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23 March 2009

To the Merit Review Committee,

Please find enclosed three copies of my three year activities summary with one copy of each published or accepted paper. Since I started my career at UW in Fall 2007, accomplishments are only noted from my official start date onward (Fall 2007-Spring 2009).

Highlights 2007-2009

Teaching: I continue to receive very strong evaluations for our very popular AOS 171: Global Change. I attribute some of this to my extensive use of academic technology (clickers, online simulations, learn@uw), innovative pedagogy (in-class games, debates, media critiques, individual meetings, TA input in rubric design), and UW Writing Fellows in this class to fundamentally focus on a critique of scientific understanding of global change. I have taught a wider variety of classes now (seminars, graduate students, undergraduate majors, private readings) and enjoy the challenge of each. An ongoing theme in all my classes is a strong emphasis on professional communication and writing across disciplines, with current classes employing proposal panel reviews (AOS 520) and peer-reviewing (AOS 405).

Research: I continue to maintain regular productivity with a total of 17 published, 5 submitted, and 4 in preparation peer-reviewed publications, of which 8 are first-authored, and 1 is student authored (rate is ~4-5 papers/year). My research theme centers on regional surface-atmosphere interactions in heterogeneous systems that now extends to aquatic systems (both large and small lakes), wetlands, tropical forests, and complex terrain, with new measurements planned this summer at several of my field sites. Much new collaboration has been formed across UW, nationally, and internationally. A good number of proposals have been submitted, many rejected primarily due to lack of funds, and hopefully funding rates will improve with time.

I currently supervise four graduate students (soon to be five), one technician, and several undergraduate interns this summer, which has allowed my research to flourish and grow in diversity. Ben Sulman and I submitted my first student first-authored publication last fall and the one review we've gotten back so far has been positive. I am likely to graduate my first graduate student this summer.

Service:

Total service hours: 5-10 hours/week, ~40 hours in 2007 after 8/27, ~300 hours in 2008, ~100 hours to date in 2009

Invitations for reviews, talks, workshops, and organizing meeting sessions continue to pile up both locally and nationally, while University and department service loads have increased considerably. I am chairing the colloquium committee this year and also have created a new position, the Graduate Faculty-Liaison, to help improve communication among graduate students and faculty in the department. I also continue to do K-12 school group outreach.

General: It's been a busy couple of years, even with my tenure extended by one year (and soon to be extended by another in the Fall). Coffee is my new friend.

Sincerely,

Ankur Desai
Assistant Professor
Atmospheric & Oceanic Sciences
UW-Madison

Faculty

Outline for Three-Year Activities Summary

Faculty who participated in this exercise in previous years should use last year's activity summary. Delete the first year and add the most recent year.

I. Teaching

- a. Courses taught by semester, number of students enrolled, grade distributions past three years (attach student evaluation statistical summaries.)

Spring 2009

AOS/IES 520, 20 students

AOS 405, 20 students

Fall 2008*

AOS/IES 171, 40 students (35 completed)

Grades: A 53%, AB 9%, B 32%, BC 0%, C 0%, D 0%, F 6%

AOS 900, 6 students

Grades: A 100%, AB 0%, B 0%, BC 0%, C 0%, D 0%, F 0%

*Due to clerical error, 900/171 eval scores were combined

Spring 2008

AOS/IES 773, 5 students

Grades: A 100%, AB 0%, B 0%, BC 0%, C 0%, D 0%, F 0%

Fall 2007

AOS 171, 40 students (38 completed)

Grades: A 66% AB 13% B 8% BC 13% C 0% D 0% F 0%*

*2 failing students were able to drop mid-semester

- b. Graduate students supervised and dates of completion and titles of MS and PhD degrees for the past three years. State title of PhD and MS thesis completed during period of report.

Ruben Behnke Fall 2008- M.S. expected Summer 2010

Justin Bagley Fall 2008- Ph.D. expected Fall 2011

Will Ahue Fall 2008-, M.S. expected Spring 2010

DOD START fellowship funded

Ben Sulman Fall 2007- M.S. expected Summer 2009

Expected to continue onto Ph.D. in Desai lab in Fall 2009-

Best New AOS Graduate Student award in Spring 2008

c. Other academic activities (PhD Degree Committee membership, PhD and MS second readers, etc.)

