

Chuixiang Yi

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Education

- Ph.D. Atmospheric Science, Nanjing University, China, 1991
- M.S. Theoretical physics, Northeast Normal University, China, 1984
- B.S. Physics, Liaoning Normal University, China, 1982

Professional Experience

Queens College, CUNY, School of Earth and Environmental Sciences, 2014-present

Associate Professor of Meteorology. 2007-2013 Assistant Professor of Meteorology. Research focuses on: (1) Intensive measuring and 3D modeling of wind, carbon/water, and energy over complex terrain; (2) Instability of terrain-induced canopy flows; (3) Climate controls of land-atmosphere exchanges; (4) Upscaling U.S. CO₂ flux from tower to satellite scales; and (5) Improving land surface parameterization of mesoscale models. **Teaching:** GEOL-011 Survey of Atmospheric Science; GEOL 520: Meteorology; GEOL 799.3 Extreme Weather and Megacities; ENSCI 112: Our Changing Planet; ENSCI 111: Introduction to Environmental Sciences; GEOL 799.3 Atmosphere-Biosphere Modeling; ENSCI 100: Our Planet in the 21st Century: Challenges to Humanity: Introduction to the Environment.

University of Colorado, Department of Ecology and Evolutionary Biology, 2003-2007

*Research Associate (DOE supported) ---*Studied the advection issues (called difficult conditions) in flux measurements over complex terrain in the Rocky Mountains of Colorado by combining 3-D flux measurements (4 towers), SF₆ diffusion experiments, and leaf area density observations with dynamic and numerical models. I developed the canopy momentum transfer theory (Yi, 2008) and derived analytical solutions of canopy flow and Reynolds stress that are defined by topography and canopy structure (Yi et al, 2005). We developed a super stable layer theory that can be used to explain conditions of canopy flow separation at night. These analytical models and theory have been tested not only by observations, but also by numerical simulations of thermally-driven fluid flows. The robust agreement between the theoretical predictions and observations indicate that the nature of momentum transfer within canopies can be well understood by my momentum transfer theory (Yi, 2008; and Yi et al., 2005)

The Pennsylvania State University, Department of Meteorology, 2000-2003

*Research Associate (DOE and NOAA supported) ---*Examined the CO₂ rectifier effect by combining simple dynamic equations with observations from flux towers, boundary layer profiling radars, aircraft, and balloons (Yi et al., 2004a); Conducted synthetic analysis of Ameriflux data with statistical models to study what climate and biological factors are important for controlling terrestrial carbon exchange and atmospheric CO₂ variability (Yi et al., 2006a); Developed a partitioning daytime NEE model by a nonparametric statistical method (Yi et al., 2004b).

University of Minnesota, Department of Soil, Water, and Climate, 1998-2000

Postdoctoral Research Associate (DOE and NOAA supported) ---Developed a prediction model for the planetary boundary layer depth by combining boundary layer budget equations with observations from flux towers, boundary layer profiling radars, aircraft, balloons (Yi et al., 2001b); Examined morning advection fluxes using vertical flux divergences from the 447 m-tall tower measurements (Yi et al., 2000).

University of California at Berkeley, Department of ESPM, 1996-1998

Postdoctoral Research Associate---Developed a carbon-climate feedback model (Yi et al., 2001a)

Beijing Normal University, China, Department of Geography, 1992-1996

Associate Professor, (Research supported by China NSF & National Basic and Applied Research Grant) --- Examined the impacts of climate change on China land surface processes by data analysis and modeling (e. g. Yi et al., 1996b; 1996c); Taught courses ***Climate Change and Climate Models*** (graduate) and ***Nonlinear Sciences and Their Applications to Geosciences*** (senior undergraduate and graduate).

Beijing Normal University, Department of Geography, China, 1991-1992

Assistant Professor (Research supported by China NSF & National Basic and Applied Research Grant) ---Developed natural disaster models (Yi, 1995c; Yi and Shi, 1995d); Studied nonlinear dynamics of climate system (Yi and Wu, 1994a, 1992); Taught courses ***Climate Change and Climate Models*** (graduate).

Liaoning Normal University, China, Department of Physics, 1985-1988

Lecturer--- Taught general physics for undergraduate and nonequilibrium statistical physics for graduate students.

Honors and Awards

09/2014 – 08/2015, **Rosby Guest Associate Professor**, Department of Meteorology, Stockholm University, Sweden.

The Norbert Gerbier-MUMM International Award 2012 was conferred upon Yi, C., D. Ricciuto, R. Li, J. Wolbeck, X. Xu, M. Nilsson, L. Aires, J. D. Albertson, C. Ammann, M. A. Arain, A. C. de Araujo, M. Aubinet, M. Aurela, Z. Barcza, A. Barr, P. Berbigier, J. Beringer, C. Bernhofer, A. T. Black, P. V. Bolstad, F. C. Bosveld, M. S. J. Broadmeadow, N. Buchmann, S. P. Burns, P. Cellier, J.M. Chen, J.Q. Chen, P. Ciais, R. Clement, B. D. Cook, P. S. Curtis, D. B. Dail, E. Dellwik, N. Delpierre, A. R. Desai, S. Dore, D. Dragoni, B. G. Drake, E. Dufrêne, A. Dunn, J. Elbers, W. Eugster, M. Falk, C. Feigenwinter, L. B. Flanagan, T. Foken, J. Frank, J. Fuhrer, D. Gianelle, A. Goldstein, M. Goulden, A. Granier, T. Grünwald, L. Gu, H. Guo, A. Hammerle, S. Han, N. P. Hanan, L. Haszpra, B. Heinesch, C. Helfter, D. Hendriks, L. B. Hutley, A. Ibrom, C. Jacobs, T. Johansson, M. Jongen, G. Katul, G. Kiely, K. Klumpp, A. Knohl, T. Kolb, W. L. Kutsch, P. Lafleur, T. Laurila, R. Leuning, A. Lindroth, H. Liu, B. Loubet, G. Manca, M. Marek, H. A. Margolis, T. A. Martin, W. J. Massman, R. Matamala, G. Matteucci, H. McCaughey, L. Merbold, T. Meyers, M. Migliavacca, F. Miglietta, L. Misson, M. Mölder, J. Moncrieff, R. K. Monson, L. Montagnani, M. Montes-Helu, E. Moors, Ch. Moureaux, M. M. Mukelabai, J. W. Munger, M. Myklebust, Z. Nagy, A. Noormets, W. Oechel, R. Oren, S. G. Pallardy, K. T. Paw U, J. S. Pereira, K. Pilegaard, K. Pintér, C. Pio, G. Pita, T. L. Powell, S. Rambal, J. T. Randerson, C. von Randow, C. Rebmann, J. Rinne, F. Rossi, N. Roulet, R. J. Ryel, J. Sagerfors, N. Saigusa, M. J. Sanz, G.S. Mugnozza, H. P. Schmid, G. Seufert, M. Siqueira, J. F. Soussana, G. Starr, M. A. Sutton, J. Tenhunen, Z. Tuba, J. P. Tuovinen, R. Valentini, C. S. Vogel, J. Wang, S. Wang, W. Wang, L. R. Welp, X. Wen, S. Wharton, M. Wilkinson, C. A. Williams, G. Wohlfahrt, S. Yamamoto, G. Yu, R. Zampedri, B. Zhao, X. Zhao, for [their paper: climate control of terrestrial carbon](#)

