

Curriculum Vitae

7 January 2015

Atul K. Jain
Professor

Professional Address

University of Illinois
Department of Atmospheric Sciences
105 South Gregory Street
Urbana, IL 61801

e-mail: jain1@illinois.edu
Telephone: (217) 333-2128
FAX: (217) 244-1752

Educational Background and Professional Experience

Education Background

B.Sc. (Physics, Chemistry and Mathematics) Meerut University, India, 1980

M.Sc. (Mathematics) Meerut University, India, 1983

Ph.D. (Atmospheric Sciences) Indian Institute of Technology, New Delhi, India, 1988

Professional Experience

January 1988–December, 1990

Research Associate, Center for Applied Climatology and Environmental Studies, Department of Geography, University of Münster, D-4400 Münster, Germany.

January 1991–December 1992

Senior Research Associate, Center for Applied Climatology and Environmental Studies, Department of Geography, University of Münster, D-4400 Münster, Germany.

January 1993–November 1994

Post Doctoral Research Staff Member, Global Climate Research Division, Lawrence Livermore National Laboratory, Livermore, CA 94550, USA.

December 1994 - May 2000

Assistant Research Professor/Research Scientist, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, IL, USA.

June 2000 – July 2002

Associate Research Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, IL, USA.

January 2001 - May 2001

Associate Research Professor, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, USA.

January 2002 – May 2002

Visiting Lecturer, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, USA.

August 2002 – August 2006

Assistant Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, IL, USA.

August 2006 – August 2010

Associate Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, IL, USA.

August 2010 – Cont.

Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, IL, USA.

January 2004-present

Faculty Affiliate, Program in Ecology and Evolutionary Biology, University of Illinois at Urbana-Champaign, IL, USA.

Honors, Recognitions, and Outstanding Achievements

Invited Expert^s, Dahlen Workshop on Limiting The Greenhouse Effect: Options for Controlling Atmospheric CO₂ Accumulation, Berlin, Dec. 9-14, 1990.

Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “Climate Change 1994: Radiative Forcing of Climate Change”, 1995.

Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “*Climate Change 1995: The Science of Climate*”, 1996.

Invited Lead Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “Implications of Proposed CO₂ Emissions Limitations”, 1997.

Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “*Implications of Proposed CO₂ Emissions Limitations*”, 1997.

Invited Lead Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “*An Introduction to Simple Climate Models used in the IPCC Second Assessment Report*”, 1997.

Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “Aviation and The Global Atmosphere”, 1999.

Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report “*Climate Change 2001: The Scientific Basis*”, 2001.

Invited Expert^s, Second United Nations Framework Convention on Climate Change (UNFCCC) Expert Meeting on “*The Scientific and Methodological Assessment of Contributions to Climate Change*”, Bracknell, UK, Sept. 25-27, 2002.

Recipient of the *National Science Foundation Career Award*, March 2003.

Invited Expert^s, Department of Energy (DOE) workshop on *Integrated Assessment: Characterizing Key Policy Issues*, June 28-29, 1994.

Invited Expert^s, Third United Nations Framework Convention on Climate Change (UNFCCC) Expert Meeting on “*The Scientific and Methodological Assessment of Contributions to Climate Change*”, Berlin, Germany, Sept. 9-8, 2003.

Invited to brief Swiss “Environmental Expert” group (including parliamentarians, NGOs, trade groups) on climate sensitivity and uncertainty, *The US Department of State*, Chicago, IL, October 30, 2003.

Invited Expert^s, Fourth Expert Meeting on the scientific and methodological aspects of the proposal by Brazil / MATCH, Cologne, Germany, 6-7 May, 2004.

Invited Participant, 2004 *Beckman Frontier of Sciences Symposium*, US National Academy of Sciences, Irvine, CA.

Nominated *Dean’s Teaching Fellow for AY 2004/2005*

Appointed *Center for Advance Studies Fellow for AY 2005/2006*

Incomplete List of Teachers Ranked as Excellent, Fall 2005, for ENVS 301

Invited Expert^s, Sixth Expert Meeting on the scientific and methodological aspects of the proposal by Brazil / MATCH, Louvain-La-Neuve, Belgium, March 13-14, 2006.

Incomplete List of Teachers Ranked as Excellent, Fall 2006, for ENVS 301.

List of Teachers Ranked as Excellent, Fall 2007, for ENVS 301.

2007 Nobel Peace Prize, shared based on work with Intergovernmental Panel on Climate Change

Invited Panelist, for a panel discussion on global warming at the 21st Annual Environmental Conference and Expo, Iowa-Illinois Safety Council, Stony Creek Inn, Moline, IL, September 27, 2007

Invited to participate as a keynote speaker at the *First Global Summit on Sustainable Development and Biodiversity 2008*, to be held in India, Dec 10-12, 2008.

Appointed *National Center for Super Computing Application (NCSA) Fellow for AY 2008/2009*

Appointed a member of the *NASA-LCLUC (Land Cover and Land Use Change) Science Team (2008-cont.)*.

Appointed a member of the *NASA-MAIRS (Monsoon Asia Integrated Regional Study) Science Team(2008-cont.)*.

Elected a representative from electoral group VII for service on *the UIUC LAS Council on General Education (AY 2008-cont.)*.

Received *Green Ambassador of India Award* for contribution towards promoting Global Agenda for ecological health of the Planet through Research and Scientific Contribution, First Global Summit on Sustainable Development and Biodiversity 2008, Raipur, Chhattisgarh, India, February 7-9, 2009.

Delivered a keynote talk at the *American Physical Society/Ohio-Region Section Meeting (OSAPS)*, Youngstown State University, Youngstown, OH, March 28, 2008.

Delivered a keynote talk at the *First Global Summit on Sustainable Development and Biodiversity (GLOSS 2008)*, Raipur, Chhattisgarh, India, February 7-9, 2009.

UIUC reorganization on the *Nobel Laureate page of the University of Illinois website (<http://illinois.edu/about/overview/facts/nobel.html>)* of 2007 Nobel Peace Prize that I shared based on work with Intergovernmental Panel on Climate Change.

Invited Discussion Panelist, *First Annual Integrated Assessment Modeling Group meeting*, NCAR, Boulder, CO., August 4-5, 2010.

Invited to deliver a series of lectures at *the United Nations (UN) Center for Space Science and Technology for Asia Pacific*, Dehradun, India, December 5-8, 2010.

Nominated to serve on the *Editorial Board of the Journal Earth Science India (eISSN: 0974 – 8350)*, January-cont., 2011.

Invited Discussion Panelist, *Advancing Land-use Modeling and Analysis for Carbon Cycling Studies Workshop*, Princeton University, Princeton, NJ, May 17-19, 2011.