Ph.D. Committees

Dima Smirnov	Spring 2009-	AOS
Shawn Serbin	Spring 2008-	Forest and Wildlife Ecology
Tim Wagner	Spring 2008-	AOS
Brent Maddux	Fall 2007-	AOS
Bill Sacks	Fall 2007-	Environment and Resources
Val Bennington	Spring 2007-	AOS

M.S. 2nd readers

Erica Bickford	Fall 2008	AOS
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Researcher (technician) supervision

Shelley Knuth	Spring 2007-Fall 2008	~25%
Jon. Thom	Spring 2007-	~25%

TA supervision

Monica Harkey	Fall 2008	AOS 171 (25%)
Dan Hartung	Fall 2007	AOS 171 (25%)

Undergraduate mentoring

TBD	Sumer 2009	UW Khorana Program
TBD	Summer 2009	NSF REU
M. Balliett	Summer 2009	Juday Fellow, UW Trout Lake Station
K. Framstad	Spring 2009	WISPIRG Fellow
C.Cenek	Fall 2008	UW Writing Fellow (AOS 171)
L. Taylor	Fall 2008	UW Writing Fellow (AOS 171)
M. Karow	Fall 2008	UW Writing Fellow (AOS 171)
D. Ziehr	Fall 2008	UW Writing Fellow (AOS 171)
K. Layde	Fall 2007	UW Writing Fellow (AOS 171)
K. Lau	Fall 2007	UW Writing Fellow (AOS 171)
J. Hans	Fall 2007	UW Writing Fellow (AOS 171)

II. Research

- a. Publications for past three years; for jointly authored works, list order of authorship. Include only one copy of each. List publications in the following order:

- 1) books or invited chapters in books

2009

Noormets, A., Chen, J., Gu, L., **Desai, A.R.**, 2009. The phenology of gross ecosystem productivity and ecosystem respiration in temperate hardwood and conifer chronosequences, in Noormets, A. (Ed.), Phenology of Ecosystem Processes, Springer, New York, in press.

2008

N/A

2007 (after 8/27/07)

N/A

- 2) papers published in, or accepted by, refereed journals

2009

N/A

2008

Cook, B.D., Bolstad, P.V., Martin, J.G., Heinsch, F.A., Davis, K.J., Wang, W., **Desai, A.R.**, and Teclaw, R.M., 2008. Using light-use and production efficiency models to predict forest production and carbon exchange during canopy disturbance events, *Ecosystems*, 11: 26-44, doi:10.1007/s10021-007-9105-0.

Desai, A.R., Noormets, A.N., Bolstad, P.V., Chen, J., Cook, B.D., Davis, K.J., Euskirchen, E.S., Gough, C.M., Martin, J.G., Ricciuto, D.M., Schmid, H.P., Tang, J.W. and Wang, W., 2008. Influence of vegetation and seasonal forcing on carbon dioxide fluxes across the Upper Midwest, USA: Implications for regional scaling, *Agricultural and Forest Meteorology*, 148(2): 288-308, doi:10.1016/j.agrformet.2007.08.001.

Desai, A.R., Richardson, A.D., Moffat, A.M., Kattge, J., Hollinger, D.Y., Barr, A., Falge, E., Noormets, A., Papale, D., Reichstein, M., and

Stauch, V.J., 2008. Cross site evaluation of eddy covariance GPP and RE decomposition techniques, *Agricultural and Forest Meteorology*, 148(6-7): 821-838, doi:10.1016/j.agrformet.2007.11.012.

Noormets, A.N., **Desai, A.R.**, Cook, B.D., Euskirchen, E., Ricciuto, D.M., Davis, K.J., Bolstad, P.V., Schmid, H.-P., Vogel, C.V., Carey, E.V., Su, H.B., and Chen, J., 2008. Moisture sensitivity of ecosystem respiration: Comparison of 14 forest ecosystems in the Upper Great Lakes Region, USA, *Agricultural and Forest Meteorology*, 148(2): 216-230, doi:10.1016/j.agrformet.2007.08.002.

Tang, J., Bolstad, P.V., **Desai, A.R.**, Martin, J.G., Cook, B.D., Davis, K.J., and Carey, E.V., 2008. Ecosystem respiration and its components in an old-growth northern forest. *Agricultural and Forest Meteorology*, 148(2): 171-185, doi:10.1016/j.agrformet.2007.08.008.

