Benjamin N. Sulman
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Education

Ph.D., Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, 2012
Dissertation title: Peatland carbon cycle responses to hydrological change: Impacts on model simulations and regional carbon budgets
Advisor: Dr. Ankur R. Desai

M.S., Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, 2009
Thesis title: A comparison of carbon dioxide, water, and energy fluxes at a drying shrub wetland in northern Wisconsin, USA with nearby wetland and forest sites
Advisor: Dr. Ankur R. Desai

B.A., Physics and Astronomy, Oberlin College, 2006

Relevant Employment and Research Experience

Princeton Environmental Institute, Princeton University (June 2012-present)
Postdoctoral Research Associate: Working with the land surface and biogeochemistry component of the Geophysical Fluid Dynamics Laboratory (GFDL) Earth System Model

University of Wisconsin-Madison Department of Atmospheric and Oceanic Sciences (2007-2012)
Research Assistant: Processed and analyzed CO_2 flux measurements; Landscape carbon cycle modeling using LANDIS-II model

University of Wisconsin-Madison Department of Medical Physics (2006-2007)
Research Assistant: Programming and analysis in magnetic resonance imaging (MRI) lab

National Radio Astronomy Observatory and Oberlin College (June 2005-April 2006)
Undergraduate Research Assistant (REU): Analysis of astronomy time-series data

University of Wisconsin-Madison Department of Botany (July-August 2003)
Field Research Assistant: Tree identification and measurement

Honors and Awards
BART IGERT Fellowship, 2009-2011.
Honorable mention, DOE GREF fellowship, 2009.
UW Atmospheric and Oceanic Sciences Department award for excellent performance in first year graduate studies, 2008.
John Frederick Oberlin Scholarship, Oberlin College, 2002-2006.

Publications and Presentations
In Review:
B. N. Sulman, A. R. Desai, and D. J. Mladenoff. Modeling soil and biomass carbon responses to declining water table in a wetland-rich landscape. Ecosystems, in review.

Peer Reviewed:
R. F. Grant, A. R. Desai, and B. N. Sulman. Modelling contrasting responses of wetland productivity to changes in water table depth. Biogeosciences, in press.
B. N. Sulman, A. R. Desai, N. M. Schroeder, D. Ricciuto, A. Barr, A. D. Richardson, L. B. Flanagan, et al. (2012) Impact of hydrological variations on modeling of peatland CO_2 fluxes: results from the North American Carbon Program site synthesis. Journal of Geophysical Research, 117, G01031. doi:10.1029/2011JG001862
B. N. Sulman, A. R. Desai, N. Z. Saliendra, P. M. Lafleur, L. B. Flanagan, O. Sonnentag, D. S. Mackay, A. G. Barr, and G. van der Kamp (2010). CO_2 fluxes at northern fens and bogs have opposite responses to inter-annual fluctuations in water table. Geophys. Res. Lett. 37, L19702. doi:10.1029/2010GL044018
B. N. Sulman, A. R. Desai, B. D. Cook, N. Saliendra, and D. S. Mackay (2009). The impact of a declining water table on observed carbon fluxes at a northern temperate wetland. Biogeosciences, 6, 1115-1126. doi:10.5194/bg-6-1115-2009

Conference presentations:
B. N. Sulman, A. R. Desai, D. J. Mladenoff: Peatland carbon cycle responses to long-term hydrological change (oral presentation). American Meteorological Society 30th conference on Agricultural and Forest Meteorology/First Conference on Atmospheric Biogeosciences, Boston, MA, May 2012.
B. N. Sulman, NACP Site Synthesis Participants: Ecosystem model performance at wetlands: Results from the North American Carbon Program site synthesis (oral presentation). American Geophysical Union 2011 Fall Meeting, San Francisco, CA, Dec 2011.
B. N. Sulman, A. R. Desai, N. M. Schroeder, N. Z. Saliendra, P. M. Lafleur, L. B. Flanagan, O. Sonnentag, D. S. Mackay, A. Barr, L. Murphy, B. Riley, NACP Site Synthesis Participants: Challenges for wetland carbon cycle modeling (oral presentation). Ameriflux Science Meeting and 3rd Annual North American Carbon Program All-investigators Meeting, New Orleans, LA, Feb. 2011.
B. N. Sulman, A. R. Desai, R. M. Scheller: Sensitivity of regional forest carbon budgets to continuous and stochastic climate change pressures (oral presentation). American Geophysical Union 2010 Fall Meeting, San Francisco, CA, Dec. 2010.