Invited Discussion Panelist, *Societal Dimensions of Earth System Modeling Workshop*, Organized by NCAR to identify the types of activities that a Societal Dimensions working group could undertake and their potential benefits to the community, NCAR, Boulder, CO, May 25-26, 2011.

Appointed Member, *National Academy of Sciences Committee on Needs and Research Requirements for Land-Change Modeling*, October 2011 – December 2012.

Invited to give a series of lectures at *the United Nations (UN) Center for Space Science and Technology for Asia Pacific*, Dehradun, India, November 18-26, 2011.

Invited Author[§], *UN Intergovernmental Panel on Climate Change (IPCC) WG I Fifth Assessment Report*, “*Climate Change 2013: The Physical Science Basis*” (September 2013).

Invited Author[§], *UN Intergovernmental Panel on Climate Change (IPCC) WG III Fifth Assessment Report*, “*Mitigation of Climate Change*” (to be published in 2014).

Invited Author[§], *National Academic of Sciences report entitled “Advancing Land Change Modeling: Opportunity and Research Requirements,”* National Academy Press, 500 Fifth Street, N.W., Lockbox 285, Washington, DC 20055 (to be published in September 2014).

[§]*These meetings, for which I was invited expert, are convened by government or international agencies to develop policy based upon the best scientific information.*

Conference/Workshop Chair

Session Chair, Fall 1995 American Geophysical Union (AGU) Meeting titled *Global Carbon Cycle's Role in Global Change II*, Dec. 11-15, 1995.

Session Chair, *Fall 1995 American Geophysical Union (AGU) Meeting*, session titled “*Global Carbon Cycle's Role in Global Change*”, San Francisco, CA, Dec. 11-15, 1995.

Session Chair, *Spring 1996 American Geophysical Union (AGU) Meeting*, session titled “*Global Carbon Cycle's Role in Global Change*”, Baltimore, MD, May 20-24, 1996.

Session Chair, *Intl. Conference on Climate Change and Environmental Policy*, session titled “*The Role of Agriculture in Mitigating Climate Change*”, University of Illinois @ Urbana-Champaign, Nov 11-12, 2002.

Session Chair, *Intl. Conference on Climate Change and Environmental Policy*, session titled “*The Role of Agriculture in Mitigating Climate Change*”, University of Illinois @ Urbana-Champaign, Nov 11-12, 2002.

Session Chair, *Fall 2007 American Geophysical Union (AGU) Meeting*, session titled “*The Role of Climate, Carbon and Limiting Nutrient Cycles and Human Activities in Terrestrial Ecosystems*”, San Francisco, CA, Dec. 10-14, 2007.

Session Chair, *Fall 2008 American Geophysical Union (AGU) Meeting*, session title “*Impact on Terrestrial Ecosystems of CO₂, Climate, Limiting Nutrients, Human Activities, and Biofuel Production*” at 2008 FALL AGU Meeting”, San Francisco, CA, Dec. 15-19, 2008.

Session Chair, *Fall 2009 American Geophysical Union (AGU) Meeting*, session title “*The Role of Climate, Carbon and Limiting Nutrient Cycles and Human Activities in the Terrestrial Ecosystems*”, San Francisco, CA, Dec. 14-18, 2009.

Session Chair, *Fall 2010 American Geophysical Union (AGU) Meeting*, session title “*Improving predictions of the global carbon cycle and climate: New mechanisms, feedback loops and approaches for model evaluation*”, San Francisco, CA, Dec. 13-17, 2010.

Session Chair, *Fall 2010 American Geophysical Union (AGU) Meeting*, session title “*Attribution of the Change in CO₂, CH₄, and N₂O Atmospheric Abundances to Historical, National, and Natural Emissions*”, San Francisco, CA, Dec. 13-17, 2010.

Session Chair, *Fall 2011 American Geophysical Union (AGU) Meeting*, session title “Improving predictions of the global carbon cycle and climate: New mechanisms, feedback loops and approaches for model evaluation”, San Francisco, CA, Dec. 5-9, 2011.

Session Chair, *National Research Council Workshop - Needs and Research for Land Change Modeling*, session title “Land-Climate Interactions”, Chapel Hill, NC, February 15-17, 2012.

Session Chair, *Fall 2012 American Geophysical Union (AGU) Meeting*, session title “Improving predictions of the global carbon cycle and climate: New mechanisms, feedback loops and approaches for model evaluation”, San Francisco, CA, Dec. 3-7, 2012.

Session Chair, Workshop on *Land Cover and Land Use Change Dynamics and their Impacts in South Asia*, session title “LCLUC Forestry and Carbon Cycle”, Karunya University, Coimbatore, India, January 7-14, 2013.

Session Chair, *9th International Carbon Dioxide Conference*, session title “Past and Present Changes and Variability”, Beijing, China, June 3-7, 2013.

Session Chair, *Fall 2013 American Geophysical Union (AGU) Meeting*, session title “Improving predictions of the global carbon cycle and climate: New mechanisms, feedback loops and approaches for model evaluation”, San Francisco, CA, Dec. 9-13, 2013.

Review Panelist

NASA Review Panelist for NRA-03-OES-03, “*Interdisciplinary Science in the NASA Earth Science Enterprise*”, June 2003.

Invited Review Panelist, *NSF peer review panel for Integrative Research and Education Traineeship Program (IGERT)*, Arlington VA, June 1-2, 2009.

Invited Review Panelist, *U.S. Department of State/National Academies Review Panel for the Pakistan-U.S. Science and Technology Cooperative Program*, National Academic of Sciences, Washington, DC, June 16-17, 2010.

Invited Review Panelist, U.S. Department of Energy (DOE) review panel to evaluate *Lawrence Berkley National Laboratory’s (LBNL) Climate Science Plan*, LBNL, Berkley, CA, September 8-9, 2010.

Invited Review Panelist, *U.S. Department of Energy (DOE) Review Panel on Next Generation Ecosystem Experiment (NGEE)*, Arlington, Virginia, Aug 3-4, 2011.

Invited Review Panelist, *U.S. NASA Review Panel on Interdisciplinary Research in Earth Science (IDS)*, Bethesda, MD, March 1-2, 2012.

Invited Review Panelist, *U.S. NASA Review Panel on Modeling, Analysis and Prediction (MAP) program*, Teleconference, January 28, 2013.

Invited Review Panelist, *U.S. Department of Energy (DOE) Review Panel on Earth System Modeling (ESM) and Terrestrial Ecosystem Sciences (TES)*, Washington, DC, March 4, 2013.

Invited Review Panelist, *U.S. Department of State/National Academies Review Panel for the Pakistan-U.S. Science and Technology Cooperative Program*, National Academic of Sciences, Washington, DC, May 16-17, 2013.

