

Postdoctoral Research Scientist

University of Illinois
Department of Plant Biology
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Current Research Projects

- 1) Modeling coordinator for the [PaleON](#) terrestrial ecosystem model intercomparison project
- 2) Atmosphere-biosphere carbon exchange inverse modeling in the Rocky Mountains using [Carbon-Tracker](#) and [RACCOON](#) tower mixing ratios
- 3) High performance computing, multivariate k -means clustering using custom parallelized software developed by the Climatemodeling research group
- 4) Processing and analyzing eddy covariance data from a northern hardwood forest

Education

Ph.D. Geology, Iowa State University, 2009

Research Focus: computational geology, geoinformatics, high-precision U-Pb geochronology

Advisor and Department: Prof. Cinzia Cervato, Dept. of Geological & Atmospheric Sciences

Thesis: *Computational Geologic Approaches for Assessing the Abundance and Distribution of Fossil Diversity Through Time*

M.Sc. Earth Sciences (Palaeobiology) University of Bristol, England, 2002

Advisor and Department: Dr. Simon Braddy, Department of Earth Sciences

Thesis: *The Colonisation of Land by Arthropods: a functional analysis and ichnological investigation*

B.S. Biology, Iowa State University, 2000

Publications

Ankur R. Desai, David J.P. Moore, William K. Ahue, Philip J. Wilkes, Stephan de Wekker, Bjørn-Gustaf J. Brooks, Teresa L. Campos, Britton B. Stephens, Russell K. Monson, Sean P. Burns, Tristan Quaife, Steve Aulenbach, and David S. Schimel. Seasonal pattern of regional carbon balance in the central Rocky Mountains from surface and airborne measurements. *Journal of Geophysical Research*, volume 116, G04009. doi: [10.1029/2011JG001655](https://doi.org/10.1029/2011JG001655)

Forrest M. Hoffman, J. Walter Larson, Richard T. Mills, Bjørn-Gustaf J. Brooks, Auroop R. Ganguly, William W. Hargrove, Jian Huang, Jitendra Kumar, and Ranga R. Vatsava. 2011.

Data Mining in Earth System Science (DMESS 2011). *Procedia Computer Science*, volume 4, pages 1450-1455. doi: [10.1016/j.procs.2011.04.157](https://doi.org/10.1016/j.procs.2011.04.157).

Bjørn-Gustaf J. Brooks. 2011. [Earth Scientist's Guide to Discrete-Time Power Spectrum Analysis](#). In: Goran Nikolic (Ed.) *Fourier Transforms-New Analytical Approaches and FTIR Strategies*, ISBN 978-953-307-232-6, InTech.

Bjørn-Gustaf J. Brooks, and Cinzia Cervato. 2010. A Habitat-based Perspective of Marine Biogeography in Passive and Convergent Tectonic Settings. *Palaeontologia Electronica*, volume 13, issue 3, [13.3.16A](#).

Bjørn-Gustaf J. Brooks. 2009. Applying Wavelet and Fourier Transform Analysis to Large Geophysical Datasets. *Lecture Notes in Computer Science*, volume 5545/2009, pages 426–434. Springer Berlin, Heidelberg. doi: [10.1007/978-3-642-01973-9_47](https://doi.org/10.1007/978-3-642-01973-9_47).

Manuscripts in preparation, review and press

Bjørn-Gustaf J. Brooks, Ankur R. Desai, Britton B. Stephens, David R. Bowling, Sean P. Burns, Andrew Watt, Sherri L. Heck, Colm Sweeney. Assessing filtering of mountaintop CO₂ mixing ratios for application to inverse models of biosphere-atmosphere carbon exchange. *Atmospheric Chemistry and Physics Discussions* (in interactive discussion). doi: [10.5194/acpd-11-25327-2011](https://doi.org/10.5194/acpd-11-25327-2011).

Employment

August 2011 – present: **Postdoctoral Research Scientist**, University of Illinois, Department of Plant Biology (advised by Michael Dietze)

October 2009 – August 2011: **Postdoctoral Research Scientist**, University of Wisconsin-Madison, Center for Climatic Research (advised by Ankur Desai)

July – October 2009: **Visiting Scientist**, Oak Ridge National Laboratory, Computational Earth Sciences Group

August 2006 – July 2009: **Lecturer**, San Jacinto College, Department of Geology

January 2003 – 2006: **Teaching Assistant**, Iowa State University, **Research Assistant**, joint project between Iowa State University and Massachusetts Institute of Technology's Geochemistry and Geochronology Laboratory

June 2004 – August 2004: **Research Assistantship**, University of Tennessee and National Science Foundation (NSF) Research Experience Undergraduate (REU): Biogeochemical Educational Experiences – South Africa

Undergraduate Students Advised

Jennifer Welch, Texas A&M University: 2010 (NSF summer internship at UW-Madison)

Ihor Sehinovych, University of Wisconsin-Madison: 2010–11 (Undergraduate research scholar project)

studying carbon exchange the mountains)

Teaching Experience

physical geology, environmental geology, introduction to meteorology

Honors and Awards

Teaching Excellence Award for outstanding contributions to collegiate academics. Iowa State University, April, 2004

Teaching Excellence Award for outstanding contributions to departmental teaching. Department of Geology, Iowa State University, April 2004

Committees

Graduate and Professional Student Senate, Iowa State University, January 2003 – January 2005

Iowa State University Athletic Council 2000

National Collegiate Athletic Association (NCAA) Student-Athlete Congress, representative for Iowa State University, 1998

The Big XII Student-Athlete Congress, representative for Iowa State University, August 1999 – May 2000