2007 (after 8/27/07)

Moffat, A.M., Papale, D., Reichstein, M., Hollinger, D.Y., Richardson, A.D., Barr, A.G., Beckstein, C., Braswell, B.H., Churkina, G., **Desai, A.R.**, Falge, E., Gove, J.H., Heimann, M., Hui, D., Jarvis, A.J., Kattge, J., Noormets, A., and Stauch, V.J., 2007. Comprehensive comparison of gap-filling techniques for eddy covariance net carbon fluxes, *Agricultural and Forest Meteorology*, 147(3-4): 209-232, doi:10.1016/j.agrformet.2007.08.011.

2 others published before 8/27 in 2007

3) papers submitted to refereed journals

submitted

Hollinger, D.Y., Ollinger, S.V., Richardson, A.D., Meyers, T.P., Martin, M.E., Clark, K., Curtis, P., Dail, D.B., Davidson, E.A., Davis, K.J., **Desai, A.R.**, Dragoni, D., Goulden, M., Gu, L., Katul, G.G., Paw U, K.T., Arkerbauer, T., Suyker, A.E., and Verma, S., 2009. Albedo estimates for land surface models and support for a new paradigm based on foliage nitrogen concentration, *Agricultural and Forest Meteorology*, submitted.

Miles, N.L., Richardson, S.J., Davis, K.J., Stephens, B.B., **Desai, A.R.**, Denning, A.S., and Uliasz, M., 2009. Demonstration of a well-calibrated

CO₂ mixing ratio measurement network for regional atmospheric inversions, *Journal of Atmospheric and Oceanic Technology*, submitted.

Myklebust, M., Huc, R., Wohlfahrt, G., Misson, L., Hipps, L.E., Ryel, R.J., Delpierre, N., van Gorsel, E., Arain, A., Bernhofer, C., Chojnicki, B., Curtis, P., Frohking, S., Franier, A., Lafleur, P., Aurula, M., Bolstad, P., Cavaleri, M., **Desai, A.R.**, Ito, A., Loescher, H.W., Oberbeur, O., Pumpanen, J., Ryan, M.G., Saigusa, N., and Vesala, T., 2009. The effect of LAI on eddy covariance accuracy during turbulent conditions at night. *Agricultural and Forest Meteorology*, submitted.

Sulman, B.N., Desai, A.R., Cook, B.D., Saliendra, N., and Mackay, D.S., 2009. Observations of carbon dioxide fluxes at a northern temperate wetland with a declining water table. *Biogeosciences-Discussion*, 6, 2659-2696.

Van Gorsel, E., Delpierre, N., Leuning, R., and **Fluxnet PIs**, 2009. Estimating nocturnal ecosystem respiration from the vertical turbulence flux and change in storage of CO₂. *Agricultural and Forest Meteorology*, submitted.

4) papers in conference proceedings, and project reports and videos

2009

Atilla, N., G.A. McKinley, V. Bennington, N. Urban, N. Kimura, C. Wu, **A.R. Desai**, 2009: Is Lake Superior a net carbon source or sink? 2nd North American Carbon Program (NACP) All-Investigators Meeting, San Diego, CA, Feb. 17-20, 2009, #178 (poster).

Atilla, N., G.A. McKinley, V. Bennington, N. Urban, C. Wu, **A.R. Desai**, 2009: Observed dynamics of surface pCO₂ in Lake Superior. 52nd Conference of the International Association for Great Lakes Research, Toledo, OH, May 18-22, 2009

Buffam, I., M.G. Turner, **A.R. Desai**, P.C. Hanson, M.C. Van de Bogert, J. Rusak, N.R. Lottig, E.H. Stanley, T.R. Kratz, S.R. Carpenter, 2009: Constructing a complete carbon budget for a north temperate lake district. Ecological Society of America Annual Meeting 2009, Albuquerque, NM, Aug 2-7. 2009.

Davis, K.J., J. Xiao, R. Anderson, P.V. Bolstad, K. Cherrey, B.D. Cook, **A.R. Desai**, R. Kolka, S. Running, N. Saliendra, **B. Sulman**, P.