Membership in Professional Societies

Member, American Geophysical Union

Member, American Meteorological Society

Editorships of Journals or Other Learned Publications

Associate Editor, International Journal of Integrated Energy Systems, July 2008 – Cont.

Editorial Board Member, Journal Earth Science India (eISSN: 0974 – 8350), January-cont., 2011.

Financial Grants and Contracts Received

Awarded grants and contracts from the following sources since appointed to the University of Illinois:

Electric Power Research Institute (EPRI)
 Energy Bioscience Institute (EBI), University of Illinois (UIUC)
 Environmental Council Earth and Society Initiative, University of Illinois (UIUC)
 National Center for Super Computing Applications (NCSA), University of Illinois (UIUC)
 The U.S. Department Of Energy (DOE)
 The U.S. Environmental Protection Agency (EPA)
 The U. S National Aeronautics and Space Administration (NASA)
 The U. S National Science Foundation (NSF)
 The U.S. Department Of Agriculture (USDA)
 The U.S. Geological Survey (USGS)

Current Funded Project

The U.S. National Aeronautics and Space Administration (NASA) funded project entitled “Land Cover and Land Use Changes and Their Effects on Carbon Dynamics in South and South East Asia: A Synthesis Study”, April 1, 2014 – March 2017.

U.S. National Science Foundation (NSF), Collaborative Research EaSM2: Linking Human and Earth System Models to Assess Regional Impacts and Adaption in Urban Systems and their Hinterlands, Total award money \$4,168,877 (\$683,704 to PI Jain) for the period April 2013-May 2018 (*Lead PI: Brian O’Neill of NCAR*).

The U.S. Department Of Energy (DOE) funded project entitled “Investigating the Role of Biogeochemical Processes in the Northern High Latitudes on Global Climate Feedbacks Using an Efficient Scalable Earth System Model”, September 2011 – August 2015.

The U.S. Department Of Agriculture (USDA) funded project entitled “Useful to Usable (U2U): Transforming Climate Variability and Change Information for Cereal Crop Producers, Total award money \$ 5 million for five years”, April 2011 – March 2016 (*Lead PI: L. Prokopy of Purdue University*).

Research Publications

Articles in Journals

Lal, M. and **A.K. Jain**, 1985: The effect of atmospheric aerosols on earth's climate as calculated with 1-D radiative-convective model, *Proc. Indian National Science. Academy*, A15, 735-740.

Jain, A.K., M. Lal and M.C. Sinha, 1986: On the meridional variation of climatic changes due to doubling of CO₂ content in the atmosphere, *Theoretical and Applied Climatology*, 37, 15-20.

Lal, M., **A.K. Jain** and M.C. Sinha, 1987: Possible climate implications of depletion of Antarctic ozone, *Tellus*, 39B, 326-328.

Lal, M. and **A.K. Jain**, 1988: Climatic effect of observed changes in atmospheric trace gases at Antarctica, *Atmospheric Environment*, 22, 2047-48.

Bach, W. and **A.K. Jain**, 1990: CFC greenhouse potential of scenarios possible under the Montreal Protocol, *Intl. J. Climatology*, 10, pp 439-450.

Bach, W. and **A.K. Jain**, 1991: Towards Climate Conventions Scenario Analysis for a Climatic Protection Policy, *Ambio*, 20, 322-329.

Bach, W. and **A.K. Jain**, 1992: Climate and Ecosystem Protection Requires Burden Sharing: The Specific Task After Rio (I), *Prospective in Energy*, 2, 67-93.

- Bach, W. and **A.K. Jain**, 1993: Climate and Ecosystem Protection Requires Binding Emission Targets: The Specific Task After Rio(II), *Prospective in Energy*, **2/3**, 173-214.
- Jain, A.K.** and W. Bach, 1994: The effectiveness of measures to reduce the man-made greenhouse effect: the application of a climate-policy-model, *Theoretical and Applied Climatology*, **49**, 103-118.
- Jain, A.K.**, H.S. Khashgi, M.I. Hoffert, and D.J. Wuebbles, 1995: Distribution of Radiocarbon as a Test of Global Carbon Cycle Models, *Global Biogeochemical Cycles*, vol. 9, 153-166.
- Wuebbles, D.J., **A.K. Jain**, K.O. Patten, and K.E. Grant, 1995: Sensitivity of Direct Global Warming Potentials to Uncertainties, *Climatic Change*, **29**, 265-297.
- Hammitt, J. K., **A.K. Jain**, J.L. Adams, and D.J. Wuebbles, 1996: A welfare-based "Economic-Damage Index" for comparing greenhouse-gas emissions, *Nature*, **381**, 301-303.
- Hammitt, J. K., **A.K. Jain**, D.J. Wuebbles, and J.L. Adams, J. L. 1996: Costing the earth, *Nature*, **383**, 571.
- Jain, A. K.**, H.S. Khashgi, and D.J. Wuebbles, 1996: A globally Aggregated Reconstruction of Cycles of Carbon and its Isotopes, *Tellus*, **48B**, 583-600.
- Khashgi, H.S., **A.K. Jain**, and D.J. Wuebbles, 1996: Accounting for the Missing Sink with the CO₂ Fertilization Effect, *Climatic Change*, **33**, 31-62.
- Jain, A.K.**, H.S. Khashgi, and D.J. Wuebbles, 1997: Is there an imbalance in the global budget of bomb-produced radiocarbon? *J. Geophys. Res.*, **102**, 1,327-1,333.
- Good, D.A., Francisco, J.S., **A.K. Jain**, and D.J. Wuebbles, 1998: Lifetimes and global warming potentials for Dimethyl Ethers and for Fluorinated Ethers: CH₃OCF₃ (E143a), CHF₂OCHF₂ (E134), CHF₂OCF₃ (E125), *J. Geophys. Res.* **103**, 28,181-28,186.
- Hayhoe, K., **A. Jain** and D. Wuebbles, 1998: Trade-Offs in Fossil Fuel Use: The Effects of CO₂, CH₄ and SO₂ Aerosol Emissions on Climate, *World Resources Review*, **10**, 321-333.
- Hoffert M.I., K. Caldeira, **A.K. Jain**, E.F. Haites, L.D.D. Harvey, S. D. Potter, M.E. Schlesinger, S. H. Schneider, R.G. Watts, T. M. L Wigley, and D. J. Wuebbles. 1998: Energy Implications of CO₂ Stabilization, *Nature*, **395**, 881-884.
- Wuebbles, D. J., **A.K. Jain**, K.O. Patten, and P.S. Connell, 1998: Evaluation of ozone depletion potentials for chlorobromomethane (CH₂ClBr) and 1-Bromo-Propane (C₃H₇Br), *Atmospheric Environment*, **32**, 107-113.
- Calm, J.M., D.J. Wuebbles, and **A.K. Jain**, 1999: Impacts on global ozone and climate from use and emissions of 2,2-dichloro-1,1,1-trifluoromethane (HCFC-123), *Climatic Change*, **42**, 439-474.
- Hayhoe, K.A.S., **A.K. Jain**, H.M.Pitcher, C.N. MacCracken, M.J. Gibbs, D.J. Wuebbles, R. Harvey, and D. Kruger, 1999: Cost implications of multi-greenhouse gas reduction targets for the U.S., *Science*, **286**, 905-906.
- Khashgi, H.S., **A.K. Jain**, R. Kotamarthi, D.J. Wuebbles, 1999: Future atmospheric methane concentrations in the context of the stabilization of greenhouse gas concentrations, *J. Geophys. Res.*, **104**, 19,183-19,190.
- Khashgi, H. S., **A.K. Jain**, and D. J. Wuebbles, 1999: The global carbon budget and its uncertainty derived from carbon dioxide and carbon isotopes, *J. Geophys. Res.*, **104**, 31,127-31,144.
- Wuebbles, D.J., **A.Jain**, J. Edmond, D. Harvey, K. Hayhoe, 1999: Global change: state of the science, *Environmental Pollution*, **100**, 57-86.
- Jain, A.K.**, B. P. Briegleb, K. Minschwaner, D. J. Wuebbles, 2000. Radiative forcings and global warming potentials of thirty-nine greenhouse gases, *J. Geophys. Res.*, **105**, 20,773-20,790

