

Curriculum Vitae

Charles S. Jackson
Institute for Geophysics
The Jackson School of Geosciences
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Education

- Ph.D. Geophysical Science 1998
Department of the Geophysical Sciences, University of Chicago
Dissertation title: Sensitivity of Stationary Wave Amplitude to Laurentide Ice Sheet Topography and the Interpretation of the Heinrich Event Climate Record
Principal advisor: Professor Douglas R. MacAyeal
- B.S. Physics 1992
Haverford College, Haverford, Pennsylvania
Senior Thesis: Critical and Finite-Size Behavior of the Heisenberg Model with Face-Centered-Cubic Anisotropy
Advisor: Professor Lyle Roelofs

Positions

- Jackson School Theme Leader for Climate and the Environment, April 2019 – present; The John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin
- Division Head for Climate Dynamics, Sept. 2016 – present: Institute for Geophysics, The John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin
- Adjunct Research Professor, May 2013 – present: Department of Geology at Portland State University
- Lecturer, Sept. 2010 – present: Department of Geological Sciences, The John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin
- Research Scientist, Sept. 2005 – present: Institute for Geophysics, The John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin

Research Associate, Sept. 2000 – Aug. 2005: Institute for Geophysics, The John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin

Visiting Research Scientist, Jan. 1998 – Aug. 2000: Program in Atmospheric and Oceanic Science, Princeton University serving the NOAA Geophysical Fluid Dynamics Laboratory

Honors

Institute for Geophysics Director's Circle of Excellence (2012, 2013, 2014)

National Academy of Sciences Kavli Frontiers of Science Fellow (November 2006)

Invited Speaker Tokyo University Tamura Symposium "Frontiers in Dynamics: Physical and Biological Systems" *Inverse Modeling the Greenland Ice Core Record of Abrupt Climate Change in a World of Uncertain Physics*. (2006)

Jackson School of Geosciences Young Investigator Award 2005 – 2006

Institutional Program Development

Member, UTIG Computational Scientist Search Committee, 2020

Chair, Jackson School Endowment Committee, 2019/20

Member, DGS Climate Faculty Search Committee, 2018/19

Member, UTIG Director Search Committee, 2018/19

Member, Jackson School Endowment Committee, 2017 – 2020

Chair, UTIG Graduate Fellowships Committee, 2012 – 2018

Member, ICES (now Oden Institute) Moncrief Chair in oceanography search committee

Member, Strategic Planning Committee Jackson School of Geosciences, 2008 – 2010

Member, UTIG Science Council Jackson, 2010 – 2013

Chair, UTIG Seminar Committee, Institute for Geophysics, 2009 – 2012

Member, UTIG Annual Evaluations Performance Committee, 2010, 2011, 2014.

Climate Systems Science Search Committee Member of committee to identify candidates as part of a new JSG program in Climate Systems Science.

Climate Program at UT Institute for Geophysics: Helped direct the use of initial funding from the G. Unger Vetlesen Foundation to the Institute for Geophysics to establish a program in climate research organized around the theme of advanced data and model analysis of climate. The group expanded to include Dr. Robert Scott in 2002 and Dr. Brian Arbic in 2005.

Vision development for Jackson School Initiative in Climate and Environmental Change Science:

Organized a series of vision planning meetings among members to the Jackson School to create a climate initiative that would complement the goals of a hydrology initiative.

Professional Community Service

- Selected member of NCAR's HPC User Group. Advises CISL (Computational and Information Systems Laboratory) on present and future HPC systems, configurations, and initiatives, including the need for training and workshops on current HPC software, tools, and technologies and software services.
- Faculty Advisor for University of Texas at Austin Science Olympiad undergraduate student organization (<https://www.atxscioly.org>)
- CISL's HPC Allocation Panel, 3-year term starting Fall 2019; National Center for Atmospheric Research, Computational and Information Systems Laboratory
- Co-author 2017 US Department of Energy "Grand Challenges for Biological and Environmental Research: Progress and Future Vision"
- Coordinated and co-authored report from a 2016 Department of Energy Workshop on "Advancing Cross-cutting Ideas for Computational Climate Science"
- Provided expert input for ASCR-BER Exascale Requirements Review for Biological and Environmental Research
- Invited participant of the Computing Community Consortium visioning process on "Uncertainty in Computation", Washington DC. 2014.
- Co-Chair NCAR Paleoclimate Working Group (2014 – 2018)
- NSF Proposal Review Panel (2008, 2010, 2012, 2014, 2015, 2016, 2017)
- DOE Proposal Review Panels (2010, 2012, 2013)
- NASA Proposal Review Panel (2013, 2016)
- IPCC Expert Meeting on Assessing and Combining Multi Model Climate Projections, National Center for Atmospheric Research, Boulder CO, USA, (25-27 January 2010)
- Associate Editor for *Reviews of Geophysics* (January 2005 – 2010).
- Associate Editor for *Geophysical Research Letters* (Sept. 2001 – Feb. 2004).
- Member of American Meteorological Society and American Geophysical Union

Research Funding Awards

DOE CMDV, award DE-SC0016401 “Coupling Mechanistically the Convective Motions and Cloud Microphysics in a Climate Model”, 9/1/16 -8/31/19, Charles Jackson (Institutional lead PI, project co-PI), \$346,344 (UT portion)

DOE SciDAC, award DE-SC0008083 “Predicting Ice Sheet and Climate Evolution at Extreme Scales (PISCEES)”, August 15, 2012 – August 14, 2017, Charles Jackson (co-PI, project lead in uncertainty quantification), William Lipscomb (LANL, PI), + 15 other co-PIs. \$549,999 (UT portion)

NSF Office of Polar Programs, award ANT-1142139 “The Land unknown: Assessing Data Requirements for Modeling Change in the Antarctic Ice Sheet with an Emphasis on the Subglacial Bed”, June 1st, 2012 – May 31st, 2015, Charles Jackson (co-PI), Christina Hulbe (Portland State University, PI), \$276,289 (UT portion)

KAUST CRG: “Optimization and Uncertainty Quantification of Ocean Boundary Layer Physics” Sept. 1, 2012 – August 31st, 2015, Charles Jackson (UT PI) and Ibrahim Hoteit (KAUST PI) \$237,092 (UT portion)

Jackson School Equipment Matching Program “High Performance Storage and Analysis Server for Climate and Cryospheric Research”; Charles Jackson (PI), Yuko Okamura (co-PI), Ginny Catania (co-PI) award amount of \$21,000 toward purchase of Dell PowerEdge 710 server, five Dell PowerVault MD1200 storage arrays, and 10GigE hardware. September 2011

DOE Climate and Environmental Sciences, award DE-SC0006985 “Collaborative Project: The problem of bias in defining uncertainty in computationally enabled strategies for data driven climate model development; Charles Jackson (PI), Gabriel Huerta (Indiana Univ., Co-PI) \$465,166; Sept. 15, 2011 – Sept. 14, 2014.

NASA Cryosphere, award NNX11AH89G: “That Un-Certain Thing: Estimating Basal Geometry Uncertainties Important to Projections of Thwaites Glacier Dynamics” Charles Jackson (PI) \$730,195; April 2011- March 2014.