B. N. Sulman, A. R. Desai, R. M. Scheller, C. M. Gough, P. S. Curtis, C. S. Vogel: Is temperature change or disturbance more important? Modeling the future of northern Great Lakes forest carbon cycling (poster). American Meteorological Society 29th Conference on Agricultural and Forest Meteorology, Keystone, CO, Aug. 2010.

B. N. Sulman: Carbon cycling in northern Michigan forests (oral presentation). LANDIS-II Users Meeting, Madison, WI, January, 2010.

B. N. Sulman, N. M. Schroeder, A. R. Desai, L. B. Flanagan, P. M. Lafleur, E. R. Humphreys, NACP Site Synthesis Participants: How well do we model wetlands? (poster). NACP Interim Synthesis, Oak Ridge, TN, Nov. 2009:

B. N. Sulman, A. R. Desai, D. S. Mackay, R. M. Scheller, P. S. Curtis, M. Balliett, T. Kratz, I. Buffam: Forests, wetlands, and lakes: comparing drivers of carbon cycling in heterogeneous northern landscapes (poster). Ameriflux meeting, Washington, DC, Sept. 2009.

B. N. Sulman, A. R. Desai: Water, biology, and climate in northern Wisconsin: Carbon dioxide fluxes at a drying wetland (oral presentation). University of Wisconsin-Madison Department of Atmospheric and Oceanic Sciences department seminar, Madison, WI, April, 2009.

B. N. Sulman, A. R. Desai, B. D. Cook, N. Z. Saliendra, D. S. Mackay: Observed carbon-water interactions in three north-temperate wetlands (poster). Ameriflux meeting, Boulder, CO, Oct 2008.

B. N. Sulman, A. R. Desai, D. S. Mackay, S. Samanta, B. D. Cook, N. Z. Saliendra: Carbon and water cycle interactions in a temperate wetland: Modeling and measuring the impact of a declining water table on regional biogeochemistry (oral presentation). 11th Annual ChEAS Meeting, University of Notre Dame Research Center – East, Land O Lakes, WI, August, 2008.

B. N. Sulman, A. R. Desai, D. S. Mackay, S. Samanta, B. D. Cook, N. Z. Saliendra: Interactions of carbon and water cycles in north temperate wetlands: modeling and observing the impact of a declining water table trend on regional biogeochemistry (oral presentation). Am. Meteorol. Society 18th Conference on Atmospheric Biogeosciences, Orlando, FL, April 2008.

Technical skills and languages:

Languages: English (Native speaker); Portuguese (Basic proficiency)
Programming languages: Numerical python, Matlab, IDL, C, C#, Fortran, LaTeX
Model experience: LANDIS-II, GFDL land model (LM3V)

Other Educational Programs:

Summer school on atmospheric modeling, Geophysical Fluid Dynamics Laboratory, Princeton, NJ, July, 2012.

4th Annual Summer Course in Flux Measurements and Advanced Modeling, University of Colorado Mountain Research Station, July, 2011.

Biosphere Atmosphere Research and Training (BART) short course on biosphere-atmosphere interactions, University of Michigan Biological Station, June, 2009.

Volunteer and outreach activities:
Constitution Committee, University of Wisconsin-Madison Department of Atmospheric and Oceanic Sciences Graduate Student Association, 2009-2010.

Tutor, Physics and Astronomy, Oberlin College, 2003-2006.

Dining Loose Ends Coordinator (head administrator), Pyle Inn Dining Cooperative, Oberlin College, 2005.

Student Finance Committee, Oberlin College, 2005.

Membership Coordinator, Pyle Inn Dining Cooperative, Oberlin College, 2004.