- Li, Z., Z. Tao, V. Naik, D. A. Good, J. Hansen, G.R. Jeong, J. S. Francisco, **A.K. Jain**, D. J. Wuebbles, 2000: Global warming potential assessment for potential CFC replacement compounds: I. $\text{CF}_3\text{OCF}=\text{CF}_2$, *J. Geophys. Res.* **105**, 4019-4029.
- Naik, V., **A.K. Jain**, K.O. Patten, and D.J. Wuebbles, 2000: Consistent sets of atmospheric lifetimes and radiative forcings on climate for CFC replacements: HCFCs and HFCs, *J. Geophys. Res.*, **105**, 6,903-6,914.
- Hayhoe, K.A.S., H.S. Kheshgi, **A.K. Jain** and D. Wuebbles, 2001: Natural gas substitution in the utility sector: Climatic effects of CO_2 , CH_4 and SO_2 emissions, *Climatic Change*, **54**, 107-139.
- Jain, A.K.**, Z. Li, V. Naik, D. J. Wuebbles, D. A. Good, J.C. Hanson, J. S. Francisco, 2001: Evaluation of lifetime and radiative forcing on climate for 1,2,2,2-Tetrafluoroethyl Trifluoromethyl Ether ($\text{CF}_3\text{OCH}_2\text{CF}_3$), *J. Geophys. Res.*, **106**, 12,615-12,618.
- Wuebbles, D.J., and **A.K. Jain**, 2001: Concerns about climate change and the role of fossil fuel use, *Fuel Processing Technology*, **71**, 99-119.
- Hoffert, M.I, K. Caldeira, G. Benford, D. R. Criswell, C. Green, H. Herzog, **A. K. Jain**, H. S. Kheshgi, K. S. Lackner, J. S. Lewis, H. D. Lightfoot, W. Manheimer, J.C. Mankins, G. Marland, M. E. Mauel, L. John Perkins, M.E. Schlesinger, T. Volk, T. M.L. Wigley, 2002: Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet, *Science* **298**, 981-987.
- Calderia, K, **A. Jain**, M. Hoffert, 2003: Energy implications of uncertainty in climate sensitivity to increased atmospheric CO_2 concentration, *Science*, **299**, 2052-2054.
- Hoffert, M.I, K. Caldeira, G. Benford, D. R. Criswell, C. Green, H. Herzog, **A. K. Jain**, H. S. Kheshgi, K. S. Lackner, J. S. Lewis, H. D. Lightfoot, W. Manheimer, J.C. Mankins, G. Marland, M. E. Mauel, L. John Perkins, M.E. Schlesinger, T. Volk, T. M.L. Wigley, 2003: Planning for future energy resources, *Science*, **300**, 581-584.
- Kheshgi, H.S., and **A.K. Jain**, 2003, Projecting future climate change: Implications of carbon cycle model intercomparison, *Global Biogeochemical Cycles*, **17**(2), 1047, doi:10.1029/2001GB001842.
- Mueller, K., L. Cao, K. Caldeira, and **A. K. Jain**, 2004: Differing methods of accounting ocean carbon sequestration efficiency, *J. Geophys. Res.-Ocean*, **109**, C12018, doi:10.1029/2003JC002252.
- West, T.O., G. Marland, A.W. King, W.M. Post, **A.K. Jain**, and K. Andrasko, 2004: Carbon management response curves: estimates of temporal soil carbon dynamics, *Environmental Management*, **33**(4), 507-518.
- Cao, L., and **A. K. Jain**, 2005: An earth system model of intermediate complexity: simulation of the role of ocean mixing parameterizations and climate change in estimated uptake for natural and bomb radiocarbon and anthropogenic CO_2 , *J. Geophys. Res.-Ocean*, **110**, C09002, doi:10.1029/2005JC002919.
- Jain, A.K.**, and L. Cao, 2005: Assessing the effectiveness of direct injection for ocean carbon sequestration under the influence of climate change, *Geophys. Res. Lett.*, **32**, GRL09609, doi:10.1029/2005GL022818.
- Jain, A.K.** and X. Yang, 2005: Modeling the Effects of Two Different Land Cover Change Data Sets on the Carbon Stocks of Plants and Soils in Concert With CO_2 and Climate Change, *Global Biogeochemical Cycles*, **19**, GB2015, doi:10.1029/2004GB002349.
- Jain, A.K.**, T. West, X. Yang, W. Post, 2005: Assessing the Impact of Changes in Climate and CO_2 on Potential Carbon Sequestration in Agricultural Soil, *Geophys. Res. Lett.*, **32**, L19711, doi:10.1029/2005GL023922.