[exchange across biomes and continents, *Environmental Research Letters*, 5, doi: 10.1088/1748-9326/5/3/034007, 2010.](https://doi.org/10.1088/1748-9326/5/3/034007)

CUNY Chancellor's "**Salute to Scholar**" Award, 2010

Recent Research Projects

NSF, DEB, Ecosystem Science, Climate control of terrestrial ecosystem CO₂ sequestration, Since 2010.

NSF, AGS, Physical & Dynamic Meteorology, Instability analysis of terrain-induced canopy flows, Since 2010.

PSC-CUNY-ENHC, Quantifying how climate extremes alter U.S. terrestrial carbon-storage capacity, 2013.

QC-ENHC, Queens College Research at Black Rock Forest, 2013.

PSC-CUNY, A numerical study of advection fluxes over a forested hill under stable conditions, 2009.

PSC-CUNY, Instability analysis on canopy turbulent flow over a complex terrain, 2008.

PSC-CUNY-ENHC, A pilot study for NSF proposal with a title: 3D-modeling over complex terrain, 2012.

QC GRTI, Instrumentation Request for Eddy Flux Research, 2011.

QC GRTI, School of Earth and Environmental Sciences Soil, Air and Water Sampling, 2010.

Publications

BOOKS:

Yi, C., *Nonlinear Sciences and Their Applications to the Geosciences*, Meteorological Press, Beijing, 1995. (In Chinese)

Yi, C., *Climate Change and Climate Models*, Ocean Publishing House, Beijing, 1993. (In Chinese)

REFEREED PAPERS:

Senior Author (or corresponding author)

(a) Ph.D. student; (b) Post-doc; and (c) Undergraduate student

Yi, C., S. Wei^a & G. Hendrey, Warming climate extends dryness-controlled areas of terrestrial carbon sequestration. *Sci. Rep.* 4, 5472; DOI:10.1038/srep05472 (2014).

Wei^a, S., C. Yi, G. Hendrey, T. Eaton, G. Rustic^a, S. Wang, H. Liu, N. Y. Krakauer, W. Wang, A. R. Desai, L. Montagnani, K. T. Paw U, M. Falk, A. Black, C. Bernhofer, T. Grünwald, T. Laurila, A. Cescatti, E. Moors, R. Bracho, and R. Valentini, Data-based perfect-deficit approach to understanding climate extremes and forest carbon assimilation capacity, *Environ. Res. Lett.* 9 065002 (9pp), (2014).

Yi, C., D. Ricciuto, G. Hendrey, Biome Q10 and dryness, *American Journal of Climate Change*, 2, 292-295. doi: 10.4236/ajcc.2013.24029, 2013.

Xu^a, X., C. Yi, The influence of geometry on recirculation and co₂ transport over forested hills, *Meteorology and Atmospheric Physics*, 119, 187-196, 2013.

Yi, C., G. Rustic^a, X. Xu^a, J. Wang^b, A. Dookie^c, S. Wei^a, G. Hendrey, D. M. Ricciuto, T. Meyers, Z. Nagy, K. Pinter, Climate extremes and grassland potential productivity, *Environmental Research Letters*, 7, 035703 (6pp) doi:10.1088/1748-9326/7/3/035703, 2012.

Wang, W. and C. Yi, A new nonlinear analytical model for canopy flow over a forested hill, *Theoretical and Applied Climatology*, DOI 10.1007/s00704-012-0599-9, 2012.

Chen^b, H., and C. Yi, Optimal control of katabatic flows within canopies, *Quarterly Journal of the Royal Meteorological Society*, DOI:10.1002/qj.1904, 2012.

Yi, C., D. Ricciuto, R. Li, J. Wolbeck^a, X. Xu^a, M. Nilsson, L. Aires, J. D. Albertson, C. Ammann, M. A. Arain, A. C. de Araujo, M. Aubinet, M. Aurela, Z. Barcza, A. Barr, P. Berbigier, J. Beringer, C. Bernhofer, A. T. Black, P. V. Bolstad, F. C. Bosveld, M. S. J. Broadmeadow, N. Buchmann, S. P. Burns, P. Cellier, J.M. Chen, J.Q. Chen, P. Ciais, R. Clement, B. D. Cook, P. S. Curtis, D. B. Dail, E. Dellwik, N. Delpierre, A. R. Desai, S. Dore, D. Dragoni, B. G. Drake, E. Dufrêne, A. Dunn, J. Elbers, W. Eugster, M. Falk, C. Feigenwinter, L. B. Flanagan, T. Foken, J. Frank, J. Fuhrer, D. Gianelle, A. Goldstein, M. Goulden, A. Granier, T. Grünwald, L. Gu, H. Guo, A. Hammerle, S. Han, N. P. Hanan, L. Haszpra, B. Heinesch, C. Helfter, D. Hendriks, L. B. Hutley, A. Ibrom, C. Jacobs, T. Johansson, M. Jongen, G. Katul, G. Kiely, K. Klumpp, A. Knohl, T. Kolb, W. L. Kutsch, P. Lafleur, T. Laurila, R. Leuning, A. Lindroth, H. Liu, B. Loubet, G. Manca, M. Marek, H. A. Margolis, T. A. Martin, W. J. Massman, R. Matamala, G. Matteucci, H. McCaughey, L. Merbold, T. Meyers, M. Migliavacca, F. Miglietta, L. Misson, M. Mölder, J. Moncrieff, R. K. Monson, L. Montagnani, M. Montes-Helu, E. Moors, Ch. Moureaux, M. M. Mukelabai, J. W. Munger, M. Myklebust, Z. Nagy, A. Noormets, W. Oechel, R. Oren, S. G. Pallardy, K. T. Paw U, J. S. Pereira, K. Pilegaard, K. Pintér, C. Pio, G. Pita, T. L. Powell, S. Rambal, J. T. Randerson, C. von Randow, C. Rebmann, J. Rinne, F. Rossi, N. Roulet, R. J. Ryel, J. Sagerfors, N. Saigusa, M. J. Sanz, G.S. Mugnozza, H. P. Schmid, G. Seufert, M. Siqueira, J. F. Soussana, G. Starr, M. A. Sutton, J. Tenhunen, Z. Tuba, J. P. Tuovinen, R. Valentini, C. S. Vogel, J. Wang, S. Wang, W. Wang, L. R. Welp, X. Wen, S. Wharton, M. Wilkinson, C. A. Williams, G. Wohlfahrt, S. Yamamoto, G. Yu, R. Zampedri, B. Zhao, X. Zhao, Climate control of terrestrial carbon exchange across biomes and continents, *Environmental Research Letters*, 5, doi: 10.1088/1748-9326/5/3/034007, 2010.

