

**RAN FENG, PhD (RAN.FENG@UCONN.EDU)**

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**EDUCATION**

University of Michigan, Ann Arbor, MI  
PhD in Earth and Environmental Sciences, 2015

Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China  
MS in Meteorology, 2010

Nanjing University, Nanjing, China  
BS in Atmospheric Sciences, 2007

**PEER-REVIEWED PUBLICATIONS**

**In review:**

- **Feng, R.**, Bette L, O.-B., Brady, E. C., & Rosenbloom, N. A. (2020), Increasing Earth System Sensitivity in mid-Pliocene simulations from CCSM4 to CESM2. *Journal of Advances in Modeling Earth Systems*, in revision.
- de Nooijer, W., Zhang, Q., Li, Q., Zhang, Q., Li, X., Zhang, Z., Guo, C., Nisancioglu, K. H., Haywood, A. M., Tindall, J. C., Hunter, S. J., Dowsett, H. J., Stepanek, C., Lohmann, G., Otto-Bliesner, B. L., **Feng, R.**, Sohl, L. E., Tan, N., Contoux, C., Ramstein, G., Baatsen, M. L. J., von der Heydt, A. S., Chandan, D., Peltier, W. R., Abe-Ouchi, A., Chan, W.-L., Kamae, Y., and Brierley, C. M.: Evaluation of Arctic warming in mid-Pliocene climate simulations, *Clim. Past Discuss.*, <https://doi.org/10.5194/cp-2020-64>, in review, 2020.
- McClymont, E. L., Ford, H. L., Ho, S. L., Tindall, J. C., Haywood, A. M., Alonso-Garcia, M., Bailey, I., Berke, M. A., Littler, K., Patterson, M., Petrick, B., Peterse, F., Ravelo, A. C., Risebrobakken, B., De Schepper, S., Swann, G. E. A., Thirumalai, K., Tierney, J. E., van der Weijst, C., White, S. and **the PlioMIP2 group** (including **Feng, R.**): Lessons from a high CO<sub>2</sub> world: an ocean view from ~ 3 million years ago, *Clim. Past Discuss.*, <https://doi.org/10.5194/cp-2019-161>, in review, 2020.
- Haywood, A. M., Tindall, J. C., Dowsett, H. J., Dolan, A. M., Foley, K. M., Hunter, S. J., Hill, D. J., Chan, W.-L., Abe-Ouchi, A., Stepanek, C., Lohmann, G., Chandan, D., Peltier, W. R., Tan, N., Contoux, C., Ramstein, G., Li, X., Zhang, Z., Guo, C., Nisancioglu, K. H., Zhang, Q., Li, Q., Kamae, Y., Chandler, M. A., Sohl, L. E., Otto-Bliesner, B. L., **Feng, R.**, Brady, E. C., von der Heydt, A. S., Baatsen, M. L. J., and Lunt, D. J.: A return to large-scale features of Pliocene climate: the Pliocene Model Intercomparison Project Phase 2, *Clim. Past Discuss.*, <https://doi.org/10.5194/cp-2019-145>, in review, 2020.

## Curriculum Vitae

- Aspen Global Change Institute Paleoclimate Group (including **Feng, R.**) (2020). Past climates inform our future. *Science* (in revision)