- Tao, Z. and **A.K. Jain**, 2005: Modeling of Global Biogenic Emissions for Key Indirect Greenhouse Gases and Their Response to Atmospheric CO₂ increases and Changes in Land Cover and Climate, *J. Geophys. Res.-Atmosphere* , 110, D21309, doi:10.1029/2005JD005874.
- Jain, A.K.**, Z. Tao, X. Yang, C. Gillespie, 2006: Estimates of Global Biomass and Biofuel Burning Emissions for Reactive Greenhouse Gases (CO, NMHCs, and NO_x) and CO₂, *J. Geophys. Res - Atmosphere*, 111, D06304, doi:10.1029/2005JD006237.
- Cao, L., K. Caldeira, and **A.K. Jain**, 2007: Influence of climate change on ocean acidification, *Geophys. Res -Atmosphere* , 34, L05607, doi:10.1029/2006GL028605.
- Caldeira, K., Ken Caldeira, D. Archer, J. Barry, R. Bellerby, P. Brewer, L. Cao, A. Dickson, S. Doney, H. Elderfield, V. Fabry, R. Feely, J. Gattuso, P. Haugan, O. Hoegh-Guldberg, **A. Jain**, J. Kleypas, C. Langdon, J. Orr, A. Ridgwell, C. Sabine, B. Seibel, Y. Shirayama, C. Turley, A. Watson, and R. Zeebe (2007), Comment on “Modern-age buildup of CO₂ and its effects on seawater acidity and salinity” by Hugo A. Loaiciga, *Geophys. Res. Lett.*, 34, L18608, doi:10.1029/2006GL027288.
- Jain, A. K.** (2007), Global Estimation of CO Emissions Using Three Sets of Satellite Data for Burned Area, *Atmospheric Environment*, 41, 6931-6940.
- Cao, L., and **A. Jain**, 2008: Learning about the ocean carbon cycle from observational constraints and model simulations of multiple tracers, *Climatic Change*, 89, 45-66, DOI 10.1007/s10584-008-9421-1.
- Ito, A., J. E. Penner, M. J. Prather, C. P. de Campos, R. A. Houghton, T. Kato, **A. K. Jain**, X. Yang, G. C. Hurtt, S. Frolking, M. G. Fearon, L. P. Chini, A. Wang, and D. T. Price, 2008: Can we reconcile differences in estimates of carbon fluxes from land-use change and forestry for the 1990s? *Atmospheric Chemistry and Physics Discussions*, 8, 3843-3893.
- Jain, A. K.**, X. Yang, H. Ksheshgi, A.D. McGuire, W.P. Post, Kicklighter, 2009: Nitrogen Attenuation of Terrestrial Carbon Cycle Response to Global Environmental Factors, *Global Biogeochemical Cycles*, 23, GB4028, doi:10.1029/2009GB003519.
- Prather, M. J., J. E. Penner, J. S. Fuglestedt, A. Kurosawa, J. A. Lowe, N. Hohne, **A. K. Jain**, N. Andronova, L. Pinguelli, C. P. de Campos, S. C. B. Raper, R. B. Skeie, P. A. Stott, J. van Aardenne, and F. Wagner, 2009, Tracking uncertainties in the causal chain from human activities to climate, *Geophys. Res. Lett.*, 36, L05707, doi:10.1029/2008GL036474.
- Yang, X., V. Wittig, **A. Jain**, W. Post, 2009: Integration of Nitrogen Dynamics into a Global Terrestrial Ecosystem Model, *Global Biogeochemical Cycles*, 23, GB4029, doi:10.1029/2009GB003474.
- Jain, A. K.**, M. Khanna, M. Erickson, H. Huang, 2010: Integration of Biophysical Model with Economic Model to Study the Cost of Producing Bioenergy Crops in the Midwestern United States, *Global Change Biology-Bioenergy*, 2 (5), 217-234.
- Yang, X., T. K. Richardson, and **A. K. Jain** (2010), Contributions of secondary forest and nitrogen dynamics to terrestrial carbon uptake, *Biogeosciences*, 7, 3050–2010.
- Huntzinger, D., W. Post, A. Michalak, Y. Wei, A. Jacobson, T.O. West, I. Baker, J. Chen, K. Davis, D. Hayes, F. Hoffman, **A. Jain**, S. Liu, D. McGuire, R. Neilson, B. Poulter, H. Tian, P. Thornton, E. Tomelleri, N. Viogy, J. Xiao, N. Zeng, M. Zhao, and R. Cook (2012): North American Carbon Project (NACP) Regional Interim Synthesis: Terrestrial Biospheric Model Intercomparison, *Ecological Modeling*, 232, 144– 157.

- Meiyappan, P and **A. K. Jain** (2012): Three distinct land-cover estimates of historical land-cover change and land use conversions over the period of 200 years, *Frontier of Earth Sciences*, 6(2): 122–139, DOI 10.1007/s11707-012-0314-2.
- Schaefer, K. M., C. R. Schwalm, C. A. Williams, M. Arain, A. G. Barr, J. M. Chen, K. J. Davis, D. D. Dimitrov, T. W. Hilton, D. Y. Hollinger, E. Humphreys, B. Poulter, B. Raczka, A. D. Richardson, A. Sahoo, P. E. Thornton, R. Vargas, H. Verbeeck, R. S. Anderson, I. Baker, T. Black, P. V. Bolstad, J. Chen, P. Curtis, A. R. Desai, M. Dietze, D. Dragoni, C. Gough, R. F. Grant, L. Gu, **A. Jain**, C. J. Kucharik, B. E. Law, S. Liu, E. Lokipitiya, H. Margolis, R. Matamala, J. McCaughey, R. K. Monson, J. Munger, W. C. Oechel, C. Peng, D. T. Price, D. M. Ricciuto, W. J. Riley, N. T. Roulet, H. Tian, C. Tonitto, M. S. Torn, E. Weng, and X. Zhou (2012): A model-data comparison of Gross Primary Productivity: Results from the North American Carbon Program site synthesis, *J. Geophys. Res.*, 117, G03010, doi:10.1029/2012JG001960..
- De Goncalves, L. G., J. S. Borak, M. H Costa, S. R. Saleska, I. Baker, N. Restrepo-Coupe, M. N. Muza, B. Poulter, H. Verbeeck, J. B. Fisher, M. A. Arain, P. Arkin, B. P. Cestaro; B. Christoffersen, D. Galbraith, X. Guan; B. J.J.M. van den Hurk, K. Ichii, H. M. Acioli Imbuzeiro, **A. K Jain**, N. Levine, C. Lu, G. Miguez-Macho, D. R. Roberti, A. Sahoo, K. Sakaguchi, K. Schaefer, M. Shi, W. J. Shuttleworth, H. Tian, Z. L. Yang, X. Zeng, 2013: Overview of the Large-Scale Biosphere-Atmosphere Experiment in Amazônia Data Model Intercomparison Project (LBA-DMIP), *Agricultural and Forest Meteorology*, 182– 183, 111– 127.
- El-Masri, Bassil, R. Barman, P. Meiyappan, Y. Song, M. Liang, **A. Jain**, 2013: Carbon dynamics in the Amazonian basin: integration of eddy covariance and ecophysiological data with a land surface model, *Agr. Forest Meteorol.*, doi:10.1016/j.agrformet.2013.03.011, 2013.
- Jain, A.K.**, P. Meiyappan, Y. Song, J. House, 2013: CO₂ emissions from land-use change affected more by nitrogen cycle, than by the choice of land-cover data, *Global Change Biology*, doi: 10.1111/gcb.12207.
- Kauwe, M. G. De, B. E. Medlyn, S. Zaehle, M. Dietze, T. Hickler, **A. Jain**, Y. Luo, W. Parton, C. Prentice, P. Thornton, A. Walker, S. Wang, W.P. Wang, D. Warlind, E. Wang, K. Crous, K. Ellsworth, 2013: Water use and water use efficiency at elevated CO₂: a model-data intercomparison at two contrasting temperate forest FACE sites, *Global Change Biology*, doi: 10.1111/gcb.12164.
- Le Qu´er´e, C., R. J. Andres, T. Boden, T. Conway, R. A. Houghton, J. I. House, G. Marland, G. P. Peters, G. van der Werf, A. Ahlstr¨om, R. M. Andrew, L. Bopp, J. G. Canadell, P. Ciais, S. C. Doney, C. Enright, P. Friedlingstein, C. Huntingford, **A. K. Jain**, C. Jourdain, E. Kato, R. Keeling, S. Levis, P. Levy, M. Lomas, B. Poulter, M. R. Raupach, J. Schwinger, S. Sitch, B. D. Stocker, N. Viovy, S. Zaehle, and N. Zeng, 2013: The global carbon budget 1959–2011, *Earth Syst. Sci. Data*, 5, 165–185.
- Randow, C. von, M. Zeri, N. Restrepo-Coupe; M. N. Muza, L. G. G de Goncalves, M. H. Costa, A. C. Araujo, A. O. Manzi, H. R. da Rocha, S. R. Saleska, M. A. Arain, I. T. Baker, B. P. Cestaro; B.Christoffersen, J. B. Fisher, D. Galbraith, X. Guan, B. van der Hurk, K. Ichii; H. Imbuzeiro, **A Jain**, N. Levine, G. Miguez-Macho, B. Poulter, D. R. Roberti, A. Sahoo, K. Schaefer, M. Shi, H.Tian, H. Verbeeck (2013) Inter-annual variability of carbon and water fluxes in Amazonian forest Cerrado and pasture sites, as simulated by terrestrial biosphere models, *Agricultural and Forest Meteorology*, 182– 183, 145– 155.
- Song, Y., **AK Jain**, G. F. McIsaac, 2013: Implementation of Dynamic Crop Growth Processes into a Land Surface Model: Evaluation of Energy, Water and Carbon Fluxes Under Corn and Soybean Rotation, *Biogeosciences*, 10, 8039–8066, doi:10.5194/bg-10-8039-2013.