KAUST AEA partnership with UT, award US 00003: “Optimization and Uncertainty Quantification of Ocean Boundary Layer Physics” July 1, 2010 – June 30th, 2012, Charles Jackson (UT PI) and Ibrahim Hoteit (KAUST PI) \$362,369 (UT portion)

NSF program in Cyber enabled, Innovation, and Discovery (CDI), award CDI 0941678: “Dynamics of Ice Sheets: Advanced Simulation Models, Large-Scale Data Inversion, and Quantification of Uncertainty in Sea Level Rise Projections” Sept 2009 – August 2013 Omar Ghattas (PI) (\$2,000,000)

DOE program in Ice Sheet Modeling, award DE-SC0002710: “Uncertainty Quantification for Large-Scale Ice Sheet Modeling and Simulation” Sept 2009 – August 2012 Omar Ghattas (PI) (\$940,000)

DOE program in Abrupt Climate Change, award DE-FG02-08ER64619: “Searching for Atlantic Thermohaline Circulation Strength Threshold Leading to Abrupt Change of the African Monsoon” Co-PIs Charles Jackson (UT PI) and Ping Chang (Texas A&M University PI) Sept. 01, 2008 – August 31, 2011 (UTIG portion \$188,294)

KAUST Program in Computation Earth Sciences and Engineering (CESE) Charles Jackson (PI)
“Toward Robust Estimates of Climate Prediction Uncertainty” September 1, 2008 – August
31st, 2009, Charles Jackson (PI) \$155,000

NSF program in Earth System History, award OCE 0402363 “Collaborative Research: An inverse
model study of abrupt climate change” May 1, 2004-April 30, 2007, Charles Jackson (PI) and
Olivier Marchal (co-PI) (Woods Hole Oceanographic Institution), \$544,439 (UTIG portion
\$405,787)

NSF program in Collaborations in the Mathematical Geosciences, award OCE 0415738
“Collaborative Research: Stochastic representation of parameter uncertainties within model
predictions of future climate” Sept. 1, 2004-Aug. 31, 2007, Charles Jackson (PI), Mrinal Sen,
and Gabriel Huerta (University of New Mexico), \$700,720 (UTIG portion \$490,059)

Jackson School of Geosciences “Uncertainty in the Climate Modeling Process and Its Implications
for Predictions of Global Warming and Water Resources” June 1st, 2005 - August 31st, 2007,
Charles Jackson (PI), Mrinal Sen (co-PI) \$250,000

Jackson School of Geosciences “High Performance Computational Cluster for Climate Research”
Charles Jackson (PI), Mrinal Sen (co-PI) \$55,000

Computational Awards

NSF XSEDE ATM160015 “Climate model calibration and hypothesis testing”, 4.7M core-hours on
Stampede. The equivalent value of this award is \$162,507. 10/1/2016 – 9/30/2017

KAUST “Optimization and Uncertainty Quantification of Ocean Boundary Layer Physics”, 20M
core hours on Shaheen. 9/1/2012 – 8/39/2015

NSF Teragrid ATM100049 “Quantifying parametric Uncertainties within the NCAR Community
Atmosphere Model (CAM4) using Bayesian stochastic inversion”, 2.2M core-hours on
Ranger. 10/1/2010 – 9/30/2011

Teaching

2010, 2011, 2013, 2017, 2018, 2020

“Statistical Data Analysis” The course provides concepts in statistical analysis appropriate for
assessing the reliability of interpretations of phenomena that evolve in time and space common
to the atmosphere, ocean, ice and solid earth systems. The course addresses the need within the
research community to understand how data quality and model adequacy affect scientific
assessments of global climate change. Example problems include the detection and attribution of
anthropogenic forcing of climate, the relationship between sea surface temperature anomalies
and drought, development and interpretation of paleoclimate archives, and uncertainty
quantification in model projections of future climate.

Spring 2015

“Uncertainty Quantification” The course reviews strategies for uncertainty quantification from
the perspective of a climate scientist who would like to use instrumental, satellite, and climate
proxy data to develop and test the reliability of global scale climate models to make inferences
about climate change. The course will follow topics covered in a newly published textbook

Uncertainty Quantification: Theory, Implementation, and Applications by Ralph C. Smith. The text will be supplemented by discussion about the strength and limitation of existing methods to address the challenges that arise with the application of standard UQ strategies to models of multi-scale phenomena for which we have poor or limited observations.

Field Work

Member of team that measured ice-stream strain rates at the onset region of ice stream D, West Antarctica. Dr. Robert Bindshadler, principle investigator. (1996)

Organization of Symposia

Co-organized CESM Paleoclimate Working Group Winter Meeting at the University of Texas, February 28th – March 2nd, 2018.

Co-organized workshop “Advancing X-cutting Ideas for Computational Climate Science”, Washington, D.C., September 12-13, 2016.

Co-organized session on “Uncertainty Quantification for Climate Modeling” (SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland, April 2016).

Co-director of UNESCO funded workshop on “Uncertainty Quantification in Climate Modeling and Projection” at the International Center for Theoretical Physics, Trieste Italy, 13-17, 2015. <http://indico.ictp.it/event/a14268/>

Co-organized session on “Uncertainty Quantification in Earth System Modeling, Observation, and Prediction” (SIAM Conference on Uncertainty Quantification, Savannah Georgia, April 2014)

Co-organized “FEniCS ice sheet modeling workshop”, University of Texas at Austin, August 2013.

Co-organized session on “Uncertainty Quantification in Climate Modeling and Prediction” (SIAM annual meeting, San Diego, July 2013)

Co-organized session on “Climate Uncertainty Quantification” at SIAM (Society for Industrial and Applied Mathematics) Conference on Uncertainty Quantification 2012.

Co-organized Harrington Fellows Symposium on *Abrupt Climate Change* at the University of Texas, April 15, 2005. Honored speakers included Richard Alley (Penn State), Thomas Stocker (Univ. Bern), Philip Marcus (UC Berkeley), and Lonnie Thompson (Ohio State).

Research Scientist Associate V Supervision

Michael Tobis (May 2007 – May 2013)
Roustam Seif (May 2013 – May 2018)

Research Scientist Associate I Supervision

Dmitri Matrosov (Sept. 2005 – March 2006)
Gail Gutowski (Sept. 2010 – Sept. 2011)

Benjamin Wagman (Aug. 2012 – Aug. 2013)

Postdoctoral Fellow Supervision

Qiaozhen Mu (Oct. 2001 – Oct. 2003) Research Assistant, University of Montana
Yulong Xia (Dec. 2001 – Dec. 2003) Research Scientist, NECP
Faming Wang (June 2003 – June 2005), Faculty at Institute of Oceanology, Qingdao China
Yi Deng (Oct. 2005 – October 2006), Now Faculty at Georgia Tech University
Christina Holland (Oct. 2004 – Dec. 2006), High School Math and Science Teacher
Fengchao Yao (Jul. 2010 – 2012) (joint with Ibrahim Hoteit, KAUST)
Muhammad Umer Altaf (Jul. 2010 – 2012) (joint with Ibrahim Hoteit)
Sarah Zedler (Sept. 2011 – 2015) (joint with Ibrahim Hoteit)
Deborah Khidder (2014 -2016)
Michael Erb (Jan. 2014 – 2016) Postdoc at Northern Arizona University
Mohammad Hattab (2014-2016) (joint with Gabriel Huerta, Univ. New Mexico) Now faculty at Johns Hopkins University

Graduate Student Supervision (*primary supervisor)

Lindsey Gulden (Dept. of Geology, June 2004 – December 2004)
*Yurun Liu (Dept. of Physics, Sept. 2004 – December 2006)
Srivatsan Ramanujam (Dept. of Computer Science) (2009)
*Shaoping Lu (Dept. of Physics, Sept. 2006 – Sept. 2010) Received PhD, 2010, Professor at Sun Yat-Sen University (Guangzhou, China)
*Jeff Picton (Institute for Computational Engineering and Sciences, January 2012 – August 2012) Received Masters degree Summer 2012
*Scott Waibel (Department of Geology, Portland State University) Received PhD August 2017
*Gail Gutowski Muldoon (Dept. of Geology, August 2011 – June 2018) Received PhD 2018
*Benjamin Wagman (Dept. of Geology, August 2013 – August 2018) Received PhD June 2018
*Ben Stephens (Dept. of Physics, June 2015 – December 2019) Received PhD December 2019
Sabiha Tabassum (Dept. of Geology, August 2018 – August 2020)