- Yi, C., Instability analysis of terrain-induced canopy flows, *Journal of the Atmospheric Sciences*, 66, 2134-2142, doi:10.1175/2009JAS3005.1, 2009.
- Yi, C., Momentum transfer within canopies, *Journal of Applied Meteorology and Climatology*, 47, 262-275, doi:10.1175/2007JAMC1667.1, 2008.
- Yi, C., D. E. Anderson, A. A. Turnipseed, S. P. Burns, and J. Sparks, D. Stannard, and K. R. Monson, The contribution of advective fluxes to net ecosystem CO₂ exchange in a high-elevation, subalpine forest ecosystem, *Ecological Applications*, 18 (6), 1379-1390. 2008.
- Yi, C., R. K. Monson, Z. Zhai, D. E. Anderson, B. Lamb, G. Allwine, A. A. Turnipseed, and S. P. Burns, Modeling and measuring the nocturnal drainage flow in a high-elevation, subalpine forest with complex terrain, *Journal of Geographical Research*, 110, D22303, doi:10.1029/2005JD006282, 2005
- Yi, C., R. Li, P. S. Bakwin, A. Desai, D. M. Ricciuto, S. P. Burns, A. A. Turnipseed, S. C. Wofsy, J. W. Munger, K. Wilson, and R. K. Monson, A nonparametric method for separating photosynthesis and respiration components in CO₂ flux measurements, *Geophysical Research Letters*, 31, L17107, doi:10.1029/2004GL020490, 2004b.
- Yi, C., K. J. Davis, P. S. Bakwin, A.S. Denning, N. Zhang, A. Desai, J. C. Lin, and C. Gerbig, The observed covariance between ecosystem carbon exchange and atmospheric boundary layer dynamics at a site in northern Wisconsin, *Journal of Geophysical Research*, 109, D08302, doi:10.1029/2003JD004164, 2004a.
- Yi, C., K. J. Davis, B. W. Berger, P. S. Bakwin, Long-term observations of the dynamics of the continental planetary boundary layer, *Journal of the Atmospheric Science*, 58, 1288-1299, 2001b.
- Yi, C., P. Gong, M. Xu , and Y. Qi , The effects of buffer and temperature feedback on the oceanic uptake of CO₂, *Geophysical Research Letter*, 28, 751-754, 2001a.
- Yi, C., K. J. Davis, P. S. Bakwin, B. W. Berger, and L. Marr, The influence of advection on measurements of the net ecosystem-atmosphere exchange of CO₂ from a very tall tower, *Journal of Geophysical Research*, 105, 9991-9999, 2000.

Co-author

- Wang, S., J. Liu, C. Zhang, C. Yi, W. Wu, Effects of Afforestation on Soil Carbon Turnover in China's Subtropical Region, *J. Geogr. Sci.*, 21(1), 118-134. 2011.
- Burns, S.P., J. Sun, D.H. Lenschow, S.P. Oncley, B.B. Stephens, C. Yi, D.E. Anderson, J. Hu, and R.K. Monson, 2010: Atmospheric stability effects on wind fields and scalar mixing within and just above a subalpine forest in sloping terrain. *Boundary-Layer Meteorology*, doi:10.1007/s10546-010-9560-6, 2010 .
- Zhou, T. , C. Yi, P. S. Bakwin, and L. Zhu, Links between global CO₂ variability and climate anomalies of biomes, *Sciences in China*, Ser D-Earth Sci., 51, 740-747, 2008.

- Denning, A.S., N. Zhang, **C. Yi**, M. Branson, K. Davis, J. Kleist, and P. Bakwin, Evaluation of modeled atmospheric boundary layer depth at the WLEF Tower, *Agricultural and Forest Meteorology*, 148, 206-215. 2008.
- Wang, W., K.J. Davis, B. D. Cook, **C. Yi**, M. P. Butler, D. M. Ricciuto, and P. S. Bakwin, Estimating daytime CO₂ fluxes over a mixed forest from tall tower mixing ratio measurements, *Journal of Geophysical Research*, 112, D10308, doi:10.1029/2006JD007770, 2007.
- Wang, W., K.J. Davis, **C. Yi**, E. G. Patton, M. P. Butler, D. M. Ricciuto, and P. S. Bakwin, A note on the top-down and bottom-up gradient functions over a forested site, *Boundary-Layer Meteorology*, 305-314 2007.
- Wang, W., K.J. Davis, B.D. Cook, P. Bakwin, **C. Yi**, D. Ricciuto, and M. Butler, Surface layer CO₂ budget and advective contributions to measurements of net ecosystem-atmosphere exchange of CO₂, *Agriculture and Forest Meteorology*, 2005, 135, 202-214.
- Bakwin, P.S., K.J. Davis, **C. Yi**, S.C. Wofsy, J.W. Munger, L. Haszpra and Z. Barcza, Regional carbon dioxide fluxes from mixing ratio data, *Tellus* 56B, 301-311, 2004.
- Cook, B.D., K.J. Davis, W. Wang, **C. Yi**, B.W. Berger, P.V. Bolstad, P. Bakwin, J.G. Isebrands, and R.M. Teclaw, Annual pattern of carbon exchange and evapotranspiration of an upland hardwood forest in northern Wisconsin, *Agriculture and Forest Meteorology*, 126, 271-295, 2004.
- Hurwitz, M.D., D.M. Ricciuto, P.S. Bakwin, K.J. Davis, W. Wang, **C. Yi**, and M.P. Butler, Transport of Carbon Dioxide in the Presence of Storm Systems over a Northern Wisconsin Forest, *Journal of the Atmospheric Sciences*, 61, 607-618, 2004.
- Werner, C., K.J. Davis, P. Bakwin, **C. Yi**, D. Hurst, and L. Lock, Interannual variability of methane exchange over a temperate-boreal lowland and wetland forest, *Global Change Biology*, 9, 1251-1261, 2003.
- Davis, K.J., P.S. Bakwin, **C. Yi**, B.W. Berger, C. Zhao, R.M. Teclaw and J.G. Isebrands, Long-term carbon dioxide fluxes from a very tall tower in a northern forest: Annual cycle of CO₂ exchange, *Global Change Biology*, 9, 1278-1293, 2003.
- Berger, B. W., K. J. Davis, **C. Yi**, P. S. Bakwin, and C. Zhao, Long-term carbon dioxide fluxes from a very tall tower in a northern forest: Part I. Flux measurement methodology, *Journal of Atmospheric and Oceanic Technology*, 18, 529-542, 2001.
- Zhou T., **C. Yi**, P. Shi, Relationship between NDVI and climatic factors under different drought conditions, *Acta Geographica Sinica*, 58, 512-518, 2003. (In Chinese)
- Zhou T., **C. Yi**, P. Shi, and J. Luo, Research on the feedback mechanism between terrestrial carbon cycle and temperature, *Geographical Research*, 21, 53-59, 2002. (In Chinese)
- Yi, C.**, K. Liu, and T. Zhou, Research on a formula of rainfall interception by vegetation, *Journal of Soil Erosion and Soil and Water Conservation*, 2, 77-79, 1996a. (In Chinese)