- Yang, X., W. Post, P. Thornton, **AK Jain**, 2013: The distribution of soil phosphorus in terrestrial equilibrium, *Biogeosciences*, 10, 2525–2537.
- Barman, R. **AK Jain**, M. Liang, 2014: Climate-driven uncertainties in terrestrial gross primary production: a site-level to global scale analysis, *Global Change Biology*, DOI: 10.1111/gcb.12474.
- Barman, R. A.K. Jain, M. Liang, 2014: Climate-driven uncertainties in terrestrial energy and water fluxes: a site-level to global scale analysis, *Global Change Biology*, DOI: 10.1111/gcb.12473.
- Christoffersen, B.O., Restrepo-Coupe N, Arain MA; Baker IT, Cestaro BP, Ciais P, Fisher JB, Galbraith DR, Guan X, Gulden L, van den Hurk B, Ichii K, Imbuzeiro HM, **Jain AK**, Levine N, Miguez-Macho G, Poulter B, Roberti D, Sakaguchi K; Sahoo A, Schaefer K, Shi M, Verbeeck H, Yang ZL, Araújo AC, Kruijt B, Manzi AO, da Rocha HR, von Randow C, Muza MN, J Borak, MH Costa, GG de Gonçalves, X Zeng, Saleska SR, 2014: Mechanisms of water supply and vegetation demand govern the seasonality and magnitude of evapotranspiration in Amazonia and cerrado *Agricultural and Forest Meteorology*, 182– 183, 145– 155.
- De Kauwe MG, BE Medlyn, S Zaehle, AP Walker, MC Dietze, YP Wang, Y Luo, **AK Jain**, B El-Masri, T Hickler, D Warlind, W Ensheng, WJ Parton, PE Thornton, S Wang, IC Prentice, S Asao, B Smith, HR McCarthy, CM Iversen, PJ Hanson, JM Warren, R Oren and RJ Norby (2014) Where does the carbon go? A model–data intercomparison of vegetation carbon allocation and turnover processes at two temperate forest free-air CO₂ enrichment sites, *New Phytologist*, doi: 10.1111/nph.12847.
- Housh M, X Cai, TL Ng, GF McIsaac, Y Ouyang, M Khanna, M Sivapalan, **AK Jain**, S Eckhoff, S Gasteyer, I Al-Qadi, Y Bai, MA Yaeger, S Ma, Y Song (2014): System of Systems Model for Analysis of Biofuel Development, *Journal of Infrastructure Systems*, DOI: 10.1061/(ASCE)IS.1943-555X.0000238.
- Fisher JB, M Sikka, WC Oechel, DN Huntzinger, JR Melton, CD Koven, A Ahlström, AM Arain, I Baker, JM Chen, P Ciais, C Davidson, M Dietze, B El-Masri, D Hayes, C Huntingford, **AK Jain**, PE Levy, MR Lomas, B Poulter, D Price, AK Sahoo, K Schaefer, H Tian, E Tomelleri, H Verbeeck, N Viovy, R Wania, N Zeng, and CE Miller (2014): Carbon cycle uncertainty in the Alaskan Arctic, *Biogeosciences*, 11, 4271-4288, doi:10.5194/bg-11-4271-2014.
- Miller P., Robeson, M., El-Masri, B., Barman, R., Zheng, G., **Jain, AK**, Kale., L. (2014) Scaling the ISAM land surface model through parallelization of inter-component data transfer. *Proceeding of the International Conference of Parallel Processing*.
- Walker AP, PJ Hanson, MG De Kauwe, BE Medlyn, S Zaehle, S Asao, M Dietze, MT Hickler, C Huntingford, CM Iversen, **AK Jain**, M Lomas, Y Luo, H McCarthy, WJ Parton, IC Prentice, PE Thornton, S Wang, YP Wang, D Warlind, E Weng, JM Warren, FI Woodward, R Oren, and RJ Norby (2014), Comprehensive ecosystem model-data synthesis using multiple data sets at two temperate forest free-air CO₂ enrichment experiments: Model performance at ambient CO₂ concentration, *J. Geophys. Res. Biogeosci.*, 119, doi:10.1002/2013JG002553.
- Zaehle S, BE Medlyn, MG De Kauwe, AP Walker, MC Dietze, T Hickler, Y Luo, YP Wang, B El-Masri, P Thornton, **AK Jain**, S Wang, D Warlind, E Weng, W Parton, CM Iversen, A Gallet-Budynek, H McCarthy, A Finzi, PJ Hanson, IC Prentice, R Oren1 and RJ Norby 2014: Evaluation of 11 terrestrial carbon–nitrogen cycle models against observations from two temperate Free-Air CO₂ Enrichment studies, *New Phytologist*, doi: 10.1111/nph.12697.
- Zscheischler J, AM Michalak, C Schwalm, MD Mahecha, DN Huntzinger, M Reichstein, G Berthier, P Ciais, RB Cook, B El-Masri, M Huang, A Ito, **AK Jain**, A King, H Lei, C Lu, J Mao, S Peng, B Poulter, D Ricciuto, X Shi, B Tao, H Tian, N Viovy, W Wang, YWei, J Yang, and N Zeng (2014),