Member Dissertation Committee

Enrique Rosero (hydrology, Dept. of Geological Sciences)
Lindsey Gulden (hydrology, Dept. of Geological Sciences)
Sasha Carter (glaciology, Dept. of Geological Sciences)
Tianqong Hong (geophysics, Dept. of Geological Sciences)
Xiaojan Jiang (atmospheric chemistry, Dept. of Geological Sciences)
Bruce Frederick (subglacial geology, Dept. of Geological Sciences)
Jamin Greenbaum (ice-ocean interactions, Dept. of Geological Sciences)
Dusty Schroeder (sub-glacial hydrology, Dept. of Geological Sciences)
Naresh Neupane (regional climate dynamics, Dept. of Geological Sciences)
Luana M. Lima (hydropower forecasting, Mechanical Engineering)
Kelly Hereid (coral paleoclimate proxies, Dept. of Geological Sciences)
Meredith Brown (atmospheric dynamics, Dept. of Geological Sciences)
Lei Yin (atmospheric dynamics, Dept. of Geological Sciences)
Qinjian Jin (land-atmosphere interactions, Dept. of Geological Sciences)
Meaghan Gorman (paleoclimate proxy records, Dept. of Geological Sciences)

YongFei Zhang (land surface processes, Dept. of Geological Sciences)
Wenting Fu (climate dynamics, Dept. of Geological Sciences)
Lauren Andrews (glaciology, Dept. of Geological Sciences)
Tong Ren (Convection over land, Dept. of Geological Sciences)
Guanglin Tang (Atmosphere and ocean heat transports, Dept. of Oceanography, Texas A&M)
Chad Greene (ice-ocean interactions, Dept. of Geological Sciences)
Gang Zhang (atmospheric dynamics, Dept. of Geological Sciences)
Chris Maupin (paleoclimate, Dept. of Geological Sciences)
Sudip Chakraborty (aerosols, Dept. of Geological Sciences)
Justin Hiester (glaciology, Dept. of Geological Sciences)
Caroline Binkley (atmospheric dynamics, Dept. of Geological Sciences)
Natasha Sekhon (geochemistry, Dept. of Geological Sciences)
Chad Greene (atmosphere, ice, ocean interactions, Dept. of Geological Sciences)
Scott Waibel (ice sheet modeling, Department of Geological Sciences, Portland State University)
Nadja Herger (climate modeling, The University of New South Wales, Australia)
Son Phan (seismic inversion, Dept. of Geological Sciences)
Kwun Yip Fung (urban environment, Dept. of Geological Sciences)
Kristian Chan (planetary science, Dept. of Geological Sciences)
Lily Serach (carbon cycle, Dept. of Geological Sciences)
Sabiha Tabassum (climate and flooding, Dept. of Geological Sciences)

Undergraduate Student Supervision

Dmitri Matrosov (December 2004 – August 2005)
Margaret Duffy (Summer 2013)
Michael Shumaker (Summer 2014)
Luke Stevens (Fall 2016 – Spring 2018)
Jabyree McMaster (Summer 2019)
Claire Pluim (Honors thesis 2020/21)

High School Student Supervision

Amrita Sen (Summer 2005, 2006)
Vikram Parolkar (Summer 2009)

Manuscripts in review

Muldoon*, G. R., C. S. Jackson, D. F. Martin, D. A. Young, S. Waibel, and D. D. Blankenship.
Configuration and sea level contribution from the Antarctic Ice Sheet during the Last
Interglacial (submitted to the Journal of Climate)

Zedler*, S., C. S. Jackson, F. Yao, P. Heimbach, A. Kohl, R. B. Scott, I. Hoteit. Calibration of the
K-Profile Parameterization of ocean boundary layer mixing: Development of an inquiry
dependent test statistic. <http://arxiv.org/abs/1604.05802> (in revisions for Dynamics and
Statistics of the Climate System)

Zedler*, S., C. S. Jackson, I. Hoteit. Calibration and Scientific Evaluation of the K-Profile
Parameterization of Ocean Boundary Layer Mixing (in revisions for Dynamics and Statistics
of the Climate System)

Lu*, S., C. S. Jackson, O. Marchal, W. Thompson, L. Gulden, T. Stocker. Consistent Observational and Modeling Support for Ice Sheet Forcing of Abrupt Climate Change (undergoing revisions *Paleoceanography*)

Refereed Publications (*denotes student or postdoc)

- Stephens*, B. A. and C. S. Jackson, 2020. Abrupt transitions in an atmospheric single-column model with weak temperature gradient approximation, *Weather Clim. Dynam.*, **1**, 389–404, <https://doi.org/10.5194/wcd-1-389-2020>.
- Hattab*, M. W., C. S. Jackson, and G. Huerta, 2019. Analysis of climate sensitivity via high-dimensional principal component regression, *Communications in Statistics: Case Studies, Data Analysis and Applications*, doi:10.1080/23737484.2019.1670119
- Stephens*, B. A., C. S. Jackson, and B. M. Wagman*, 2019. Effect of tropical large-scale condensation on uncertainty in modeled projections of rainfall. *J. Climate*, **32**(19), 6571–6588, doi:10.1175/JCLI-D-18-0833.1
- Shi, Y., W. Gong, Q. Duan, C. Jackson, C. Xiao, and H. Wang, 2019. How parameter specification of an Earth system model of intermediate complexity influences its climate simulations. *Progress in Earth and Planetary Science*, 2019, doi:10.1186/s40645-019-0294-x
- Muldoon*, G. R., C. S. Jackson, D. A. Young, and D. D. Blankenship, 2018. Bayesian estimation of glacial radar chronology in Central West Antarctica. *Dynamics and Statistics of the Climate System*, **3**(1), 1–13, doi:10.1093/climatesystem/dzy004.
- Wagman*, B.M. and C.S. Jackson, 2018: A test of emergent constraints on cloud feedback and climate sensitivity using a calibrated single-model ensemble. *J. Climate*, **31**, 7515–7532. doi:10.1175/JCLI-D-17-0682.1
- Erb*, M. P., C. S. Jackson, A. J. Broccoli, D. W. Lea, P. J. Valdes, and P. DiNezio, 2018: Model evidence for a seasonal bias in Antarctic ice cores. *Nature Communications*, **9**(1), 1361, doi:10.1038/s41467-018-03800-0.
- Waibel*, M. S., Hulbe, C. L., Jackson, C. S., & Martin, D. F., 2018: Rate of mass loss across the instability threshold for Thwaites Glacier determines rate of mass loss for entire basin. *Geophysical Research Letters*, **45**, 809–816. <https://doi.org/10.1002/2017GL076470>
- Beem*, L. H., M. G. P. Cavitte, D. D. Blankenship, S. P. Carter, D. A. young, G. R. Muldoon, C. S. Jackson, M. J. Siegert, 2017: Ice flow reorganization within the East Antarctic Ice Sheet deep interior. Geological Society, London, Special Publications, **461**, 35–47 <https://doi.org/10.1144/SP461.14>.
- Nosedal-Sanchez*, A., Jackson, C. S., and Huerta, G., 2016: A new test statistic for climate models that includes field and spatial dependencies using Gaussian Markov random fields, *Geosci. Model Dev.*, **9**, 2407–2414, doi:10.5194/gmd-9-2407-2016.