### Published (Accepted):

\* Student publication

- Yasuhara, M., Wei, C., Kucera, M., Costello, M., Tittensor, D., Kiessling, W., Bonebrake, T., Tabor, C. R., **Feng, R.**, Baselga, A., Kretschmer, K., Kusumoto, B., & Kubota, Y., (2020), Past and future decline of tropical pelagic biodiversity. Accepted by PNAS.
- Fan, M., **Feng, R.**, Geissman, J.W., and Poulsen, C.J., 2020, Late Paleogene emergence of a North American loess plateau. *Geology*, v. 48, p. 273–277.
- Tierney, J.E., Haywood, A.M., **Feng, R.**, Bhattacharya, T. and Otto-Bliesner, B.L., 2019. Pliocene warmth consistent with greenhouse gas forcing. *Geophysical Research Letters*, 46(15), pp.9136-9144.
- Li, X.-K.\*, Seth, A., Zhang, C., **Feng, R.**, Long, X., Li, W., & Liu, K. (2020). Evaluation of WRF-CMAQ simulated climatological mean and extremes of fine particulate matter of the United States and its correlation with climate extremes. *Atmospheric Environment*, (117181 ed., vol. 222).
- **Feng, R.**, Otto-Bliesner, B.L., Xu, Y., Brady, E., Fletcher, T. and Ballantyne, A., 2019. Contributions of aerosol-cloud interactions to mid-Piacenzian seasonally sea ice-free Arctic Ocean. *Geophysical Research Letters*, 46(16), pp.9920-9929.
- Tabor, C.R., **Feng, R.** and Otto-Bliesner, B.L., 2019. Climate Responses to the Splitting of a Supercontinent: Implications for the Breakup of Pangea. *Geophysical Research Letters*, 46(11), pp.6059-6068.
- Otto-Bliesner B., Lofverstrom M., Pepijn B., **R. Feng**, 2019. Arctic warming and the Greenland ice sheet during the Last Interglacial, SCIENCE HIGHLIGHTS: Paleo Constraints on Sea-Level Rise, *Past Global Changes Magazine*, vol. 27(1), 22-23.
- Carrapa, B., Clementz, M., **R. Feng**, 2019. Ecological and hydroclimate responses to strengthening of the Hadley circulation on the South American continent during the LMC, *Proceedings of the National Academy of Sciences*: 201810721.
- Capron, E., Govin, A., **Feng, R.**, Otto-Bliesner, B.L. and Wolff, E.W., 2017. Critical evaluation of climate syntheses to benchmark CMIP6/PMIP4 127 ka Last Interglacial simulations in the high-latitude regions. *Quaternary Science Reviews*, 168, pp.137-150.
- Fletcher, T., **Feng, R.**, Telka, A.M., Matthews, J.V. and Ballantyne, A., 2017, Floral dissimilarity and the influence of climate in the Pliocene High Arctic: Biotic and abiotic influences on five sites on the Canadian Arctic Archipelago. *Frontiers in Ecology and Evolution*, 5, p.19.
- **R. Feng**, Otto-Bliesner, B.L., Fletcher, T.L., Tabor, C.R., Ballantyne, A.P. and Brady, E.C., 2017, Amplified Late Pliocene terrestrial warmth in northern high latitudes from greater radiative forcing and closed Arctic Ocean gateways, 2017, *Earth and Planetary Science Letters*, 466, pp.129-138.

## Curriculum Vitae

- Lunt D., and the DeepMIP Model and Data Community, 2017, The DeepMIP contribution to PMIP4: experimental design for model simulations of the EECO, PETM, and pre-PETM (version 1.0), *Geosci. Model Dev.*, 10, 889-901, doi:10.5194/gmd-10-889-2017.
- Otto-Bliesner, B., A. Jahn, **R. Feng**, E. C. Brady, A. Hu, M. Lofverstrom, 2017, Amplified North Atlantic warming in the late Pliocene by changes in Arctic gateways, *Geophys. Res. Lett.*, 44, doi: 10.1002/2016GL071805, Editor's highlight.
- C. R. Tabor, C. J. Poulsen, D. J. Lunt, N. A. Rosenbloom, B. L. Otto-Bliesner, P. J. Markwick, E. C. Brady, A. Farnsworth, and **R. Feng**, 2016, The cause of Late Cretaceous cooling: a multi-model/proxy comparison, *Geology*, G38363-1.
- **R. Feng**, C. J. Poulsen, and M. Werner, 2016, Intensification of tropical circulation and tectonic extension recorded by Neogene terrestrial  $\delta^{18}\text{O}$  records of the western U.S., *Geology*, G38212-1.
- J. Li, T. A. Ehlers, S. Mutz, C. Steger, H. Paeth, M. Werner, C. J. Poulsen and **R. Feng**, 2016, Modern Precipitation  $\delta^{18}\text{O}$  and Trajectory Analysis over the Himalaya-Tibet Orogen from ECHAM5-wiso Simulations, *J Geophys Res-Atmos*, 121.
- **R. Feng** and Chris J. Poulsen, 2016, Refinement of Eocene lapse rates, fossil-leaf altimetry, and North American Cordilleran surface elevation estimates, *Earth Planet. Sci. Lett.*, 436, 130-141.
- **R. Feng**. Detangling climate and topographic history from Cenozoic proxy records: Examples from western North America and the Andes. PhD dissertation. University of Michigan, 2015.
- **R. Feng** and C. J. Poulsen, 2014, Andean elevation control on tropical Pacific climate and ENSO, *Paleoceanography*, 29, 795-809, highlighted in EOS Research Spotlights.
- **R. Feng**, C. J. Poulsen, M. Werner, P. C. Chamberlain, A. Mulch, H. Mix, 2013, Early Cenozoic Evolution of Topography, Climate, and Stable Isotopes in Precipitation in the North American Cordillera. *American Journal of Science*, 313, 613-648, highlighted on the front Page.
- **R. Feng**, J. Li, J. Wang, 2011, Regime change of the boreal summer Hadley circulation and its connection with the tropical SST. *J. Climate*, 24, 3867-3877.
- **R. Feng**, J. Li, J. Wang, 2011, The principal modes of variability of the boreal summer Hadley circulation and their variations. *Chinese J. Atmo. Sci.* (in Chinese with English abstract), 35, 1006-9895.