- Impact of large-scale climate extremes on biospheric carbon fluxes: An intercomparison based on MsTMIP data, *Global Biogeochem. Cycles*, 28, doi:10.1002/2014GB004826.
- Meiyappan P, M Dalton, B O'Neill, **AK Jain** (2014), Spatial modeling of agricultural land use change at global scale, *Ecological Modeling*, 291, 152-174.
- Meiyappan P, **AK Jain**, J House (2014), Increased influence of nitrogen limitation on CO₂ emissions from future land use and land-use change, *Global Change Biology* (Submitted).
- Song Y, **AK Jain**, L William, HS Kheshgi, M Khanna (2014), Estimates of Biomass Yield for Perennial Bioenergy Grasses in the United States, *Bioenergy Research*, DOI 10.1007/s12155-014-9546-1.
- Le Quéré C, GP Peters, RJ Andres, RM Andrew, T Boden, P Ciais, P Friedlingstein, RA Houghton, G Marland, R Moriarty, S Sitch, P Tans, A Arneeth, A Arvanitis, DCE Bakker, L Bopp, JG Canadell, LP Chini, SC Doney, A Harper, I Harris, JI House, **AK Jain**, SD Jones, E Kato, RF Keeling, KK Goldewijk, A Körtzinger, C Koven, N Lefèvre, F Maignan, A Omar, T Ono, G-H Park, B Pfeil, B Poulter, MR Raupach, P Regnier, C Rödenbeck, S Saito, J Schwinger, J Segsneider, BD Stocker, B Tilbrook, S van Heuven, N Viovy, R Wanninkhof, A Wiltshire, and S Zaehle (2014), Global carbon budget 2013, *Earth Syst. Sci. Data*, doi:10.5194/essd-6-1-2014.
- Le Quéré C, R Moriarty, RM Andrew, GP Peters, P Ciais, P Friedlingstein, SD Jones, S Sitch, P Tans, A Arneeth, TA Boden, L Bopp, Y Bozec, JG Canadell, F Chevallier, CE Cosca, I Harris, M Hoppema, RA Houghton, JI House, AJ Jain, T Johannessen, E Kato, RF Keeling, V Kitidis, K Klein Goldewijk, C Koven, CS Landa, P Landschützer, A Lenton, ID Lima, G Marland, JT Mathis, N Metzl, Y Nojiri, A Olsen, T Ono, W Peters, B Pfeil, B Poulter, MR Raupach, P Regnier, C Rödenbeck, S Saito, JE Salisbury, U Schuster, J Schwinger, R Séférian, J Segsneider, T Steinhoff, BD Stocker, AJ Sutton, T Takahashi, B Tilbrook, GR van der Werf, N Viovy, Y-P Wang, R Wanninkhof, A Wiltshire, and N Zeng (2014), Global carbon budget 2014, *Earth Syst. Sci. Data Discussion*, 7, 521–610, 2014, doi:10.5194/essdd-7-521-2014.

Chapters in Books

- Lal, M. and **A.K. Jain**, 1989: Increasing anthropogenic Constituents in the Atmosphere and associated climatic changes, *Encyclopedia on Library of Environmental Control Technology*, Paul N. Chermisinoff (ed.), 2, 735-62, Gulf Publishing, USA.
- Bach, W. and **A.K. Jain**, 1990: Tribhauseffekt und Klimaänderungen Die Wirksamkeit der von der Enquete-Kommission empfohlenen Maßnahmen, *Beitrag für den 3. Bericht "Schutz der Erde" der Enquete-Kommission* (ISBN 3-924521-71-9) (in German).
- Ausubel, J., E. Arrhenius, R.E. Benedick, O. Davidson, **A.K. Jain**, J. -H. Kim, S. Rayner, B. Schlomann, R. Ueberhorst, K. Von Moltke, 1992: Social and Institutional Barriers to reducing CO₂ Emissions, Limiting Greenhouse Effects, *Controlling Carbon Dioxide Emissions*, G. I. Pearman, editor, Wiley Publishers.
- Bach, W. and **A.K. Jain**, 1993: The Climate Change Challenge, Today's Actions Reduce Tomorrow's Risks, in: *Global Warming: Concern for Tomorrow*, editor, M. Lal, Tata McGraw-Hill, Delhi Publishers, pp 281-320.
- Houghton, J.T., L.G. Meira Filho, J. Bruce, H. Lee, B.A. Callander, N. Harris, A. Kattèbberg, and K. Maskell (eds.) (Invited author **A. Jain** and others), 1995: *United Nations Intergovernmental Panel on Climate Change (IPCC) Report "Climate Change 1994: Radiative Forcing of Climate Change"*, Cambridge University Press, Great Britain, 1995 (ISBN: 0 521 55055 6).
- Houghton, J.T., L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattèbberg, and K. Maskell (eds.) (Invited author list includes **A. Jain**), 1996: *United Nations Intergovernmental Panel on Climate*