- Sraj*, I., S. Zedler*, O. Knio, C. Jackson, and I. Hoteit, 2016: Polynomial Chaos–Based Bayesian Inference of K-Profile Parameterization in a General Circulation Model of the Tropical Pacific. *Mon. Wea. Rev.*, 144, 4621–4640, doi: 10.1175/MWR-D-15-0394.1.
- Jackson, C. S. and Huerta, G. 2016: Empirical Bayes approach to climate model calibration, *Geosci. Model Dev. Discuss.*, doi:10.5194/gmd-2016-20.
- Qian, Y., C. Jackson, F. Giorgi, B. Booth, Q. Duan, C. Forest, D. Higdon, Z. J. Hou, and G. Huerta. 2016: Uncertainty Quantification in Climate Modeling and Projection, *Bulletin of the American Meteorological Society*, May, 821-824, doi:10.1175/BAMS-D-15-00297.1
- Erb*, M. P., C. S. Jackson, and A. J. Broccoli. 2015: Using single-forcing GCM simulations to reconstruct and interpret Quaternary climate change, *Journal of Climate*, doi: 10.1175/JCLI-D-15-0329.1
- Khider*, D., G. Huerta, C. Jackson, L. D. Stott, J. and Emile-Geay. 2015: A Bayesian, multivariate calibration for Globigerinoides ruber Mg/Ca. *Geochem. Geophys. Geosyst.* 16, doi:10.1002/2015GC005844.
- Wagman*, B., C. S. Jackson, F. Yao, S. Zedler*, I. Hoteit. 2014: Metric of the 2–6 day sea-surface temperature response to wind stress in the Tropical Pacific and its sensitivity to the K-Profile Parameterization of vertical mixing. *Ocean Modelling*, doi:10.1016/j.ocemod.2014.04.003
- Khider*, D., C. S. Jackson, and L. D. Stott. 2014: Assessing millennial-scale variability during the Holocene: A perspective from the western tropical Pacific, *Paleoceanography*, 29, doi:10.1002/2013PA002534.
- Villagran*, A., G. Huerta, M. Vannucci, C. S. Jackson, and A. Nosedal. 2015: Non-Parametric Sampling Approximation via Voronoi Tessellations, *Communications in Statistics - Simulation and Computation*, doi:10.1080/03610918.2013.870798.
- Higdon, D., J. Gattiker, E. Lawrence, C. Jackson, M. Tobis, M. Pratola, S. Habib, K. Heitmann & S. Price. 2013: Computer Model Calibration Using the Ensemble Kalman Filter, *Technometrics*, **55**:4, 488-500, doi:10.1080/00401706.2013.842936
- Thirumalai*, K., J. W. Partin, C. S. Jackson, and T. M. Quinn. 2013: Statistical constraints on El Niño Southern Oscillation reconstructions using individual foraminifera: A sensitivity analysis, *Paleoceanography*, **28**, doi:10.1002/palo.20037.
- Partin, J. W., T. M. Quinn, C-C Shen, J. Emile-Geay, F. W. Taylor, C. R. Maupin, K. Lin, C. S. Jackson, J. L. Banner, D. J. Sinclair, C.-A. Huh. 2013: Multi-decadal rainfall variability in South Pacific Convergence Zone as revealed by stalagmite geochemistry. *Geology*, doi:10.1130/G34718.1.
- Nowicki, S., R. A. Bindshadler, A. Abe-Ouchi, A. Aschwanden, E. Bueler, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, J. Johnson, C. Khroulev, A. Levermann, W. H. Lipscomb, M. A. Martin, M. Morlighem, B. R. Parizek, D. Pollard, S. F. Price, D. Ren, E. Rignot, F. Saito, T. Sato, H. Seddik, H. Seroussi, K. Takahasi, R. Walker, W. L. Wang. 2013: Insights into spatial sensitivities of ice mass response to environmental

- change from the SeaRISE ice sheet modeling project I: Antarctica. *Journal of Geophysical Research: Earth Surface*. doi: 10.1002/jgrf.20081
- Nowicki, S., R. A. Bindschadler, A. Abe-Ouchi, A. Aschwanden, E. Bueler, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, J. Johnson, C. Khroulev, A. Levermann, W. H. Lipscomb, M. A. Martin, M. Morlighem, B. R. Parizek, D. Pollard, S. F. Price, D. Ren, E. Rignot, F. Saito, T. Sato, H. Seddik, H. Seroussi, K. Takahasi, R. Walker, W. L. Wang. 2013: Insights into spatial sensitivities of ice mass response to environmental change from the SeaRISE ice sheet modeling project II: Greenland. *Journal of Geophysical Research: Earth Surface*. doi: 10.1002/jgrf.20076
- Bindschadler, R. A., S. Nowicki, A. Abe-Ouchi, A. Aschwanden, H. Choi, J. Fastook, G. Granzow, R. Greve, G. Gutowski, U. Herzfeld, C. Jackson, J. Johnson, C. Khroulev, A. Levermann, W. H. Lipscomb, M. A. Martin, M. Morlighem, B. R. Parizek, D. Pollard, S. F. Price, D. Ren, F. Saito, T. Sato, H. Seddik, H. Seroussi, K. Takahasi, R. Walker, W. L. Wang. 2013: Ice-sheet model sensitivities to environmental forcing and their use in projecting future sea level (the SeaRISE project). *J. of Glaciology*, 59(214), 195-224. doi:10.3189/2013JoG12J125
- Yokohata, T., J. D. Annan, M. Collins, C. S. Jackson, H. Shiogama, M. Watanabe, S. Emori, M. Yoshimori, M. Abe, M. J. Webb, and J. C. Hargreaves. 2013: Reliability and importance of structural diversity of climate model ensembles. *Climate Dynamics*, doi:10.1007/s00382-013-1733-9
- Yokohata, T., J. D. Annan, J. C. Hargreaves, C. S. Jackson, M. Tobis, M. Webb, D. Sexton, M. Collins. 2012: Reliability of multi-model and structurally different single-model ensembles, *Climate Dynamics*, 39 (3-4), 599-616, doi:10.1007/s00382-011-1203-1
- Wan, X., P. Chang, C. S. Jackson, L. Ji, and M. Li. 2011: Plausible effect of climate model bias on abrupt climate change simulations in Atlantic sector, *Deep-Sea Res.*, 58, 1904-1913, 2011, 1 citation, doi:10.1016/j.dsr2.2010.10.068
- Jackson, C. S., O. Marchal, Y. Liu, S. Lu, and W. G. Thompson. 2010: A box model test of the freshwater forcing hypothesis of abrupt climate change and the physics governing ocean stability, *Paleoceanography*, 25, PA4222, doi:10.1029/2010PA001936.
- Banner, J. L., C. S. Jackson, L. Yang, K. Hayhoe, C. Woodhouse, L. Gulden, K. Jacobs, G. North, R. Leung, and W. Washington (2010) Climate Change Impacts on Texas Water A White Paper Assessment of the Past, Present and Future and Recommendations for Action, *Texas Water Journal*, 1(1), 1-19. ISSN 2160-5319.
<https://journals.tdl.org/twj/index.php/twj/article/view/1043/740>
- Jackson, C. S. 2009: Use of Bayesian Inference and Data to Improve Simulations of Multi-physics Climate Phenomena. *Journal of Physics: Conference Series* 180 doi:10.1088/1742-6596/180/1/012029
- Villagran, A., G. Huerta, C. S. Jackson, M. K. Sen (2008) Computational methods for parameter estimation in climate models. *Bayesian Analysis*, 3(4), 823-850. doi:10.1214/08-BA331

- Jackson, C. S., M. K. Sen, G. Huerta, Y. Deng, and K. P. Bowman (2008) Error Reduction and Convergence in Climate Prediction. *Journal of Climate*, 21(24), 6698-6709, doi:10.1175/2008JCLI2112.1.
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Jackson, C., and A. J. Broccoli (2003) Orbital Forcing of Arctic Climate: Mechanisms of climate response and implications for continental glaciation, *Climate Dynamics*, 21, 539-557, DOI: 10.1007/s00382-003-0351-3.