- Yi, C., K. Liu, and T. Zhou, A model for calculating soil moisture fields in the monsoon region of the eastern part of China, *Journal of Soil Erosion and Soil and Water Conservation*, 2, 80-85, 1996b. (In Chinese)
- Yi, C., K. Lui, and T. Li, Research on relations of soil zonal distributions with climate in the monsoon region of the eastern part of China, *Acta Pedologica Sinica*, 32, 385-390, 1996c. (In Chinese)
- Yi, C. and T. Zhou, On zonal relation of effective atmospheric emissivity with water vapor and carbon dioxide, *Journal of Beijing Normal University*, Natural Science Ed., 32, 278-280, 1996d. (In Chinese)
- Yi, C., On land surface dynamics, *Chinese Journal of Applied Ecology*, 6, 212-219, 1995a. (In Chinese)
- Yi, C., Approach on applying the nonlinear theories to formulate a synthetical theory of environment and ecology, *Advance in Earth Science*, 10, 164-168, 1995b. (In Chinese)
- Yi, C., A catastrophe model of debris flow, *Journal of Nature Disasters*, 4, 53-57, 1995c. (In Chinese)
- Yi, C., P. Shi, On the natural disaster model, *Journal of Nature Disasters*, 4, 6-8, 1995d. (In Chinese)
- Gong, D., C. Yi, Fractal analysis of climatic proxy, *Journal of Beijing Normal University*, Natural Science Ed., 31, 400-403, 1995e. (In Chinese)
- Yi, C., and P. Shi, Entropy Production and Natural Hazards, *Journal of Beijing Normal University*, Natural Science Ed., 30, 276-280, 1994b. (In Chinese)
- Yi, C. and R. Wu, A Self-Organization Climate Model, *Chinese Journal of Atmospheric Science*, 18, 129-140, 1994a.

CONFERENCE PROCEEDINGS, PRESENTATIONS (* indicates invited talk)

- Yi, C., S. Wei^a, K. Jensen^a, G. Hendrey, Is the dry zone of the land shifting poleward? **(talk)**, TERENO International Conference 2014: from observation to prediction in terrestrial systems, Bonn University, Bonn, Germany, September 29-October 2, 2014.
- Yi, C., S. Wei^a, K. Jensen^a, G. Hendrey, Warm part of the land is drying and expending and CO₂ absorption is reducing **(poster)** in workshop: Advancing the science of gas exchange between fresh waters and the atmosphere, Hyytiälä Forestry Field Station, Helsinki, Finland, September 16-19, 2014.
- Yi, C., E. Kutter^a, X. Xu^a, G. Hendrey, T. T. Eaton, H. Liu, and W. Wang, Modeling and measuring turbulent recirculation bubbles over complex terrain: mixing mechanisms for forest-atmosphere exchanges **(talk)**, *21st Symposium on Boundary Layers and Turbulence*, Leeds, United Kingdom, June 9 - 13, 2014.

- Kutter^a, E. C. Yi, G. R. Hendrey, H. Liu, T. T. Eaton, and W. Ni-Meister, Impacts of Recirculation on Biosphere-Atmosphere Interactions over Complex Terrain (**talk**), Presentation at *31th Conference on Agricultural and Forest Meteorology*, Portland, OR, USA, May 12 – 15, 2014.
- Yi, C., S. Wei^a, K. Jensen^a, G. Hendrey, Global warming, land drying and terrestrial carbon sinks weakening (**talk**), Presentation at *31th Conference on Agricultural and Forest Meteorology*, Portland, OR, USA, May 12 – 15, 2014.
- Xu^a, X., C. Yi, Three-dimensional modeling of canopy flow in complex terrain (**poster**), *Fall meeting of the American Geophysical Union*, December 9-13, San Francisco, California, 2013.
- Kutter^a, E., C. Yi, G. Hendrey, H. Liu, T. Eaton, W. Ni-Meister, Recirculation bubbles measured in Black Rock Forest in New York (**poster**), *Fall meeting of the American Geophysical Union*, December 9-13, San Francisco, California, 2013.
- Yi, C., K. Jensen^a, Climate drivers of leaf area index (LAI) deficits across the coterminous US (**Talk**), *Fall meeting of the American Geophysical Union*, December 9-13, San Francisco, California, 2013.
- Yi, C., G. Rustic^a, S. Wei^a, A. Dookie^c, G. Hendrey, D. Ricciuto, Ecological consequences of climate extremes: A perfect-deficit approach, *Fall meeting of the American Geophysical Union*, December 3-7, San Francisco, California, 2012.
- Wei^a, S., C. Yi, G. Hendrey, T. Eaton, H. Liu, G. Rustic^a, N. Krakauer, Climate extremes and forest carbon sequestration capacities (**poster**), *Fall meeting of the American Geophysical Union*, December 9-13, San Francisco, California, 2013.
- Yi, C., X. Xu^a, H. Chen^b, Katabatic flows, advection and CO₂ transport over complex terrain, Presentation at *30th Conference on Agricultural and Forest Meteorology*, Boston, MA, USA, May 29 – June 1, 2012.
- Xu^a, X. C. Yi, Mechanistic analysis of thermo-topographic flows in forested terrain, Presentation at *30th Conference on Agricultural and Forest Meteorology*, Boston, MA, USA, May 29 – June 1, 2012.
- Wei^a, S., C. Yi, Climate control of photosynthetic parameters across biomes, **Fall meeting of the American Geophysical Union**, December 5-9, San Francisco, California, 2011.
- Xu^a, X., C. Yi, Airflow and CO₂ transport over double forested hills, **Fall meeting of the American Geophysical Union**, December 5-9, San Francisco, California, 2011.
- Yi, C., X. Xu^a, New microstructures of stably stratified subcanopy flows over complex terrain, **Fall meeting of the American Geophysical Union**, December 5-9, San Francisco, California, 2011.