## COURSES

- GSCI 5150/4150: Applied Data Analysis in Earth Sciences (using R) (Designer and instructor)
- GSCI 4810/5810: Modeling our changing Atmosphere and Ocean (Designer and instructor)

## INVITED TALKS

## Curriculum Vitae

- **Feng, R.** (2020, April). *The magnitude of Earth System Feedbacks during the mid-Pliocene warm period*. Presentation for the Rowan University department seminar (invited, canceled due to COVID-19).
- **Feng, R.** (2020, March). Constraining the Earth System Feedbacks for the mid-Pliocene. Presentation for the Texas A&M department seminar (invited, canceled due to COVID-19).
- **Feng, R., et al.** (2020, February). Increasing Earth System Sensitivity from CCSM4 to CESM2 (invited). Presentation for the Community Earth System Model winter workshop.
- **R. Feng et al.,** Revisiting the problem of simulating Mid-Miocene Climate Optimum with an Earth System Model, EGU, 2019.
- **R. Feng et al.,** Solving the enigma of polar amplification during warm periods of Cenozoic icehouse climate, Aspen Workshop on The Future of Past Climate, 2019.
- **R. Feng et al.,** University of Texas at Austin, DeFord Lecture, 2019.
- **R. Feng et al.,** Seasonally sea ice-free Arctic at present-day CO<sub>2</sub> level 3-million years ago, Yale University, Climate seminar series, 2018.
- **R. Feng et al.,** Seasonally sea ice-free Arctic driven by a clean troposphere 3-million years ago, George Mason University, Department seminar, Oct. 2018.
- **R. Feng et al.,** Contributions of Miocene evolution of topography, global sea surface temperature, and CO<sub>2</sub> to paleo-environmental changes across western North America. NSF RCN funded NARLEE workshop, Ann Arbor, Michigan, May 2018.
- **R. Feng et al.,** The application of climate models in understanding past climate and topography, NARLEE workshop (supported by National Science Foundation Research Coordination Networks) , Seattle, Washington, 2017.
- **R. Feng et al.,** Solving the enigma of strongly amplified mid-Piacenzian (3.264 – 3.025 Ma) Arctic warmth, University of Hong Kong, Department of Earth Sciences, 2017, departmental seminar.
- **R. Feng et al.,** Contributions to Pliocene Arctic warmth from a clean atmosphere and enhanced forest fire emissions, 2017, selected to present at PAGES Young Scientist Meeting, oral presentation.
- **R. Feng et al.,** Reconstructing terrestrial climate by integrating earth system simulations with proxy interpretations, University of Connecticut, Center for Integrative Geosciences, 2017, departmental seminar.

### PRESENTATIONS

- **Feng, R., et al.** Contributions of aerosol-cloud interactions to mid-Piacenzian seasonally sea ice-free Arctic Ocean. December, 2019, annual meeting of the American Geophysical Union, poster presentation.