Jackson, C. (2000) Sensitivity of stationary wave amplitude to regional changes in Laurentide ice sheet topography in single-layer models of the atmosphere, *Journal of Geophysical Research*, 105 (D19), 24443-24454. doi:10.1029/2000JD900377

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Jackson, C. (1997) Sensitivity of a two-layer model atmosphere to changes in ice-sheet topography, *Annals of Glaciology*, 25, 246-249.
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Roelofs, L.D, and C. Jackson (1993) Critical and finite-size behavior of the Heisenberg model with face-centered-cubic anisotropy. *Phys. Rev. B* 47, 197-201. doi:10.1103/PhysRevB.47.197

Book Chapters (peer reviewed)

Jackson, C. S., M. K. Sen, P. L. Stoffa, and G. Huerta (2010) Data Directed Importance Sampling for Climate Model Parameter Uncertainty Estimation, in Parashar, M. X. Li, S. Chandra, Eds., *Advanced Computational Infrastructures for Parallel and Distributed Adaptive Applications*, Wiley Publishers, 518 pages.

Jackson, C.S. Quaternary Environments (2006), In: S. A. Elias (ed) *Encyclopedia of Quaternary Science* (4 volumes, 3376 pp). Elsevier, Amsterdam.

Other Publications

Ng, E., K. J. Evans, et al. (2017) Advancing Cross-Cutting Ideas for Computational Climate Science Workshop Report, Rockville, MD. Sept. 11–12, 2016. DOI:10.2172/1341564 (Authored sections 2.2 and 2.3)

BERAC. 2017. *Grand Challenges for Biological and Environmental Research: Progress and Future Vision; A Report from the Biological and Environmental Research Advisory*

Committee, DOE/SC-0190, BERAC Subcommittee on Grand Research Challenges for Biological and Environmental Research (science.energy.gov/~media/ber/berac/pdf/Reports/BERAC-2017-Grand-Challenges-Report.pdf). Authored sections of Chapter 3, including section 3.6 and portions of section 3.8.

Jackson, C. S. (2014) Mapping the unknown. *International Innovation*, Research Media, 135, 17-19. (<http://www.internationalinnovation.com/mapping-the-unknown/>)

Murphy, R., R. Clark, M. Collins, C. Jackson, M. Rodwell, J. Rougier, B. Sanderson, D. Sexton and T. Yokohata (2011) “Perturbed parameter ensembles as a tool for sampling model uncertainties and making climate projections” in Workshop on Representing Model Uncertainty and Error in Numerical Weather and Climate Prediction Models, 20-24 June 2011, 183-208.

Jackson, C. S., (2011, January) Ice, Mud, and Blood: Lessons from climates past [review of the book *Ice, Mud, and Blood: Lessons from climates past*, by Chris Turney]. BAMS.

Jackson, C. S., (2010) “Metrics and Likelihood” in IPCC, 2010: Meeting Report of the Intergovernmental Panel on Climate Change Expert Meeting on Assessing and Combining Multi Model Climate Projections [Stocker, T. F., D. Qin, G.-K Plattner, M. Tignor, and P. M. Midgley (eds.)] IPCC Working Group I Technical Support Unit, University of Bern, Bern, Switzerland, pp. 117.

Jackson, C., and A. J. Broccoli (2000) The influence of orbital configuration on Arctic glaciation, Proceedings of the third Paleoclimate Modelling Intercomparison Project (PMIP) Workshop, WCRP-111, 177-178.

Departmental/Invited Seminar Lectures

Institute for Geophysics (April 2020) “Non-convective precipitation and the law of unintended consequences”

Northwest Pacific National Laboratory (February 2020) “Non-convective precipitation and the law of unintended consequences”

University of Texas at Austin, Department of Geological Sciences (January 2020) “Non-convective precipitation and the law of unintended consequences”

Oak Ridge National Laboratory (January 2020) “Non-convective precipitation and the law of unintended consequences”

Texas A&M University (February 2019) “Likelihood of abrupt climate change”

University of Leeds, UK (January 2019) “Quantifying Risk within Single Model Ensembles”

UK Met Office (January 2019) “Statistical approaches to (un)learning how cloud feedbacks work”

Ice Sheet Contribution to Sea Level Rise, SAMSI Climate Opening Workshop, August 2017

International Center for Theoretical Physics, Trieste, Italy (July 2015) “Use of observations in uncertainty quantification”

Midwest Mathematics and Climate Conference, KU (May 2015) “Dual-state behavior of the Community Climate System Model”

PNNL (November 2014) “The Trouble in Quantifying Climate Uncertainty”

Texas A&M University (September 2013) “Whither are Abrupt Transitions in Climate?”

SAMSI (July 2013) “The Problem of Bias in Projections of Future Climate”

KAUST (April 2013) “Climate Uncertainty Quantification”

Oak Ridge National Laboratory (November 2012) “Metrics for Climate Model Validation”

SIAM Conference on Uncertainty Quantification (April 2012) “Ice Bed Geometry: Estimates of Known Unknowns”

Math and Computational Science Division, King Abdullah University of Science and Technology (March 2012) "Challenges in Assessing Confidence in Model Predictions (as applied to climate)"

Department of Atmospheric, Oceanic, and Space Sciences, University of Michigan (January 2012) “The challenge of identifying observational constraints on climate projection uncertainties”

Statistical and Applied Mathematical Sciences Institute, Pleasanton CA, Program on Uncertainty Quantification (August 2011) “Assessing which climate model biases affect predictions”

Oxford Department of Physics “Statistical, computational, and scientific dimensions to framing questions about climate projection uncertainty” (August 2011)

UK Met Office “Statistical, computational, and scientific dimensions to framing questions about climate projection uncertainty” (August 2011)

Institute for Mathematics and its Applications, University of Minnesota, Uncertainty Quantification in Industrial and Energy Applications: Experiences and Challenges (June 2011) *Scientific and statistical challenges to quantifying uncertainties in climate projections*

Department of Physics and Astronomy, Michigan State University (June 2011) *The problem of bias in defining uncertainty in computationally enabled strategies for data-driven climate model development*

CESM Users Workshop, Climate UQ Workgroup (June 2011) *Climate projection uncertainty and the problem of defining model acceptability*

Institute for Computational Engineering and Sciences, University of Texas at Austin (May 2011) *Scientific and statistical challenges to quantifying uncertainties in climate projections*

University of New Mexico, Department of Mathematics and Statistics (February 2011) *Testing for Multiple Climate Equilibria*

Sandia National Laboratory, Climate UQ group (February 2011) *Use of Bayesian Stochastic Inversion in estimating CAM3.1 uncertainties*

National Center for Atmospheric Research, Climate UQ Workgroup, (January 2011) *Data driven climate model development*

National Center for Atmospheric Research, Atmosphere Model Working Group, (January 2011) *3336 member ensemble representative of cam3.1 uncertainty to selecting values for 15 parameters important to clouds and radiation*

University of Texas, Department of Geological Sciences (October 2009) *Misconceptions about CO₂'s influence on 20th century climate*

University of Texas, Law School (October 2009) *Climate Change and Law*

Texas A&M University, Department of Statistics (October 2009) *Merging data inversion with data assimilation*

University of Texas, Operations Research and Industrial Engineering (April 2010) *The problem of knowing what we don't know in what we know about abrupt climate change*

DOE SciDAC meeting in San Diego CA (June 2009) *Use of Bayesian Inference and Data to Improve Simulations of Multi-physics Climate Phenomena*