- Rustic^a, G., **C. Yi**, X. Xu^a, J. Wang^b, A. Dookie^c, Canopy Photosynthetic Capacity Signature of Extreme Events, **Fall meeting of the American Geophysical Union**, December 5-9, San Francisco, California, 2011.
- Hendrey, G., D. Ricciuto, **C. Yi**, The temperature sensitivity of biome respiration and dryness, **Fall meeting of the American Geophysical Union**, December 5-9, San Francisco, California, 2011.
- Yi, C.**, H. Chen^b, Cooperative control of katabatic flows within canopies with terrain slope, canopy structure, and thermal velocity, In: , European Geosciences Union General Assembly 2011. *European Geosciences Union General Assembly 2011*, Vienna, Austria. April 3-8, 2011.
- Yi, C.**, D. Ricciuto, and 150 others, Climate controls of terrestrial carbon sequestration, **Fall meeting of the American Geophysical Union**, December 13-17, San Francisco, California, 2010.
- Yi, C.**, W. Wang, A nonlinear analytical analysis of terrain-induced canopy flows, Presentation at **19th Symposium on Boundary Layers and Turbulence and 29th Conference on Agricultural and Forest Meteorology**, Keystone, CO, USA, August 1-6, 2010.
- Yi, C.**, D. Ricciuto, R. Li, J. Wolbeck^a, X. Xu^a et al. (158 co-authors), Climate Control of Terrestrial Carbon Sequestration, **AMERIFLUX Annual Team Meeting**, Washington D. C., November 21-23, 2009.
- Wolbeck^a, J., G. Hendrey, **C. Yi**, A New Baby AmeriFlux site (Black Rock Forest) Born to Study Complex Terrain, **AMERIFLUX Annual Team Meeting**, Washington D. C., November 21-23, 2009.
- Xu^a, X., **C. Yi**, Complex canopy flow and advection model development, **AMERIFLUX Annual Team Meeting**, Washington D. C., November 21-23, 2009.
- Luo^a, Z., Y. Li, **C. Yi**, Analytical Solution for Cold-air-drainage flow On Sloping Forest, 2nd International Countermeasures of Urban Heat Island, Berkeley, USA, Sep21-23, 2009.
- Monson, R. K A. A. Turnipseed, J. Sun, D. E. Anderson, **C.Yi**, S. P. Burns, and B. Lamb, Measurement of Landscape-scale Fluxes in the Complex Terrain of a Rocky Mountain Subalpine Forest, Fall meeting of the American Geophysical Union, December 10-14, San Francisco, California, 2007.
- Yi, C.**, Instability analysis on drainage flow over a complex terrain. Fall meeting of the American Geophysical Union, December 10-14, San Francisco, California, 2007.
- Yi, C.**, R. K. Monson, Z. Zhai, D. E. Anderson, B. Lamb, A. A. Turnipseed, and S. P. Burns, Modelling canopy turbulent flow over complex terrain, Presentation at 17th Symposium on Boundary Layers and Turbulence and 27th Conference on Agricultural and Forest Meteorology, San Diego, CA, USA, May 21-25, 2006.

- Yi, C.,** R. K. Monson, Z. Zhai, D. E. Anderson, B. Lamb, A. A. Turnipseed, and S. P. Burns, Advective flows and canopy turbulence caused by topography and canopy structure, ***Integrated Land Ecosystem—Atmosphere Processes Study (iLEAPS) Specialist Workshop on Flux Measurements in Difficult Conditions***, 26-28 January 2006, NCAR Center Green Campus, Boulder, Colorado, USA.
- Yi, C.,** R. K. Monson, D. E. Anderson, A. A. Turnipseed, and S. P. Burns, Comparison between aerodynamic and biological corrections to six-year cumulative NEE at the Niwot Ridge Ameriflux site, ***Integrated Land Ecosystem—Atmosphere Processes Study (iLEAPS) Specialist Workshop on Flux Measurements in Difficult Conditions***, 26-28 January 2006, NCAR Center Green Campus, Boulder, Colorado, USA.
- Anderson, D. E., **C. Yi,** R. K. Monson, A. A. Turnipseed, S. P. Burns, and B. Lamb, Five years of CO₂ nighttime advective flux measurements at the Niwot Ridge, Colorado subalpine forest site, ***Integrated Land Ecosystem—Atmosphere Processes Study (iLEAPS) Specialist Workshop on Flux Measurements in Difficult Conditions***, 26-28 January 2006, NCAR Center Green Campus, Boulder, Colorado, USA.
- Burns, S. P., J. Sun, S. P. Oncley, A. A. Turnipseed, **C. Yi,** D. H. Lenschow, and R. K. Monson, An evaluation of in-canopy flux measurements, ***Integrated Land Ecosystem—Atmosphere Processes Study (iLEAPS) Specialist Workshop on Flux Measurements in Difficult Conditions***, 26-28 January 2006, NCAR Center Green Campus, Boulder, Colorado, USA.
- Yi, C.,** R. K. Monson, Z. Zhai, D. E. Anderson, B. Lamb, A. A. Turnipseed, and S. P. Burns, Modelling terrain-induced canopy flows over complex terrain, ***AMERIFLUX Annual Team Meeting***, Boulder, Colorado, October 18-20, 2005.
- Monson, R., **C. Yi,** D. Anderson, J. Sun, B. Lamb, S. Burns, Observational uncertainties in net ecosystem CO₂ exchange: the effect of complex terrain. ***The Ecological Society of America Annual Meeting***, Montreal, Canada, 2005.
- Yi, C.,** D. E. Anderson, S. P. Burns, A. A. Turnipseed, and R. K. Monson, Examining advection effects on eddy flux measurements at the Niwot Ridge AmeriFlux site in the Colorado Rocky Mountains, Presentation at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December, 2004.
- Yi, C.,** D. E. Anderson, S. P. Burns, A. A. Turnipseed, and R. K. Monson, Advection at the Niwot Ridge AmeriFlux site, AmeriFlux Annual Science Team Meeting, Boulder Marriott, Boulder, CO, October 5-7, 2004.
- Monson, R., **C. Yi,** D. Bowling, Y. Luo, W. Sacks, D. Schimel, Extracting photosynthetic insight from net ecosystem CO₂ exchange. 13th International Congress on Photosynthesis, Montréal, Quebec, Canada, August 29 to September 3, 2004.
- Yi, C.,** L. Mahrt, K.J. Davis, P. S. Bakwin, Estimates of horizontal advection from WLEF, Chequamegon Ecosystem Atmosphere Study (ChEAS) 2003 Workshop, Kemp Natural Resources Station, Woodruff, WI June 29-July 2, 2003.

