

**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:***

- Fan M., **Feng R.**, Poulsen C., J Geissman, (in review at *Geology*) Late Paleogene Emergence of a North American Loess Plateau.
- Aspen Global Change Institute Paleoclimate Group (with **Ran Feng**) (in Review at *Science*). The Future of Past Climate.
- 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. (in review at *PNAS*) Past and future decline of tropical pelagic biodiversity.

***Published:***

- **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*. <https://doi.org/10.1029/2019GL083960>
- 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*. <https://doi.org/10.1029/2019GL083802>
- Tabor, C.R., **Feng, R.**, & Otto-Bliesner, B.L., 2019. Climate responses to the splitting of a supercontinent: Implications for the breakup of Pangea. *Geophysical Research Letters*, <https://doi.org/10.1029/2018GL081510>.
- 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, <https://doi.org/10.22498/pages.27.1.22>.

## Curriculum Vitae

- 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.
- 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.

## Curriculum Vitae

- **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

- Spring/Fall 2018/Spring 2019, GSCI 1050: Earths' Dynamic Environment (Introduction to Geology) (Instructor)
- Spring 2018/Spring 2019 GSCI 5150: Data Analysis in Earth Sciences (using R) (Designer and instructor)
- Fall 2019 GSCI 4810: Modeling our changing atmosphere and ocean (Designer and instructor)

### INVITED TALKS

- **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.

## Curriculum Vitae

- **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

- **R. Feng**, B. Otto-Bliesner, E. Brady, et al. From PlioMIP1 to PlioMIP2: forcings and feedbacks contributing to a better match with proxy records. CESM Summer workshop, 2019, June 17 – 19 (talk).
- 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 (poster).
- **R. Feng** et al., Dust-climate feedback to surface uplift and pCO<sub>2</sub> drawdown at the Eocene-Oligocene transition, AGU, 2018, (poster).
- J. Tierney, A. Haywood, **R. Feng**, et al, Patterns of warmth in the Pliocene past and the imminent future (Invited), AGU, 2018 (talk).
- 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 (talk).
- **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).
- **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** et al., Pliocene Arctic warmth from enhanced forest fire emissions, PAGES Young Scientist Meeting, 2017 (talk).
- **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).
- 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).
- 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).
- **R. Feng**, B. Otto-Bliesner, E. Brady. Simulations of Pliocene Arctic climate with prognostic aerosol-cloud interactions. CESM summer workshop, 2016 (talk).

## Curriculum Vitae

- **R. Feng**, B. Otto-Bliesner, E. Brady. Contributions to Pliocene Arctic warmth from removal of anthropogenic aerosol. CESM winter workshop, 2016 (talk).
- **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 (talk).
- **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 (talk).
- **R. Feng**, B. Otto-Bliesner, E. Brady and C. Tabor. Responses of Arctic Climate to CO<sub>2</sub> and Orbital forcing during the Pliocene. Workshop on Pliocene climate variability, University of Leeds (talk).
- **R. Feng** and Chris J. Poulsen. Tropical Pacific responses to Neogene Andean uplift and highlatitude sea ice expansion, CESM summer workshop, 2015 (talk).
- 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 (talk).
- **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) (talk).
- 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) (talk).
- **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) (talk).
- **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).
- **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).

## GRANTS

- R. Feng (co-PI), 2019, NSF Collaborative Research: Paleoclimate perspective on the response of Southwest North American rainfall to elevated greenhouse gases (funded with \$149,000)
- R. Feng (co-PI), 2018, Collaborative Research: Integrating tectonics, climate, and mammal diversity. NSF, Integrated Earth System (funded with \$122,000).

## Curriculum Vitae

- C. Badgley et al., 2017, Mammal diversification in relation to dynamic landscapes, NSF RCN, funded (named collaborator).
- R. Feng (PI), 2018, NCAR Accelerated Scientific Discovery large computing allocation (funded with 12 Million core hours at Cheyenne Supercomputer).
- R. Feng (PI), 2018, University Large Allocation request (funded with 5 Million core hours at Cheyenne Supercomputer).

### PROFESSIONAL EXPERIENCE

#### Conveyer

**Upcoming:** 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

Sarah Brisson (UConn Geoscience, candidacy exam)

Elena Robakiewicz (UConn Geoscience, candidacy exam)

Xueke Li (UConn Geography, thesis chapter)

#### Editor

Climate of the past

2018-present

#### Outreach

AGU OSPA Judge

2016

## Curriculum Vitae

Volunteer at NCAR Super Science Saturday 2015, 2016  
Mentor at NCAR Undergraduate Leadership Workshop 2015

### 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

### PROFESSIONAL POSITIONS

University of Connecticut Aug 2019  
Assistant Professor

- Teaching & research

University of Connecticut Jan 2018 – July 2019  
Assistant Professor in Residence

- Teaching & research

National Center for Atmospheric Research Sep 2015 – Dec 2017  
Postdoctoral Researcher

- Simulating Pliocene fire emission and aerosol-cloud interaction using Community Earth System Model (CESM)
- Simulating Pliocene Climate for Pliocene Model Intercomparison Phase 2 (PlioMIP2)

University of Michigan: Ann Arbor, MI, Sep 2010 – Sep 2015  
Graduate Student Research/Teaching Assistant

- Simulating responses of regional climate, and  $\delta^{18}\text{O}$  and  $\delta\text{D}$  of precipitation and soil water of tropical Pacific and western U.S. to Cenozoic evolutions of tectonic, climate and vegetation using earth system models of CESM and ECHAM-JSBACH
- Teaching assistant of Climate and Climate Change (twice), Introduction to Geomorphology and Physical Oceanography

Shell Wind Energy Inc.: Houston, TX May 2013 - July 2013  
Technical Intern

- Designing and programming MATLAB models to explore potential revenue from installing electricity storage systems at wind farms

Wuhan Central Meteorological Observatory: Wuhan, China Mar 2007 – May 2007  
Technical Intern

- Creating a database for station observations of heavy fog events at Wuhan Tianhe International Airport

## Curriculum Vitae

### **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.