Weishampel, 2009: Probabilistic upscaling of eddy flux measurements in the upper Great Lakes: Working towards the next generation MODIS GPP algorithm. 2nd North American Carbon Program (NACP) All-Investigators Meeting, San Diego, CA, Feb. 17-20, 2009, #9 (poster).

Desai, A.R., D.S. Mackay, B.R. Helliker, P.R. Moorcroft, 2009: Impacts of leaf phenology and water table on interannual variability of region carbon fluxes in mixed landscape. 2nd North American Carbon Program (NACP) All-Investigators Meeting, San Diego, CA, Feb. 17-20, 2009, #163 (poster).

Mackay, D.S., **A.R. Desai**, **B.N. Sulman**, D.E. Roberts, 2009: Quantifying the Role of Water Table Dynamics on Net Ecosystem Exchange of CO₂ in a Northern Temperate Shrub Wetland. AGU 2009 Spring Joint Assembly, Session H08, Toronto, Ontario.

McKinley, G.A., V. Bennington, N. Atilla, N. Urban, C. Wu, **A.R. Desai**, N. Kimura, 2009: The magnitude and mechanisms of the CO₂ flux from Lake Superior. 52nd Conference of the International Association for Great Lakes Research, Toledo, OH, May 18-22, 2009

Myklebust, M.C., G. Wohlfahrt, L. Misson, R. Huc, N. Delapierre, L.E. Hipps, R.J. Ryel, M.A. Arain, M. Bahn, C. Bernhofer, B. Chojnicki, P. Curtis, S. Frokling, P. Lafleur, B. Longdoz, E. van Gorsel M. Aurela, M. Cavaleri, **A.R. Desai**, A. Ito, H.W. Loescher, S. Oberbauer, J. Pumpanen, M.G. Ryan, N. Saigusa, T. Vesala, C. Yi, 2009: The effect of LAI on the representativeness of eddy covariance estimates of ecosystem respiration during turbulent conditions at night across a range of sites. European Geophysical Union General Assmebly 2009, Vienna, Austria, April 19-24, 2009, Geophysical Research Abstracts, v. 11, EGU2009-81 (poster).

Ricciuto, D.M., K.J. Davis, **A.R. Desai**, M.Fox, M.C. Dietze, S. Liu, Y.Q. Luo, A.D. Richardson, K. Schaefer, M. Williams, 2009: Improving carbon flux predictions in North America from the bottom up: The current state of eddy covariance based model-data fusion. 2nd North American Carbon Program (NACP) All-Investigators Meeting, San Diego, CA, Feb. 17-20, 2009, #133 (poster).

Stephens, B., S. Heck, D. Moore, **A.R. Desai**, 2009: Atmospheric CO₂ measurements in mountainous terrain to monitor regional fluxes and local disturbance. Second Integrated Land Ecosystem-Atmosphere Study (iLEAPS) Science Conference, Melbourne, Australia, August 24-

28, 2009.

Sulman, B.N., 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. Society of Wetland Scientists Joint International Conference, Madison, WI, Jun 21-26, 2009.
Urban, N.R., J.A. Perlinger, J. Mwangi, C.P. McDonald , G.A.

McKinley , **A.R. Desai**, N. Atilla, V. Bennington, 2009: Field measurements of CO₂ in and above the Great Lakes: The case for net emission of CO₂. 52nd Conference of the International Association for Great Lakes Research, Toledo, OH, May 18-22, 2009

Xiao, J., K.J. Davis, X. Zhou, T. Zhou, Y. Luo, C. Beer, B. Bond-Lamberty, **A.R. Desai**, M. Jung, B.E. Law, L. Liu, W.M. Post, M. Reichstein, D. Ricciuto, E. Tomelleri, D. Turner, S.C. Wofsy, B.K. Wylie, X. Xiao, F. Yang, L. Zhang, M. Zhao, 2009: Regional to continental upscaling of AmeriFlux data for carbon cycle studies: Progress, challenges, and new directions. 2nd North American Carbon Program (NACP) All-Investigators Meeting, San Diego, CA, Feb. 18, 2009.

2008

Atilla, N., G.A. McKinley , N.R. Urban, N. Kimura, V. Bennington, **A.R. Desai**, C. Wu, 2008: Carbon cycling in Lake Superior: Observations, models, and impacts on the regional carbon balance. ASLO Ocean Sciences Meeting 2008, Orlando, FL, Mar. 6, 2008, session 108.