DOE Simulating the Spatial-Temporal Patterns of Anthropogenic Climate Change A Workshop in the Bridging Disciplines, Bridging Scale Series Santa Fe, NM July 20-22, 2009 *Use of Bayesian inference in representing and reducing uncertainties in projections of regional climate*

University of Texas, Department of Geological Sciences (September 2008) *Climate System Filtering of Earth's Orbital Geometry*

Georgia Tech, School of Earth and Atmospheric Sciences (October 2008) *Testing the Hypothesis of Sheet Forcing of Abrupt Climate Change Using Stochastic Inversion*

University of Texas, Department of Geological Sciences (October 2008) *Quantifying Uncertainties in Global Warming Projections*

Los Alamos National Laboratory, Building a Next-Generation Community Ice Sheet Model (August 2008) *Data Driven Model Development*

Edwards Aquifer Recovery Implementation Program (EARIP) (August 2008) *History, Projections, and Uncertainties Concerning Climate Impacts on Water Availability in Central Texas*

Texas Water Development Board El Paso symposium on Far West Texas Climate Change Conference (June 2008) *Projections and Uncertainties Concerning Climate Impacts on Water Availability in Western Texas*

Frontier Research Centre for Global Change, JAMSTEC, Japan, symposium on Climate Risk Assessment (February 2008) *Model ensembles and observational constraints*

Department of Math and Statistics, University of New Mexico (September 2007) *Uncertainty Quantification in Climate Prediction*

Sandia Workshop on Uncertainty Quantification and Large-Scale Inverse Problems (September 2007) “*Uncertainty Quantification in Climate Prediction*”

Los Alamos National Laboratory (September 2007) *Impacts of Systematic Error Reduction on CAM3.1 Sensitivity to CO2 Forcing*

Department of Geological Sciences, UT Arlington (September 2007) *Fresh water forcing hypothesis of abrupt climate change: A test of consistency with sea level reconstructions*

Institute for Geophysics, Brown Bag (Fall 2007) *An Inverse Model Study of Abrupt Climate Change with A 4 Box Model* (presented jointly with graduate student Shaoping Lu)

Geophysical Fluid Dynamics Laboratory (January 2007) *Impacts of Systematic Error Reduction on CAM3.1 Sensitivity to CO2 Forcing*

Lawrence Livermore National Laboratory (November 2006) *Preliminary Calculation of an Upper Bound to Climate Prediction Skill*

Naval Research Laboratory (November 2006) *Preliminary Calculation of an Upper Bound to Climate Prediction Skill*

University of Tokyo, Center for Climate System Research (May 2006) *Orbital Forcing of Arctic Climate: Mechanisms of Climate Response and Implications for Continental Glaciation*

Hokkaido University, Institute of Low Temperature Science (May 2006) *Inverse Modeling the Greenland Ice Core Record of Abrupt Climate Change in a World of Uncertain Physics*

Texas A&M University, Department of Atmospheric Sciences (January 2006) *Distinguishing Mechanisms of Abrupt Climate Change in the Geologic Record of the Last Ice Age*

Woods Hole Oceanographic Institution, Geology and Geophysics (June 2005) *A Framework for Using Paleodata to Constrain Uncertainties in Climate System Dynamics*

University of Texas at Austin, Bureau of Economic Geology (March 2005) *Abrupt Climate Change*

University of Texas at Austin, Department of Physics (Sept. 2004) *The Physics of Abrupt Climate Change*

University of New Mexico, Department of Statistics (Aug. 2004) *Use of Bayesian Inference to Quantify Uncertainties in the Physics of Global Warming*

University of Texas at Austin, Bureau of Economic Geology (March 2003) *Carbon Sequestration within the context of other climate modeling uncertainties affecting predictions of future climate*

Princeton University, Geophysical Fluid Dynamics Laboratory/NOAA (Sept. 2002) *Past and Future Trends in Non-Stationary Behavior of the North Atlantic Oscillation*

Texas A&M University, Department of Atmospheric Sciences (Oct. 2001) *Response of Arctic Climate to Changes in Earth's Orbit: Implications for Continental Glaciation*

Woods Hole Oceanographic Institution, Marine Geology and Geophysics (Jan. 2001) *Response of Arctic Climate to Changes in Earth's Orbit: Implications for Continental Glaciation*

Massachusetts Institute of Technology, Physical Oceanography (Jan. 2001) *Response of Arctic Climate to Changes in Earth's Orbit: Implications for Continental Glaciation*

University of Texas at Austin, Department of Geological Sciences (Oct. 2001) *Response of Arctic Climate to Changes in Earth's Orbit: Implications for Continental Glaciation*

Princeton University, Geophysical Fluid Dynamics Laboratory/NOAA (Spring 1997) *Single and two layer models of the atmosphere and the interpretation of the Heinrich event climate record*

Course Lectures

University of Texas at Austin, Department of Geological Sciences (Fall 2018) *Climate System Physics*

NSF sponsored Ice Sheet Model Summer School, Portland State University (August 2009) *Uncertainty Quantification*

University of Texas at Austin, Department of Geological Sciences (Fall 2007) *Earth's Orbital Geometry: Climate System Filtering*

University of Texas at Austin, Department of Geological Sciences (April 2006) *Abrupt Climate Change*

University of Texas at Austin, Department of Geological Sciences (Sept. 2005) *Radiative Transfer and the Global Energy Balance*

University of Texas at Austin, Department of Geological Sciences (April 2005) *Tectonics and Climate*

University of Texas at Austin, Department of Geological Sciences (Jan. 2005) *Climate Change: Global Warming Impacts and Surprises*

University of Texas at Austin, Department of Geological Sciences (April 2004) *Tectonics and Climate*

University of Texas at Austin, Department of Geological Sciences (April 2003) *Tectonics and Climate*

University of Texas at Austin, Department of Geological Sciences (Fall 2002) *Late Pleistocene Climate*

University of Texas at Austin, Department of Geological Sciences (Fall 2002) *20th century surface air temperature trends*

University of Texas at Austin, Institute for Geophysics (Fall, 2002) *The Science and Practicalities of Uncertainty Estimation for Climate Model Predictions*

University of Texas at Austin, Department of Geological Sciences (April 2001) *Tectonics and Climate*

Public Lectures

Lower Colorado River Water Planning Group (Spring 2008) *Climate Change Projections for Texas*

Water District K Science Group (Summer 2009) *Climate Change Projections for Texas*

Kathy Caraway Elementary, 2nd Grade, (Spring 2008) Weather and Climate

Austin Atheist Society (June 2008) *The Do's and Don'ts of Climate Prediction*

UT School of Communications, Public Radio Symposium on Science Journalism (April 2008)
Unknown unknowns and the problem of quantifying uncertainties in climate prediction

Young Execs of Austin (June 2007) *The Do's and Don'ts of Climate Prediction*

The Austin Forum, Hosted by Texas Advanced Computing Center, The University of Texas (April 2007) *The Do's and Don'ts of Climate Prediction*

Deerfield Illinois Seniors Group (April 2006) *Global Warming and Precipitation Extremes*

University of Texas at Austin, Learning Activities for Mature People (UT LAMP) (April 2003)
Uncertainties in Model Predictions of 21st Century Climate

Conference Participation

Jackson, C, and B. Wagman (2018) "The outsized importance of northern hemisphere summer clouds and rainfall to global climate models" A130-2696, AGU 2018 Winter Meeting.