## Curriculum Vitae

- Clementz, M., Carrapa, B., **Feng, R.** (2019, October). Ecological Response to Late Miocene cooling in South America. Meeting of the Society of Vertebrate Paleontology 2019, oral presentation.
- **Feng, R.**, et al., PlioMIP1 to PlioMIP2: forcings and feedbacks contributing to a better match with proxy records, CESM workshop 2019, oral presentation.
- B. Otto-Bliesner, E. Brady, **R. Feng**, J. Zhu, and R. Tomas, Using simple indices of global climate change: PMIP and CMIP simulations and paleoclimate data to evaluate how the Earth system responds to strong forcings, 25-28, March 2019: CMIP6 Model Analysis Workshop.
- **R. Feng** et al., Dust-climate feedback to surface uplift and pCO<sub>2</sub> drawdown at the Eocene-Oligocene transition, AGU, 2018, poster presentation.
- J. Tierney, A. Haywood, **R. Feng**, et al, Patterns of warmth in the Pliocene past and the imminent future (Invited), AGU, 2018, oral presentation.
- M. Fan, **R. Feng** et al., Regional uplift and global cooling caused diachronous aridification in the western U.S. during the late Eocene-early Oligocene. International Sedimentological Congress, 2018, oral presentation.
- **R. Feng** et al., Tropical cyclones and climate of the mid-Piacenzian warm period in a super high-resolution atmosphere-ocean coupled simulation, AGU, Dec. 2017, poster presentation.
- **R. Feng** et al., Solving the enigma of Arctic amplification during the Mid-Piacenzian Warm Period using the new Community Earth System Model, first meeting of Paleoclimate Model Intercomparison Project Phase 4, Stockholm University, Sep. 2017, speed talk & poster.
- **R. Feng**, Bette Otto-Bliesner, Tamara Fletcher and Ashley Ballantyne, Esther Brady. Contributions to Pliocene Arctic warmth from a clean atmosphere and enhanced forest fire emissions. AGU fall meeting, 2016, poster presentation.
- T. Fletcher, K. J. Brown, L. Warden, A. Z. Csank, **R. Feng**, P. E. Higuera, N. Rybczynski, A. Ballantyne. Climate-Vegetation-Fire Interactions: Pieces in the Pliocene Polar Puzzle. AGU fall meeting, 2016, poster presentation.
- E. C. Brady, B. L. Otto-Bliesner, **R. Feng**, S. Stevenson, N. A. Rosenbloom. Importance of Orbital Forcing for Pliocene ENSO. AGU fall meeting, 2016, poster presentation.
- **R. Feng**, B. Otto-Bliesner, E. Brady. Simulations of Pliocene Arctic climate with prognostic aerosol-cloud interactions. CESM summer workshop, 2016, oral presentation.
- **R. Feng**, B. Otto-Bliesner, E. Brady. Contributions to Pliocene Arctic warmth from removal of anthropogenic aerosol. CESM winter workshop, 2016, oral presentation.
- **R. Feng**, B. Otto-Bliesner, E. Brady. Responses of Arctic Climate to CO<sub>2</sub> and Orbital forcing during the Pliocene. PlioVAR workshop at the University of Leeds, 2016, oral presentation.
- B. Otto-Bliesner, E. Brady, **R. Feng** et al (invited). Pliocene Climates: The Nature of the Problem Revisited, 2015, AGU.

## Curriculum Vitae

- **R. Feng**, C. J. Poulsen and M. Werner. Intensification of tropical circulation documented by Neogene terrestrial  $\delta^{18}\text{O}$  records of the western U.S. CESM winter workshop, 2016, oral presentation.
- **R. Feng**, B. Otto-Bliesner, E. Brady and C. Tabor. Responses of Arctic Climate to  $\text{CO}_2$  and Orbital forcing during the Pliocene. Workshop on Pliocene climate variability, University of Leeds, oral presentation.
- **R. Feng** and Chris J. Poulsen. Tropical Pacific responses to Neogene Andean uplift and highlatitude sea ice expansion, CESM summer workshop, 2015 oral presentation.
- C., J. Poulsen, **R. Feng**, and R. P. Fiorella (invited). The Role of Topography on Continental Water Cycling and Water Stable Isotope Compositions over Geological Time Scales. 2014, AGU.
- **R. Feng** and C. J. Poulsen, 2014. Factors Contributing to the Late Cenozoic Cooling and Aridification of Southwestern North America. Dec 17<sup>th</sup>, 2014. Annual Meeting of American Geophysical Union (AGU), poster presentation.
- J. Li, T. A. Ehlers, M. Werner, S. Mutz, C. Steger, H. Paeth, C. J. Poulsen, and **R. Feng**, 2014. Late Quaternary Climate and Precipitation  $\delta^{18}\text{O}$  variations over the Tibetan Plateau from Paleoclimate Modeling. Dec 17<sup>th</sup>, 2014. Annual Meeting of American Geophysical Union (AGU), poster presentation.
- **R. Feng** and C. J. Poulsen, 2013, Dissipation of El Niño-like climate conditions through Andean uplift. Dec 11<sup>th</sup>, 2013, Annual meeting of American Geophysical Union (AGU), oral presentation.
- **R. Feng**, C. J. Poulsen and M. Werner, 2012, Reconstructing early Cenozoic topography of the North American Cordillera from authigenic mineral  $\delta^{18}\text{O}$  – Moving beyond the Rayleigh distillation. Dec 4<sup>th</sup>, 2012, Annual meeting of American Geophysical Union (AGU), poster presentation.
- **R. Feng**, C. J. Poulsen and H. Mix, 2012, Simulated Eocene meteoric  $\delta^{18}\text{O}$  response to north-south topographic migration of the North American Cordillera. April 13<sup>th</sup>, 2012, Michigan Geophysical Union (MGU), poster presentation.