- Yi, C.**, T. Zhou, K. J. Davis, P. S. Bakwin, L. Zhu, P. Stackhous, Interannual variability of fluxes, atmospheric CO₂, climate, Chequamegon Ecosystem Atmosphere Study (ChEAS) 2003 Workshop, Kemp Natural Resources Station, Woodruff, WI June 29-July 2, 2003.
- Yi, C.**, K.J. Davis, P. S. Bakwin, Are controlling rules of climate factors on terrestrial CO₂ fluxes different across time scales? Chequamegon Ecosystem Atmosphere Study (ChEAS) 2002 Workshop, Kemp Natural Resources Station, Woodruff, WI August 16-21, 2002.
- Davis, K.J., P.S. Bakwin, B.D. Cook, M.D. Hurwitz, D.M. Ricciuto, W. Wang and **C. Yi**, The blobs and other advective horrors of northern Wisconsin. Proceedings of the 15th American Meteorological Society Symposium on Boundary Layers and Turbulence, pages 508-511, Wageningen, The Netherlands, July, 2002.
- *Davis, K.J., **C. Yi**, M.P. Butler, M.D. Hurwitz, D.M. Ricciuto and P.S. Bakwin, Merging CO₂ flux and mixing ratio observations at synoptic, seasonal and interannual scales. Invited presentation and poster at the Fluxnet synthesis workshop, Orvieto, Italy, 20-22 June, 2002.
- Davis, K.J., P.S. Bakwin, M.P. Butler, M.D. Hurwitz, D.M. Ricciuto, and **C. Yi**, Joint analyses of carbon dioxide mixing ratio and flux measurements. Spring meeting of the American Geophysical Union, May 28-31, Washington, D.C., 2002.
- Bakwin, P.S., K.J. Davis, M.P. Butler, M. Hurwitz, D. Ricciuto, W. Wang and **C. Yi**, Seasonal and synoptic patterns of CO₂ fluxes and mixing ratios from FLUXNET sites. Presentation at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December, 2001.
- Cook, B.D., K.J. Davis, W. Wang, P.S. Bakwin, **C. Yi**, P.V. Bolstad, J.G. Isebrands and R.M. Teclaw, Contributions from a deciduous forest and shrub wetland to regional carbon fluxes in northern Wisconsin. Presentation at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December, 2001.
- *Davis, K.J., P.S. Bakwin, **C. Yi**, B.D. Cook, W. Wang, A.S. Denning, R. Teclaw and J. Isebrands, Multiple flux footprints, flux divergences and boundary layer mixing ratios: Studies of ecosystem-atmosphere CO₂ exchange using the WLEF tall tower. Invited talk, Spring meeting of the American Geophysical Union, Boston, MA, May 2001.
- Yi, C.**, K.J. Davis, P.S. Bakwin, A.S. Denning, N. Zhang, D. Ricciuto, M. Hurwitz, Boundary layer CO₂ budgets and the rectifier effect. Poster presentation, Spring meeting of the American Geophysical Union, Boston, MA, May 2001.
- Yi, C.**, K.J. Davis, B.W. Berger, and P.S. Bakwin, On development of convective boundary layers, Proceedings of the 14th Symposium on Boundary Layer and Turbulence, Aspen, Colorado, 7-11 August, Amer. Met. Soc., 223-226, 2000.
- Davis, K. J. **C. Yi**, P. S. Bakwin, W.M. Angevine, C. Zhao, J.G. Isebrands and R. Teclaw, Profiles, fluxes and entrainment of carbon dioxide from a very tall tower, Proceedings in Fourth International Symposium on Tropospheric Profiling: Needs and Technologies, Snowmass, Colorado, 1998.

- Davis, K.J., **C. Yi**, B.W. Berger, R.J. Kubesh and P.S. Bakwin, Scalar budgets in the continental boundary layer, Proceedings of the 14th Symposium on Boundary Layer and Turbulence, 7-11 August, American Meteorological Society, Aspen, Colorado, 100-103, 2000.
- Davis K. J., B.W. Berger, B.D. Cook, **C. Yi**, P.S. Bakwin, C. Zhao, J.G. Isebrands, and R. Teclaw, Forging a link between AmeriFlux and GLOBALVIEW-CO2, NOAA, Climate Monitoring & Diagnostics Laboratory Annual Meeting, May 3-4, Boulder, Colorado, 2000.
- Zhang N., S.A. Denning, **C. Yi**, K.J. Davis, P.S. Bakwin, and M. Branson, Covariance of the ecosystem carbon dioxide flux and the PBL depth at the tall tower in northern Wisconsin: Observations and simulations, NOAA, Climate Monitoring & Diagnostics Laboratory Annual Meeting, May 3-4, Boulder, Colorado, 2000.
- Bakwin, P.S., C. Zhao, Davis K. J., B.W. Berger, B.D. Cook, **C. Yi**, J.G. Isebrands, and R. Teclaw, Exchange of carbon dioxide between the atmosphere and a forest in northern Wisconsin, USA, NOAA, Climate Monitoring & Diagnostics Laboratory Annual Meeting, May 3-4, Boulder, Colorado, 2000.
- Wang, W., B.D. Cook, B.W. Berger, K.J. Davis, R.J. Kubesh, **C. Yi**, P.S. Bakwin, J.G. Isebrands, and R.M. Teclaw, Turbulent transport above a forest under light wind conditions, Amer. Met. Soc., Proceedings of the 24th Conference on Agricultural and Forest Meteorology, Davis, California, 14-18 August, 2000.
- Berger, B.W., K.J. Davis, P.S. Bakwin, and **C. Yi**, "Diurnal carbon dioxide fluxes and boundary layer structure from a very tall tower." Paper presented at Amer. Geophys. Union Spring Meeting, Boston, Mass., 1999.
- Davis, K.J., P.S. Bakwin, B.W. Berger, B.D. Cook, and **C. Yi**, Flux budgets and CO2 profiles in the atmospheric boundary layer. Fall meeting of the American Geophysical Union, San Francisco, CA, December, 1999.
- Denning, A.S., N. Zhang, K.J. Davis, **C. Yi**, P.S. Bakwin and B.W. Berger, Simulations and observations of diurnal coupling between ecophysiology and the atmospheric boundary layer as a control on CO2. Fall meeting of the American Geophysical Union, San Francisco, CA, December, 1999.
- Davis K. J., B.D. Cook, W.B. Sea, **C. Yi**, PV Bolstad, J. Martin, P.S. Bakwin, C. Zhao, J.G. Isebrands, R. Teclaw and V. Gutschick, The Chequamegon ecosystem-atmosphere study: overview and preliminary results, Proceedings in 23rd Conference on Agricultural and Forest Meteorology, New Mexico, 1998.
- Davis, K.J., **C. Yi**, P.S. Bakwin, W.M. Angevine, C. Zhao, J.G. Isebrands and R. Teclaw, Profiles, fluxes and entrainment of carbon dioxide observed from a very tall tower. Proceedings of the 4th International Symposium on Tropospheric Profiling: Needs and Technologies, September, Snowmass, Colorado, 73-75, 1998.
- Yi, C.**, and Rongsheng Wu, Mechanism on the Quaternary Glacier, in The Research on Historic Evolution of the Existent Environment in China, Ocean Publishing House, 156-169, 1992.