Jackson, C. J., Andrew Vogelmann, Wuyin Lin (2018) "Tests of Single Column Model Physics using RACORO data and Bayesian Calibration" American Meteorological Society Annual Meeting

Jackson, C, J. Jakeman, I. Tezaur, S. Price, (2016) "PISCEES Uncertainty Quantification: Scientific Context" QUEST PI meeting

- Jackson, C. J., “Paleoclimate testing framework” 2016 CESM Users Meeting, Breckenridge, CO.
- Jackson, C., S., M. P. Erb, A. J. Broccoli, D. W. Lea. Regional Sensitivity to CO2 forcing: Detection and Attribution Approach to Analyzing CO2 Component of Late Quaternary Climate Variability, AGU Fall Meeting, 2015, PP41D-07.
- Jackson, C. (2016) “Empirical Bayes approach to climate model calibration”, SIAM UQ 2016, Lausanne, Switzerland.
- Jackson, C. (2015) “Progress in developing a CAM5 Uncertainty Quantification workflow using TexMECS on Stampede”, CESM Users Workshop, Breckenridge Colorado.
- Jackson, C, J. Jakeman, I. Tezaur, S. Price, M. Eldred, P. Heimbach, M. Perego, A. Salinger, G. Stadler (2015) “PISCEES : Ice Sheet Modeling Experiments for Evaluating Sea Level Rise”, SciDAC PI meeting.
- Waibel, S., C. Jackson, D. Martin, C. Hulbe, J. Goff (2014) “The effect of bed topography on modeled grounding line migration in a conditional simulation of Thwaites Glacier West Antarctica” AGU Fall Meeting, 2014, C51A-250.
- Jackson, C., M. Hattab, and G. Huerta (2014) “(non) Emergent Constraints” AGU Fall meeting, 2014, GC44B-03.
- Jackson, C. (2014) “Representation of Thwaites Glacier Bed Uncertainty in Modeling Experiments” SIAM Conference on Uncertainty Quantification, Savannah, Georgia.
- Jackson, C., A. Nosedal Sanchez, and G. Huerta (2014) “A metric of CAM performance that includes field dependencies” NCAR Atmosphere Model Working Group
- Jackson, C., J. A. Goff, S. Waibel, C. Greene, J. Johnson, D. Young, D. Blankenship (2013) “Representation of Thwaites Glacier Bed Uncertainty in Modeling Experiments” AGU Fall meeting, 2013, C51A-0519.
- Jackson, C, S. Price, M. Eldred, P. Heimbach, J. Jakeman, I. Kalashnikova, M. Perego, A. Salinger, G. Stadler (2013) “PISCEES – Quantification of Uncertainty in Sea-Level Rise from Next-Generation Ice Sheet Models”
- Jackson, C. S. (2013) “Selecting, weeding and weighting biased climate model ensembles” NCAR Uncertainty Quantification and Analysis interest group
- Gutowski, G., and C. Jackson (2013) “Impacts of surface mass balance uncertainties on ice sheet initialization and predictions of sea level rise” NCAR Land Ice Working Group
- Jackson, C. S. (2013) “Selecting, weeding and weighting biased climate model ensembles” NCAR Atmospheric Model Working Group
- Jackson, C. S. (2012) “Selecting, weeding and weighting biased climate model ensembles” AGU Fall meeting 2012, GC32A-08.

Jackson, C. S. and K. Evans (2012) “Verification, Validation, and Uncertainty Quantification for PISCEES” SciDAC PI meeting, Washington DC (Sept, 2012)

Jackson, C. S. (2012) “Testable Confidence” CESM Uncertainty Quantification and Analysis

Jackson, C. S., P. Chang, and L. Ji (2011) *Subtropical South Atlantic trigger and atmospheric feedbacks explaining a novel CCSM3 global scale threshold sensitivity to North Atlantic freshening*, Abstract PP12B-1795 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Jackson, C. S., G. Huerta, M. Tobis (2011) *Using stochastic sampling of parametric uncertainties to quantify relationships between CAM3.1 bias and climate sensitivity (Invited)*, Abstract GC13D-03 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Yokohata, T., James D. Annan, Matthew Collins, Charles Jackson, Michael Tobis, Mark Webb, Julia C. Hargreaves (2011) *Importance of structural diversity of climate model ensembles*, GC53A-09 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Jackson, C. S., G. Huerta (Fall 2011) DOE PI meeting “Assessing which climate model biases affect predictions”

Jackson, C. S., P. Chang, and L. Ji (2010) *Modeled global scale threshold sensitivity to Greenland ice melt*, Abstract GC13A-0688 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.

Gutowski, G., C. S. Jackson, D. A. Young, and D. D. Blankenship (2010) *Pairing of Byrd ice-core data and recent radar sounding results: interpretation and uncertainty*, Abstract C13B-0566 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.

Yokohata, T., J. D. Annan, J. C. Hargreaves, C. S. Jackson, M. Tobis, M. Collins (2010) *Reliability of multi-model and structurally different single-model ensembles*, Abstract GC43C-0991 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.

Jackson, C. (2010) *Stochastic sampling of CAM4 parametric uncertainties*, NCAR, Atmosphere Model Working Group

Jackson, C. (2010) *Metrics and Likelihood*, IPCC Expert Meeting on Assessing and Combining Multi Model Climate Projections

Parolkar, V., C. Jackson, P. Chang, L. Ji, and C. Jackson (2010) *Detection of Abrupt Climate Change within Climate Modeling Experiments*. DOE Integrated Science Team Meeting.

Chang, P., L. Ji, and C. Jackson (2010) *Searching for Atlantic Thermohaline circulation strength threshold leading to abrupt change of sea-surface temperature*. DOE Integrated Science Team Meeting.

Jackson, C. S. (2010) *Updated targets and results for estimates of CAM parametric uncertainties*. CCSM Atmospheric Model Working Group

Jackson, C. S. (2010) *Metrics and Likelihood*. IPCC Expert Meeting on Assessing and Combining

Multi-model Climate Projections

- Jackson, C. (2009) *Use of Bayesian inference in representing and reducing uncertainties in projections of regional climate* DOE Simulating the Spatial-Temporal Patterns of Anthropogenic Climate Change A Workshop in the Bridging Disciplines, Bridging Scale Series Santa Fe, NM July 20-22.
- Chang, P., L. Ji, and C. Jackson (2009) *Searching for Atlantic Thermohaline circulation strength threshold leading to abrupt change of the African monsoon*. DOE meeting on Abrupt Climate Change.
- Lu, S., C. Jackson, O. Marchal, Y. Liu, W. Thompson, and T. Stocker (2008), Consistent Observational and Numerical Modeling Support for Ice Sheet Forcing of DOI event 8, *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract PP21C-1438
- Jackson, C. S., M. Tobis, and G. Huerta (2007) Evaluating Significance of Uncertainties in Climate Model Development Against Observational Uncertainty, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract GC53A-05
- Lu, S., C. Jackson, O. Marchal, Y. Liu, W. Thompson, and T. Stocker (2007), Fresh water forcing hypothesis of abrupt climate change: A test of consistency with sea level reconstructions, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract PP41C-0683
- Marchal, O., C. Jackson, J. Nilsson, A. Paul, and T. Stocker (2007) Relaxation Oscillations as a Mechanism of Abrupt Climate Change, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract PP41C-0695
- Jackson, C. S., Y. Deng, G. Huerta, and M. Sen, *Impacts of Systematic Error Reduction on CAM3.1 Sensitivity to CO2 Forcing*, 3rd WGNE Workshop on Systematic Errors in Climate and NWP Models, San Francisco, February 12-16, 2007
- Jackson, C. S., Y. Deng, G. Huerta, and M. Sen, Preliminary Calculation of an Upper Bound to Climate Prediction Skill, National Academy of Sciences Kavli Frontiers of Science Fellows Meeting (November 2006)
- Jackson, C. S., Y. Deng, G. Huerta, and M. Sen (2006), Preliminary Calculation of an Upper Bound to Climate Prediction Skill, *Eos Trans. AGU*, 87(52), Fall Meet. Suppl., Abstract GC23B-1345
- Jackson, C. (2006) Estimating Parametric Uncertainties of the Community Atmospheric Model (CAM3) and Processes Controlling Global Climate Change. 2006 Joint Statistical Meetings, Seattle WA, August 6-10.
- Jackson, C. S., G. Huerta, and M. K. Sen (2005) Using Information about the Effects of Noise in Observations to Improve Sampling of Climate Model Parameter Uncertainties. NISS/SAMSI Workshop on Collaborations in the Mathematical Geosciences. October 6 – 7.
- Jackson, C. S., G. Huerta, and M. K. Sen (2005) Using Information about the Effects of Noise in Observations to Improve Sampling of Climate Model Parameter Uncertainties. *Eos Trans. AGU*, 86(52) Fall Meet. Suppl., Abstract NG23D-0113.