Atilla N, V. Bennington, N. Kimura, G.A. McKinley , N.R. Urban, C. Wu, **A.R. Desai**, 2008: The carbon budget of Lake Superior: First results from the CyCLeS project, 51st Conference of the International Association for Great Lakes Research, Peterborough, ONT, May 2008

Atilla, N., G.A. McKinley , N. Urban, N. Kimura, V. Bennington, **A.R. Desai.**, C. Wu, 2008: Carbon cycling in Lake Superior: Observations, models and impacts on regional carbon budget. Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole, MA, July 2008. (poster)

Atilla, N., G.A. McKinley , Bennington, V., N. Kimura, C. Wu, N. Urban, **A.R. Desai**, 2008: Carbon cycling in Lake Superior: preliminary results from a modeling study, CyCLeS workshop, Madison, WI, August 2008.

Atilla, N., G.A. McKinley , V. Bennington, N. Kimura, N. Urban, C. Wu, **A.R. Desai**, 2008: Role of Lake Superior in regional carbon budget. 11th Chequamegon Ecosystem Atmosphere Study (ChEAS) meeting, University of Notre Dame Environmental Research Center , Glocebic County, MI August 2008.

Bennington, V., G.A. McKinley , N. Kimura, N. Atilla, C. Wu, N. Urban, **A.R. Desai**, 2008: Climate impacts on the circulation and thermal structure of Lake Superior, 51st Conference of the International Association for Great Lakes Research, Peterborough, ONT, May 2008

Bennington, V., G.A. McKinley , N. Kimura, N. Atilla, C. Wu, N. Urban, **A.R. Desai**, 2008: Circulation patterns of Lake Superior, Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole, MA, July 2008. (poster)

Bennington, V., G.A. McKinley , N. Kimura, N. Atilla, C. Wu, N. Urban, **A.R. Desai**, 2008: Climate impacts on the circulation and thermal structure of Lake Superior, CyCLeS workshop, Madison, WI, August 2008.

Bennington, V., G.A. McKinley , N. Atilla, N. Kimura, N. Urban, C. Wu, **A.R. Desai**, 2008. Does Terrestrial Carbon Explain Lake Superior Model-Data pCO₂ Discrepancy? Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract OS53C -1324. (poster)

Cook, B.D., **A.R. Desai**, P. Weishampel, J.Y. King, P.V. Bolstad, K.J. Davis, R.K. Kolka, N. Saliendra, R.M. Teclaw, D.D. Baumann, 2008. Methane Emissions and Warming Potentials of Wetlands of the Great Lakes Region, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract B33B -0422. (poster)

Davis, K.J., P.V. Bolstad, R. Anderson, B.D. Cook, F.A. Heinsch, S.W. Running, N.S. Saliendra, K. Cherrey, **A.R. Desai**, R. Kolka, P. Weishampel, 2008: Probabilistic carbon flux upscaling in a complex northern forest ecoregion. NASA Carbon Cycle and Ecosystems Joint Science Workshop 2008, Adelphi, MD, Apr. 28-May 2, 2008.

Desai, A.R., B.N. Sulman, D.S. Mackay, 2008: Impacts of leaf phenology and water table on interannual variability of carbon fluxes in subboreal uplands and wetlands: Implications for regional fluxes in the upper Midwest USA. Ameriflux Meeting 2008, Boulder, CO, Oct.

15,2008.

Desai, A.R., B.B. Stephens, D.S. Schimel, D.J. Moore, S. de Wekker, T. Campos, R.K. Monson, **W.K. Ahue**, **R.J. Behnke**, S.M. Aulenbach, T. Quaife., 2008. Constraining regional carbon fluxes in complex terrain: The Airborne Carbon in the Mountains Experiment, Eos Trans. AGU 89(53), Fall Meet. Suppl., Abstract B51A -0363. (poster)

M. Myklebust, L. Hipps, R. Huc, L. Misson, R. Ryel, G. Wohlfahrte, B. Chojnicki, P. Curtis, N. Delpierre, S. Froking, A. Granier, P. Lafleur, M. Aurela, P. Bolstad, M. Cavaleri, J. Chambers, **A.R. Desai**, E. vanGorsel, A. Iton, H. Loescher, S. Oberhauer, J. Pumpanen, M. Ryan, N. Saigusa, T. Vesala, 2008: Is the underestimate of ecosystem respiration by eddy covariance related to LAI ADVEX Advection Workshop, Gembloux, Belgium, Jun. 30-Jul. 1, 2008. (poster)