(In Chinese)

Invited Speaker

- ***Yi, C.**, 21st century climate on NEE (**invited talk**), A Popular Science Talk at the Board Meeting of the International Meteorology Institute in Stockholm, Sweden, November 28, 2014.
- ***Yi, C.**, Advection problems in eddy flux measurements (**invited lecture**), the Departments of Earth Science, Swedish University of Agricultural Sciences, Umeå, Sweden, November 13, 2014.
- ***Yi, C.**, Links between land carbon sinks/sources, El Nino/La Nina, Hadley Cell expansion, and global warming (**invited lecture**), Swedish University of Agricultural Sciences, Umeå, Sweden, November 12, 2014.
- ***Yi, C.**, Advection problems in eddy flux measurements (**invited lecture**), the Departments of Earth Science, Uppsala University, Sweden, November 3, 2014.
- ***Yi, C.**, Links between land carbon sinks/sources, El Nino/La Nina, Hadley Cell expansion, and global warming (**invited lecture**), *Lectures in Biogeochemistry and Atmospheric Science*, Sponsored by the Departments of Applied Environmental Science and Geological Science and the Bolin Center for Climate Research, Ahlmannsalen, Geohuset, Stockholm University, Sweden, October 15, 2014.
- ***Yi, C.**, Fundamental Issues in Modeling of Atmosphere-Biosphere Interactions (**Invited talk**), Department of Meteorology, Stockholm University, Sweden, September 9, 2014.
- ***Yi, C.**, A big picture behind FLUXNET data (**Invited talk**), Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California, August 11, 2014.
- ***Yi, C.**, Extreme weather altering ecosystem performance and their carbon-storage capacity, [*The 3rd International Congress of Environment-2013, September 26-28*](#), Xian, China, 2013.
- ***Yi, C.**, K. Jensen (a), S. Wei (a), G. Hendrey, Global warming, drought events, and GPP performance (**invited talk**), *Fall meeting of the American Geophysical Union*, December 9-13, San Francisco, California, 2013.
- * **Yi, C.** Global warming likely intensifies climate extremes and leads to grassland degradation: The Institute of Geophysical Sciences and Natural Resources Research, Chinese Academy of Sciences, April 10, 2012 (<http://www.cern.ac.cn/manage/ewebeditor/uploadfile/20124511311575.pdf>); Beijing Normal University, April 11, 2012 (<http://www.bnu.edu.cn/xzhd/44108.htm>).
- ***Yi, C.** Is possible to know turbulent transport processes in vegetation layer from the sky? Invited speaker of NOAA-CREST Center at the City College of New York, February 2, 2012. **U.S.A.**

- ***Yi, C.**, Key knowledge gaps and progress in atmosphere-biosphere interactions, an invited speaker for a Joint Colloquium of Departments of Atmospheric Sciences and Renewable Resources and Program in Ecology at University of Wyoming, Laramie, March 10, 2011. **U.S.A.**
- ***Yi, C.**, Advection measurements and the superstable layer, invited speaker for Advection workshop and ADVEX final conference, Gembloux, 30 June & 1 July, 2008. <http://www.fsagx.ac.be/ph/ADVEX/ADVEX%20conference.htm>. **Belgium.**
- ***Yi, C.**, Land-atmosphere interface: importance to global change, Department of Geography, Kings College at the University of London, May 4, 2007. **U.K.**
- ***Yi, C.**, Canopy flow theory, Department of Physics and Astronomy at the University of Leicester, December 10, 2006. **U.K.**
- ***Yi, C.**, Measuring and modeling biosphere-atmosphere exchanges in complex terrain, in Department of Earth and Environmental Sciences, Waterloo University, May 18, 2005. **Canada.**
- ***Yi, C.**, Summer Graduate Course on Land-Atmosphere Interaction and Climate Change. Invited Speaker, School of Applied Meteorology, NUIST, June 15-20, 2009. **China.**
- ***Yi, C.**, Analytical Approach to Canopy Flows over Complex Terrain, Atmospheric Science Research Center, University at Albany, SUNY, April 21, 2008. **U.S.A.**
- ***Yi, C.**, Measuring and modeling NEE over complex terrain, International Symposium on CO₂ Flux Monitoring, Sitou, Taiwan, December 15-19, 2008. **China.**
- ***Yi, C.**, Fundamental problems and recent advances in transport processes within canopies, China Ecological Forum, July 30, 2007. Beijing, **China.**
- ***Yi, C.** Land-Atmosphere Interface: Importance to Global Change, State Key Laboratory of Numerical Modeling for Atmospheric Sciences and Geophysical Fluid Dynamics, (<http://www.lasg.ac.cn/Sylm/2007/7/crf6gzeitu.htm>), July 27, 2007, Beijing, **China.**
- ***Yi, C.**, Two curves in controlling biosphere-atmosphere exchanges, FL-2, room 1001 at NCAR, 10:30 am-11:30, Wed. March 23, 2005. **U.S.A.**

Teaching and Advising

Courses

GEOL 383 Atmosphere-Biosphere Interactions

Undergraduate Course with permission, 2014 spring

GEOL 799.3 Atmosphere-Biosphere Interactions

Graduate Course (Graduate Center at CUNY), 2014 spring

GEOL 216 Dynamics of the Oceans and Atmospheres,

Undergraduate Course (Queens College at CUNY), Spring 2013

GEOL 011 Survey of Atmospheric Science

Undergraduate Course (Queens College at CUNY), every semester

GEOL 383 Meteorology

Undergraduate Course (Queens College at CUNY), 2007 fall.

GEOL 520 Meteorology

Undergraduate Course (Queens College at CUNY), 2008 spring, 2010spring

GEOL 799.3 Extreme Weather and Megacities

Graduate Course (Queens College at CUNY), 2008 spring

GEOL 799.3 Atmosphere-Biosphere Modeling

Graduate Course (Graduate Center at CUNY), 2011 spring

ENSCI 112 Our Changing Planet

Undergraduate Course (Queens College at CUNY), 2008 fall.