- Marchal, O., C. S. Jackson, and Y. Liu (2005) Paleoclimate Implications of Uncertainties in Processes Governing Vertical Mixing in the Ocean. Eos Trans. AGU, 86(52) Fall Meet. Suppl., Abstract OS33D-08.
- Liu, Y, C. S. Jackson, O. Marchal, and T. Stocker (2005) Exploration of the Mechanism Explaining the Emergence of Unforced Millennial Scale Variability in the Bern Climate Model under Glacial Boundary Conditions. Eos Trans. AGU, 86(52) Fall Meet. Suppl., Abstract OS41A-0595.
- Holland, C., C. S. Jackson, and P. Chang (2005) Statistical Optimization of an Atmospheric GCM coupled to a Reduced Gravity Model of the Upper Tropical Ocean. Eos Trans. AGU, 86(52) Fall Meet. Suppl., Abstract PP51E-0642.
- Jackson, C. S., G. Huerta, and M. K. Sen (2005) Using Information about the Effects of Noise in Observations to Improve Sampling of Climate Model Parameter Uncertainties. NISS/SAMSI Workshop on Collaborations in the Mathematical Geosciences. October 6 – 7.
- Invited participant: 2005 NOAA Data and Information Users' Workshop, May 11-13, 2005, Asheville, North Carolina
- Jackson, C. S., M. K. Sen, and P. L. Stoffa (2004) Statistical Inversion for Quantifying Uncertainties in Climate Prediction, EOS Trans. AGU, 85(47), Fall Meet. Suppl., Abstract NG31B-0876
- Wang, F., C. S. Jackson, P. L. Stoffa, M. Flugel, and P. Chang (2004) A Stochastic Bayesian Approach to Identify the Dynamical Regimes of ENSO, EOS Trans. AGU, 85(47), Fall Meet. Suppl., Abstract A14B-06
- Gulden, L., C. S. Jackson, O. Marchal, T. F. Stocker (2004) A Model Perspective on Factors Influencing the Stability Characteristics of the North Atlantic Meridional Overturning Circulation During the Last Glacial Cycle, EOS Trans. AGU, 85(47), Fall Meet. Suppl., Abstract PP31A-0888
- Jackson, C., Q. Mu, and P. L. Stoffa, (2004) "Quantifying Climate Model Parameter Uncertainties" Ninth Annual Community Climate System Model Workshop
- Mu, Q., C. Jackson, and P. L. Stoffa (2003) Quantifying Climate Model Parameter Uncertainties. EOS Trans. AGU, 84 (46), Fall Meet. Suppl., Abstract GC31B-0188.
- Jackson, C., M. Sen, and P. Stoffa. (2002) Optimal parameter and uncertainty estimation within climate and land surface models using Bayesian stochastic inversion. Mississippi River Climate and Hydrology Conference May 13-17, 2002, New Orleans, LA.
- Xia, Y., C. Jackson, M. Sen, and P. Stoffa (2002) Optimal parameter estimation and uncertainty analysis of a land surface model using the Cabauw dataset. Mississippi River Climate and Hydrology Conference May 13-17, 2002, New Orleans, LA.

- Jackson, C., M. Sen, and P. Stoffa. (2002) Optimal parameter and uncertainty estimation within climate and land surface models using Bayesian stochastic inversion. EOS Trans. AGU, 83 (19), Spring Meet. Suppl. Abstract B32A-22.
- Xia, Y., C. Jackson, M. Sen, and P. Stoffa (2002) Optimal parameter estimation and uncertainty analysis of a land surface model using the Cabauw dataset. EOS Trans. AGU, 83 (19), Spring Meet. Suppl. Abstract B32A-08.
- Jackson, C., Q. MU, M. Sen, and P. Stoffa (2002) Measures of GCM Performance as Functions of Model Parameters Affecting Clouds and Radiation. EOS Trans. AGU, 83 (19), Spring Meet. Suppl. Abstract A51C-03.
- Clement, A., A. Hall, A. Broccoli, and C. Jackson (2001) The Importance of precessional signatures in the Tropical Climate. EOS Trans. AGU, 82 (47), Fall Meet. Suppl. Abstract U12A-0007.
- Hall, A., A. Clement, A. Broccoli, and C. Jackson (2001) Simulated excitation of the Arctic Oscillation by orbital forcing. EOS Trans. AGU, 82 (47), Fall Meet. Suppl. Abstract A22B-10.
- Broccoli, A., and C. Jackson (2001). Tropical Temperature Signals from ice sheet, greenhouse gas and orbital forcing. EOS Trans. AGU, 82 (47), Fall Meet. Suppl. Abstract PP12B-12.
- Jackson, C., and A. Broccoli (1999) The Influence of Orbital Configuration on Arctic Glaciation, Paleoclimate Modeling Intercomparison Project (PMIP) Workshop, University of Quebec, Canada.
- Jackson, C. and A. Broccoli (1999) An Atmosphere-Mixed Layer Ocean Model's Response to Orbital Variations Over the Past 120,000 Years, International Union of Geodesy and Geophysics, Birmingham, United Kingdom.
- Jackson, C. (1998) Sensitivity of Stationary Wave Amplitude to Laurentide Ice Sheet Topography and the Interpretation of the Heinrich Event Climate Record, Chapman Conference On Millennial-Scale Global Climate Change, Snowbird, Utah.
- Jackson, C. (1997) Ice Sheet Control of the Atmosphere's Stationary Waves: Linking Heinrich Ice Rafted Debris to Climate, Fall AGU, San Francisco.
- Jackson, C. (1996) Sensitivity of a Two-Layer Atmosphere to Changes in Ice Sheet Topography, International Glaciological Society symposium on Representation of the Cryosphere in Climate and Hydrological Models, Victoria, British Columbia, Canada.
- Jackson, C. (1995) The Atmosphere's Steady Response to a Heinrich Event, Fall AGU, San Francisco.
- Jackson, C. (1994) A Shallow Water View of the Atmosphere After a Heinrich Event, Fall AGU, San Francisco.
- Jackson, C. (1994) Deciphering Atmospheric Wave Signatures from a Greenland Ice Core International Glaciological Society symposium on The Role of the Cryosphere in Global Change, Columbus, Ohio.

Career Enrichment

Attendee Swiss Climate Summer School on processes and records of past climate change organized by Prof. Thomas Stocker and Dr. Andy Lotter of the University of Bern, Switzerland. (1999)

Participant in NASA Summer School for High Performance Computational Physics. (1995)

Organized and led weekly journal discussion group on the interpretation of paleoclimate proxy data and model experiments. (1995-1996)

Attendee of “Rapid climate change meeting on records of rapid climate change during the last ice age and their interpretation”. Oregon State University, Corvallis. (1994)

Primary organizer of EXPO '94 and '95. EXPO is an all-day seminar given by the students of the Department of the Geophysical Sciences at the University of Chicago.

Research assistant in project to identify a ‘Dark Matter’ candidate. Center for Particle Astrophysics, Lawrence Berkeley Laboratory. (1990)