Sulman, B.N., **A.R. Desai**, D.S. Mackay, S. Samanta, B.D. Cook, N. Saliendra, 2008: Interactions of carbon and water cycles in north temperate wetlands: Modeling and observing the impact of a declining water table trend on regional biogeochemistry. 18th Conference of Atmospheric Biogeosciences, American Meteorological Society, Orlando, FL, Apr. 29, 2008, session 1.2.

Sulman, B.N., **A.R. Desai**, B.D. Cook, N. Saliendra, D.S. Mackay, 2008: Observed carbon-water interactions in three north-temperate wetlands. Ameriflux Meeting 2008, Boulder, CO, Oct. 15-17, 2008. (poster)

Urban, N.R., G.A. McKinley , C.P. McDonald , N. Atilla, **A.R. Desai**, C. Wu, 2008: Contributions to the CO₂ efflux from the Laurentian Great Lakes. ASLO Ocean Sciences Meeting 2008, Orlando, FL, Mar. 6, 2008, session 108.

Urban, N.R. and **A.R. Desai**, 2008: Are the Great Lakes a Significant Net Source or Sink of CO₂ Proceedings of the 30th Congress of the International Association of Theoretical and Applied Limnology, (Verhandlungen Internationale Vereinigung für theoretische und angewandte Limnologie), Vol. 30. in press.

Xiao, J., K.J. Davis, B.D. Cook, P.V. Bolstad, **A.R. Desai**, N. Saliendra, K. Cherry, R. Kolka, P. Weishampel., 2008. Upscaling of Eddy Flux Measurements in the Upper Great Lakes Region Using MODIS Data and Modeling Approaches, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract B51A -0367.

Project: Collaborative research: The carbon balance of Lake Superior:
Modeling lake processes and understanding impacts on the
regional carbon budget (co-PI)
Source: NSF BIO/DEB Carbon-Water
Total Award: \$894,964 Period: 10/01/2006-07/31/2010

Graduate student fellowships
Will Ahue, DOD START, Fall 2008-Summer 2010

c. Proposals pending (title, funding agency, amount, duration)

Project: Collaborative Research: How do micro-topography and low-
level jets influence nocturnal advection of tracers across
upland-wetland gradients and what are the impacts on flux
towers (PI)
Source: NSF ATM/PDM
Total Award: \$481,031 Period: 1/01/2009-12/31/2011

Project: CAREER: Contrasting environmental controls on regional
CO₂ and CH₄ biogeochemistry-Research and education for
placing global change in a regional, local context (PI)
Source: NSF BIO/DEB
Total Award: \$613,678 Period: 1/01/2009-12/31/2013

Project: A Regional Atmospheric Continuous CO₂ Network in the
Rocky Mountains: Understanding Drivers of Flux Variability
and Optimizing Regional Observations (co-PI)
Source: NOAA Climate Program Ken Mooney
Total Award: \$158,764 Period: 05/01/2009-04/30/2012

Project: Integration of wind energy systems into power engineering
education programs at UW-Madison (co-PI)
Source: DOE-Golden Field Office
Total Award: \$399,931 Period: 01/01/2010-12/31/2011

Project: Historic and future climate-induced trends in
evapotranspiration as a driver of Great Lake water level
fluctuations (co-PI)
Source: UW Sea Grant
Total Award: \$240,000 Period: 01/01/2010-12/31/2011

Graduate student fellowships pending:

Ruben Behnke, NSF GSRP, Fall 2009-Fall 2012
Ben Sulman, DOE GCEP, Fall 2009-Fall 2012
Ben Sulman, UMBS BART, Summer 2009-Summer 2011

d. Papers in preparation

in prep

Buffam, I., Turner, M.G., **Desai, A.R.**, Hanson, P.C. , Van de Bogert, M.C. , Rusak, J. , Lottig, N.R., Stanley, E.H., Kratz, T.R., Carpenter, S.R., in prep.: The carbon budget for a north temperate lake district. Global Change Biology.