ENSCI 111 Introduction to Environmental Sciences

Undergraduate Course (team teaching at Queens College at CUNY), 2008fall, 2009spring, 2009fall

Climate Change and Climate Models

Graduate Course (BNU in China), Fall 1992-1995

Nonlinear Sciences and their Applications in Geosciences

Senior Undergraduate and Graduate Course (BNU in China), Spring 1993-1996

Nonequilibrium statistical physics

Graduate Course (LNU in China), Fall 1987

Physics

Undergraduate Course (LNU in China), 1985-1988

Graduate Students

Eric Kutter, CUNY EES Ph.D., Thesis Advisor 9/12-

Gordon Green, CUNY EES Ph.D., Thesis Committee 1/11-

Suhua Wei, CUNY EES Ph.D., Thesis Advisor 8/10-

Christine Ramadhin, CUNY EES Ph.D., Thesis Advisor 9/11-

Caroline Farkas, Master, Thesis Advisor 9/09-

Guangwei Mu, Master, Thesis Advisor 9/14-

Undergraduate Mentoring

2009-2010: Kailin Kuo in the Honors in Math and Natural Sciences Program

2010-2013: Anand Dookie, SEES

2011: Takiya Lewis, Queens College

2012: Dwayne Powell, Queens College

2012-2013: Kevin Clinton, Queens College

2012: Xiaomong Kong, Queens College

2013: Max Truckhin, Queens College

2013: Lili Ye, Queens College

High School Student Mentoring

2010-: Max Wang

2011-2012: Chun Wu

2013: Hugh Han

Past Graduate Students, Post-docs, and visiting students

Ph.D. Advisees:

Dr. Xiyan Xu, **Thesis:** Numerical Study of Canopy Flows in Complex Terrain.
Currently a Postdoctoral Fellow in Lawrence Berkeley National Laboratory

M.S. Advisees:

Dr. Tao Zhou (Prof. at Beijing Normal Univ);
Dr. Shaoqiang Wang (Prof. at IGSNRR);
Dr. Dongmei Guo (Scientist, MEP);
Dr. Qiaozhen Mu (Research Scientist at Steve Running group).

B.S. Advisee:

Dr. Kaiyu Liu (BP).

Post-Docs Advisees:

Dr. Hongbin Chen, currently Associate Professor at Huaqiao University in China
Dr. Jingxin Wang, Currently Professor at Liaoning Normal University in China

Lab Technician:

Qianyu Zhang

Professional Service

I. Professional Society Committee:

Committee member, American Meteorology Society (AMS), Agricultural and Forest Meteorology Science and Technical Advisory Committee (STAC), 2011-2017

II. International Conference Conveners and Session Chairs:

Convener, American Geophysical Union Fall Meeting, Session **B20**: Determining the Controls of Terrestrial Net Ecosystem Exchange (NEE) and Related Processes at Regional to Global Scales, May – December, 2010.

Convener, American Geophysical Union Fall Meeting, Session **B30**: Environmental Controls of Ecosystem-Atmosphere Exchanges (NEE), May – December, 2011.

Convener, American Geophysical Union Fall Meeting, Session **B014**: Climatic Controls on Net Ecosystem Exchange (NEE), May – December, 2011.

Session Chair, American Geophysical Union Fall Meeting, Session **B42B**: Determining the Controls of Terrestrial Net Ecosystem Exchange (NEE) and Related Processes at Regional to Global Scales, December 13 – 17, 2010.

Session Chair, American Geophysical Union Fall Meeting, Session **B41K**: Determining the Controls of Terrestrial Net Ecosystem Exchange (NEE) and Related Processes at Regional to Global Scales, December 13 – 17, 2010.

Session Chair, American Geophysical Union Fall Meeting, Session **B31B**: Determining the Controls of Terrestrial Net Ecosystem Exchange (NEE) and Related Processes at Regional to Global Scales, December 13 – 17, 2010.

Session Chair, American Geophysical Union Fall Meeting, Session **B13J**: Environmental Controls of Ecosystem Atmosphere Exchanges (NEE) I, December 5 – 9, 2011.

Session Chair, American Geophysical Union Fall Meeting, Session **B14C**: Environmental Controls of Ecosystem Atmosphere Exchanges (NEE) II, December 5 – 9, 2011.

Session Chair, American Geophysical Union Fall Meeting, Session **B23A**: Environmental Controls of Ecosystem Atmosphere Exchanges (NEE) II, December 5 – 9, 2011.

Session Chair, American Geophysical Union Fall Meeting, Session **B54A**: Climatic Controls on Net Ecosystem Exchange (NEE) I, December 3 – 7, 2012.

Session Chair, American Geophysical Union Fall Meeting, Session **B51C**: Climatic Controls on Net Ecosystem Exchange (NEE) II, December 3 – 7, 2012.

Session Chair, American Meteorology Society, Session: Advances in Surface Layer Theory from Observations and Model, 30th Conference on Agricultural and Forest Meteorology, 27 May–1 June 2012, Boston, MA

Session Chair, in International Symposium on CO₂ Flux Monitoring Technology, Sitou, Taiwan, December 15-19, 2008.

III. Guest Editors of Special Issues and Editorial Board of Journals

Guest editor, Focus Issue “Extreme Events and the Carbon Cycle”, *Environmental Research Letters*. 2012-2013.

Editorial Board, *Environmental Research Letters*, 2010 - present.

IV. External Dissertation Examiner

Computational Engineering and Science Research Centre and Dept. of Mathematics and Computing, University of Southern Queensland (USQ), Toowoomba, Australia

V. National Science Foundation activities

2013-2014 Geosciences panelist, Graduate Research Fellowship Program

VI. Peer Reviewing

- i. >100 manuscript peer reviews (~10-25 a year) for journals
 - *Tellus*
 - *Biogeosciences*
 - *Climatic Change*
 - *Ecological Modeling*
 - *Journal of Hydrology*
 - *Global Change Biology*
 - *Geographical Research*
 - *Journal of Plant Ecology*
 - *Atmospheric Environment*
 - *Water Resources Research*
 - *Geophysical Research Letters*
 - *Boundary-Layer meteorology*
 - *Environmental Fluid Mechanics*

- *Environmental Research Letters*
- *Journal of Hydraulic Engineering*
- *Advances in Atmospheric Sciences*
- *Rangeland Ecology & Management*
- *Atmospheric Chemistry and Physics*
- *Agricultural and Forest Meteorology*
- *Theoretical and Applied Climatology*
- *Journal of Engineering Mathematics*
- *African Journal of Agricultural Research*
- *Journal of Geophysical Research-Atmosphere*
- *Journal of Geophysical Research-Biogeosciences*
- *Journal of Applied Meteorology and Climatology*
- *Journal of Atmospheric and Oceanic Technology*

- ii. Proposal reviews for National Science Foundation (NSF) – Atmosphere, NSF – Ecosystem Sciences, NSF – Geography and Spatial Science, NSF – Atmospheric and Geospace Sciences, and National Oceanic and Atmospheric Administration (NOAA) – Climate Program Office (CPO), Department of Energy (DOE) -ARM
- iii. Book proposal reviews for Cambridge University Press.