brown University – Face of the Earth Spring 2023
Instructor: Drs. Steve Parman and Yan Liang

MENTORING

Undergraduate Students:

Cameron Tripp (Brown '21) – Honors Thesis Spring 2020 - Spring 2021
Elizabeth Clifton (Brown '21) Fall 2018 - Spring 2019
Samantha Sandwick (Brown '20) – Senior Thesis Fall 2017 - Spring 2020

High School Students:

Omeed Siadati (Carroll Senior High School '23) Summer 2022
Ellie Hamilton (Wheeler School '19) Summer 2018

SERVICE

Service to the Department

Coordinator First Years Mentoring Program Spring 2020 - Spring 2021
Mentor First Years Mentoring Program Fall 2020 - Spring 2021, Fall 2022 - Spring 2023
Co-organizer Department Graduate Student Conference Spring 2020
Coordinator Department Elementary School Outreach Program Fall 2019 - Spring 2020
Coordinator Climate and Environment Group Lunch Bunch 2018
Treasurer Department Graduate Student Geology Club Fall 2018 - Spring 2019

Service to the Profession and Community

Peer Reviewer <i>International Journal of Climatology, Ocean Science, Geophysical Research Letters, Journal of Geophysical Research–Oceans, Paleoceanography & Paleoclimatology, Mathematical Geosciences</i>	2018 - Present
Expert Reviewer <i>IPCC SROCC, IPCC AR6</i>	2018, 2019
Session Convener <i>AGU Fall Meeting</i>	
Understanding Climate Change From the Last Glacial Maximum to Present	2021
Understanding Climate Change from the Late Pleistocene to Present	2022
Volunteer Teacher <i>Department Elementary School Outreach Program</i>	2017 - 2020

ADDITIONAL TRAINING

Brown University Sheridan Center Course Design Seminar	Spring 2023
Community Earth System Model Tutorial	Summer 2020
Brown University Sheridan Center Teaching Certificate I (Reflective Teaching)	Spring 2018

SKILLS

Languages	Cantonese, English, Mandarin
Computer	MATLAB, Python
Certificate	PADI Open Water Diving

PROFESSIONAL MEMBERSHIPS

American Geophysical Union	2015 - Present
American Quaternary Association	2022 - Present

Last Updated : September 25, 2023