Desai, A.R. and Austin, J., in prep. An increasing wind speed trend over Lake Superior. Nature.

Desai, A.R., Helliker, B.R., Berry, J.A., Moorcroft, P.R., in prep. Interannual variability in regional carbon fluxes from top-down and bottom-up perspectives. Global Biogeochemical Cycles.

Desai, A.R., Noormets, A., and Schimel, D., in prep. Relationship of growing season timing to CO₂ flux interannual variability. Journal of Geophysical Research - Biogeosciences.

e. Public lectures, invited seminars, papers presented at professional meetings

2009

Carbon cycling in a warmer, greener world.

Ankur Desai, Climate People and Environment Seminar Series, UW Center for Climatic Research, March 31, 2009 (INVITED).

Phenological responses of NEE in the subboreal, OR, How not to give a talk.

Ankur Desai, UW Atmospheric and Oceanic Sciences, Department Seminar, March 4, 2009. (INVITED)

2008

Carbon, Water, Land Use, Climate: Understanding interannual variability in surface-atmosphere greenhouse gas exchange

Ankur Desai, Wisconsin Ecology Group 2008 Fall Symposium,
Madison, WI, Oct. 17, 2008 (INVITED)

Impacts of leaf phenology and water table on interannual variability of
carbon fluxes in subboreal uplands and wetlands

Ankur Desai, Ameriflux Meeting 2008, Boulder, CO, Oct. 15, 2008
(INVITED)

Interannual variability of CO₂ in the ChEAS mesonet

Ankur Desai, Chequamegon Ecosystem Atmosphere Study (ChEAS)
Meeting XI, UNDERC-East, Land O Lakes, WI, Aug. 12, 2008

Lake Superior region carbon cycle: Viewed from the air

Ankur Desai, Lake Superior Biogeochemistry Workshop, University
of Wisconsin-Madison, Madison, WI, Aug. 5, 2008

Spatial process and land-atmosphere flux: Constraining ecosystem
models with regional flux tower data assimilation

Ankur Desai, Flux Measurements and Advanced Modeling, NSF/CU
Summer Course, CU Mountain Research Station, Nederland, CO,
July 22, 2008 (INVITED)

Wet carbon/dry carbon: Surface-atmosphere carbon exchange in
subboreal uplands, lowlands, and water bodies

Ankur Desai, University of Wisconsin, Nelson Institute for
Environmental Studies, Center for Sustainability and the Global
Environment (SAGE), Noon Seminar Series, Madison, WI, May 7,
2008 (INVITED)

Interactions of carbon and water cycles in north temperate wetlands:
Modeling and observing the impact of a declining water table trend on
regional biogeochemistry

Ben Sulman, 18th Conference of Atmospheric Biogeosciences,
American Meteorological Society, Orlando, FL, Apr. 29, 2008

From eddies to the breath of the planet: Flux towers, data assimilation,
and the global carbon cycle

Ankur Desai, University of Wisconsin, Atmospheric & Oceanic
Sciences Dept., Department Seminar, Madison, WI, Feb. 20, 2008
(INVITED)

Carbon Dioxide, Friend or Foe? The terrestrial carbon cycle and a
climate for life on Earth

Ankur Desai, University of Wisconsin, Atmospheric & Oceanic Sciences Dept., Senior Capstone Seminar (405), Madison, WI, Feb. 6, 2008 (INVITED)

2007 (after 8/27/07)

Carbon Cycling in Lake Superior: Impact on Upper Midwest Regional Carbon Balance

Ankur Desai et al., American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 13, 2007

Ecological Data Assimilation: The Flux Tower Story

Ankur Desai, Ameriflux Meeting, Boulder, CO, Oct. 18, 2007 (INVITED)

f. Other scholarly activities

2009

UW, Carbon in the Northwoods research planning workshop, participant, Northern Lakes LTER, Boulder Junction, CO, Feb. 2009

2008

UW, Wisconsin Idea Seminar, selected participant, Madison, WI, May 2008

2007 (after Aug. 27, 2007)

NSF, Workshop on Data Assimilation in Ecological Models, invited participant, Norman, OK, Oct. 2007