### GRANTS (FUNDED AND PENDING)

- C. Badgley et al., 2017, Mammal diversification in relation to dynamic landscapes, NSF RCN, funded (named collaborator).
- R. Feng (co-PI), 2018, Collaborative Research: Integrating tectonics, climate, and mammal diversity. NSF, Integrated Earth System (funded with \$122K).
- R. Feng (PI), 2018, NCAR Accelerated Scientific Discovery large computing allocation (funded with 12 Million core hours at Cheyenne Supercomputer).
- R. Feng (co-PI), 2019, NSF Collaborative Research: Paleoclimate perspective on the response of Southwest North American rainfall to elevated greenhouse gases (Funded with \$150K)

## Curriculum Vitae

- R. Feng (PI), 2019, supplemental computing grant to Cheyenne supercomputer (Funded with 9 million core hours)
- R. Feng (co-PI), 2020, NSF Collaborative Research: Tipping the scales of the global carbon cycle: Mountain-building, silicate weathering and organic carbon export". Sponsored by National Science Foundation (pending).

### PROFESSIONAL EXPERIENCE

#### Co-Conveyer

World Climate Research Programme (WCRP) Climate Science week at AGU 2019

Session on "Climate Change in Geological Records and Earth System Models: Lessons for the Future from CMIP6 Paleoclimate Efforts"

#### Media coverage

NSF:

[https://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=298483&org=NSF](https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=298483&org=NSF)

Earth.com:

Prehistoric atmospheric changes led to South American mammal diversity

UA news:

<https://uanews.arizona.edu/story/climate-grasses-and-teeth-evolution-south-america-mammals>

UConn CLAS news:

<https://clas.uconn.edu/2019/05/01/geological-record-provides-a-window-to-past-flora-and-fauna/>

#### Advisees

Junya Wu (UConn Geography, associate advisor)

Elena Robakiewicz (UConn Geoscience, associate advisor)

Xueke Li (UConn Geography, thesis chapter advisor)

Qualifying exam committee member for: Sarah Brisson, Elena Robakiewicz, Junya Wu, Samantha Dow

#### Editor

Climate of the past

2018-present

#### Outreach

AGU OSPA Judge

2016, 2019

Volunteer at NCAR Super Science Saturday

2015, 2016

Mentor at NCAR Undergraduate Leadership Workshop

2015

## Curriculum Vitae

### Reviewer

NSF P2C2 program, European Research Council proposal, Journal of Climate, Nature Geoscience, Earth and Planetary Science Letters, Climate of the Past, Geophysical Research Letters, Climate Dynamics, Geology, Nature Communications, Paleoceanography and Paleoclimatology

### PROFESSIONAL POSITIONS

University of Connecticut	Aug 2019 – present Assistant Professor
	Jan 2018 – May 2019 Assistant Professor in Residence
National Center for Atmospheric Research	Sep 2015 – Dec 2017 Postdoctoral Researcher
University of Michigan: Ann Arbor, MI,	Sep 2010 – Sep 2015 Graduate Student Research/Teaching Assistant
Shell Wind Energy Inc.: Houston, TX	May 2013 - July 2013 Technical Intern
Wuhan Central Meteorological Observatory: Wuhan, China	Mar 2007 – May 2007 Technical Intern

### AWARDS

- PAGES (PAST Global changES) Young Scientist Meeting travel support, € 975, 2017.
- Early Career Scientist travel grant from the University of Leeds, \$1600, 2016.
- Early Career Scientist travel grant from NCAR, \$1000, 2015, 2016.
- Rackham Graduate Student Travel Grant, \$700, 2012, 2013, 2014
- Rackham International Student Fellowship, \$10,000, May-Sep, 2012
- Awarded poster by Students' Choice of Michigan Geophysical Union, April 13<sup>th</sup>, 2012
- Early admission to the graduate program at the Institute of Atmospheric Physics with entrance exam waived, 2007
- Outstanding graduate, Nanjing University, 2007
- People's Scholarship (top 5%, 10%, 10% of GPA ranking), Nanjing University, 2006, 2005, 2004.