III. Service - three years (example: committee, associate chairmanship, UW Senate, special task, etc.)

a. Department

2009

Secretary to the Atmospheric & Oceanic Sciences Faculty, Spring 2009
AOS Qualifying Exam Committee, Spring 2009
AOS Colloquium Committee (chair), 2009
AOS Graduate Student Association Graduate-Faculty Liaison, Spring 2009
AOS Graduate Admissions Committee, Spring 2009

2008

Secretary to the Atmospheric & Oceanic Sciences Faculty, 2008

2007 (after 8/27/07)

Secretary to the Atmospheric & Oceanic Sciences Faculty, Fall 2007

b. University

2009

Nelson Institute for Environmental Studies, Environmental Monitoring Program Committee, Spring 2009
Faculty affiliate, UW Khorana Program for Scientific Exchange, 2009
Faculty affiliate, Wisconsin Ecology Group, 2009
Faculty affiliate, Center for Climatic Research, 2009

2008

Delta Program Graduate Teaching Certificate Reviewer, Scott Spak, Aug 2008
Faculty affiliate, UW Khorana Program for Scientific Exchange, 2008
Faculty affiliate, Wisconsin Ecology Group, 2008
Faculty affiliate, Center for Climatic Research, 2008

2007 (after 8/27/07)

N/A

c. Local and State

2009

Super Science Saturday, Franklin-Randall School, Madison Metropolitan School District, "A Breath of Hot Air: Understanding CO₂ and the Greenhouse Effect with Professor CO₂", K-5 educational demonstration, March 2009

2008

University Avenue Day Care, "Hurray for Spring!", public science demonstration for preschool, March 2008

2007 (after 8/27/07)

N/A

d. National and International

2009

NSF, Summer Graduate Course on Flux Measurements and Advanced Modeling, invited workshop organizer, Niwot Ridge LTER, Nederland, CO, Jul. 2009

Breakout session organizer and chair, Carbon exchange in mountainous regions, 2nd North American Carbon Program All-Investigators Meeting, February 18-19, 2009

2008

Session organizer, Ecosystem isotopes and trace gas fluxes, Ameriflux Science Meeting, October 15, 2008

Site selection consultant, National Ecological Observatory Network (NEON, Inc.), Great Lakes Core Site, July 15, 2008

Committee member, American Meteorology Society (AMS), Atmospheric Biogeosciences Science and Technical Advisory Committee (STAC), 2008-

2007 (after 8/27/07)

NSF, Summer Graduate Course on Flux Measurements and Advanced Modeling, invited workshop organizer, Niwot Ridge LTER, Nederland, CO, Jul. 2008

Co-convener, American Geophysical Union Fall Meeting, Session B31: Observing, Modeling and Predicting Regional Carbon Exchange, 2007

e. Number of reviews for NSF, NCAR, scientific journals, etc

Total: 22

2009

Agricultural and Forest Meteorology, Boundary Layer Meteorology (2), JGR-G (Biogeosciences) (2), NSF/ATM, NSF/DEB, DOE SBIR

2008

Agricultural and Forest Meteorology, DOE SBIR, DOE NICCR (Coastal), Ecoscience, Global Change Biology (2), JGR-D (Atmospheres) (2), JGR-G (Biogeosciences), NASA Terrestrial Ecology, UW College of Agriculture McIntire-Stennis Grant

2007 (after 8/27/07)

Agricultural and Forest Meteorology, DOE NICCR Coastal, DOE NICCR Midwest

f. Other service (consulting, editorship, etc.) and remarks

Media interviews, newsletters, workshop reports

2009

N/A

2008

Tran, T., 2008. UN: Clouds of pollution threaten glaciers, health. The Associated Press, Thu. Nov 13, 2008.

Blankinship, J.C., Riveros-Iregui, D.A., Desai, A.R., 2008. NCAR Advanced Study Program Students "Method-Hop" Their Way to Regional Biogeochemistry. Bulletin of the American Meteorological Society, v. 89(10), p. 1571-1573.

Desai, A.R., 2008. What can dense Ameriflux site clusters say about spatial and temporal heterogeneity in carbon and water cycling? Fluxletter: The Newsletter of FLUXNET, Vol. 1, No. 2, May 2008.

Black, H., 2008. Some scientists fear CO₂-spewing bacteria will speed global warming. Milwaukee Journal Sentinel, March 17, 2008

2007 (after 8/27/07)

N/A