- Change (IPCC) Report "Climate Change 1995: The Science of Climate Change"*, Cambridge University Press, Great Britain (ISBN: 0 521 56436 0).
- Harvey, D., J. Gregory, M. Hoffert, **A.K. Jain**, M. Lal, R. Leemans, S. Raper, T. Wigley, J. de Wolde, 1997: *United Nations Intergovernmental Panel on Climate Change (IPCC) Technical Paper 2 "An Introduction to Simple Climate Models Used in the IPCC Second Assessment Report,"* United Nation Environmental Program (UNEP), Geneva, Switzerland, 50 pp (ISBN: 92-9169-101-1).
- J.T.Houghton, L.G.Meira Filho, D.J. Griggs, K. Maskell (eds.) (Invited author list includes **A. Jain**), 1997: *United Nations Intergovernmental Panel on Climate Change (IPCC) Technical Paper 3 "Stabilization of Atmospheric Greenhouse Gases: Physical, Biological and Socio-economic Implications,"* , United Nation Environmental Program (UNEP), Geneva, Switzerland, Geneva, Switzerland, 52 pp (ISBN: 92-9169-102-X).
- Wigley, T.M.L., **A. Jain**, F. Joos, P.R. Shukla, B.S. Nyenzi, 1997: *United Nations Intergovernmental Panel on Climate Change (IPCC) Technical Paper 4 "Implications of Proposed CO₂ emissions limitations,"* United Nation Environmental Program (UNEP), Geneva, Switzerland, 37 pp (ISBN: 92-9169-103-8).
- Wuebbles, D. J., **A.K. Jain**, R. Kotamarthi, V. Naik, and K.O. Patten, 1998: Replacements for CFCs and halons and their effects on stratospheric ozone, In: *Recent Advances in Stratospheric Processes*, T. R. Nathan and E. Cordero (eds.), Research Signpost Publisher, India.
- Kheshgi, H. S., and **A.K. Jain**, 1999: Reduction of the atmospheric concentration of methane as a strategic response option to global climate change, In: *Greenhouse Gas Control Technologies*, Reimer, P., B. Eliasson, and A. Wakaun (eds.), Elsevier Science Limited, 775-780.
- Prather, M.J. and R. Sausen (Invited authors list includes **A.K. Jain**), 1999: *United Nations Intergovernmental Panel on Climate Change (IPCC) Special Report Aviation and the Global Atmosphere,* Cambridge University Press, Great Britain (ISBN: 0521 66404 7).
- Caldeira, K., M.I. Hoffert, **A.K. Jain**, 2000: Simple Ocean Carbon Cycle Models, T. Wigley and D. Schimel, eds., In *The Carbon Cycle*, Cambridge Univ. Press, New York, NY., 199-211
- Hayhoe, K.A.S., **A.K.Jain**, H. Kheshgi, D.J. Wuebbles, 2000: *Contribution of CH₄ to Multi-Gas reduction target: The impact of atmospheric chemistry*, In: *Non-CO₂ Greenhouse Gases (NCGG-2): Scientific understanding, control and implementation*, J. van Ham, A.P.M. Baede, L.A. Meyer, and R. Ybema (eds.), Kluwer Academic Publishers, Dordrech, 425-432.
- Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, C. A. Johnson (eds.) (Contributing author list includes **A.K. Jain**), 2001: *United Nations Intergovernmental Panel on Climate Change (IPCC) Report The Climate Change 2001: The Scientific Basis*, Cambridge University Press, Great Britain, 183-235 (ISBN: 0 521 01495 6).
- Wuebbles, D.J., **A.K. Jain**, and R. Watts, 2001: Concern about climate change and global warming, Chapter 1 in *Innovative Energy Strategies for CO₂ Stabilization*, Robert Watts, editor, Cambridge University Press, Cambridge, UK.
- Jain, A.K.**, K.A.S. Hayhoe, 2003, Global air pollution problems, In: *Handbook of Atmospheric Sciences*, C. N. Hewitt and A. V. Jackson (eds.), Blackwell Science Ltd, Oxford, UK, pp 339– 371.
- Wuebbles, D.J., M. Dutta, **A.K. Jain**, S.L. Baughcum, 2003: Radiative forcing on climate from stratospheric aircraft emissions, In: *Aviation, Atmosphere and Climate (AAC)*, R. Sausen, C. Fichter and G. Anmanatidis (Eds.), European Commission, LX46, 2/85, B-1049, Brussels, 184-189.
- Jain, A. K.**, 2007: The Potential Response of Historical Terrestrial Carbon Storage to Changes in Land Use, Atmospheric CO₂ and Climate, In: *Human Induced Climate Change: An Interdisciplinary Assessment*, M. Schlesinger et al. (eds.), Cambridge University Press.

Jain, A. K., 2008: Global Warming and Climate Change Science, In: *Atmospheric Sciences for Environmental Scientists*, C.N.Hewitt and A.V. Jackson (eds.), Blackwell Science Ltd, Oxford, UK.

Jain, A. K., 2010: Climate and Ecosystem Protection Requires Burden Sharing, In: *Sustainable Development and Biodiversity*, R. N. Pati and A. J. Jain (eds.), Sarup & Sons Publishers, New Delhi, India.

Jain, A. K., P. Meiyappan, T. Richardson, 2013: Estimates of Global Carbon Emissions from Land Cover and Land Use Change Activities Using Three Different Data Sets., French, N.H.F., and B.C. Reed (eds.), In: *Land Use and the Carbon Cycle: Science and Applications in Coupled Natural-Human Systems*, Cambridge University Press.

Books Edited or Co-Edited

Sustainable Development and Biodiversity, 2010: R. N. Pati and A. K. Jain (eds.), Sarup & Sons Publishers, New Delhi, India.

Book Reviews

Atmospheric Methane: Its Role in the Global Environment, M.A.K. Khalil (ed), Springer-Verlag, 2000, *Bulletin of American Meteorological Society*, February 2002.

Bulletins Reports, or Conference Proceedings

Jain, A.K., and M. Lal, 1986: On the meridional variation of aerosol-induced climatic changes in the earth atmosphere system, In: the proceedings of the *6th Conference on Atmospheric Radiation*, Williamsburg, VA, USA, May 13-16, 1986.

Lal, M., **A.K. Jain**, 1986: A study on the effect of doubling of CO₂ on earth's climate with 2-D radiative-convective model, In: *Research Activities in Atmospheric and Ocean Modeling*, WMO/TD-No 141, Rep. No. 9, WMO, Geneva, Switzerland.

Lal, M., **A.K. Jain**, 1988: Antarctic ozone hole and associated climatic change, In the proceedings of the *National Workshop on Antarctic Studies*, National Physical Laboratory, New Delhi, India, May 2-5, 1988.

Jain, A.K., and W. Bach, 1989: Sensitivity of radiative convective processes to multiple cloud layers, In: the proceedings of *the International Conference on Modelling of Global Climate Change and Variability*, Hamburg, Germany, Sept 11-15, 1989

Bach, W. and **A. K. Jain**, 1991: A global warming challenge: A primer for climate protection from international conventions to local actions, In the proceedings of *the World Clean Energy Conference (WCEC)*, Geneva, Nov 4-7, 1991.

Bach, W. and **A.K. Jain**, 1991: From climate crises to climate protection-how effective are the measures to reduce the greenhouse warming, *Report for Greenpeace Germany*, pp 74.

Jain, A.K., and W. Bach, 1992: An Integrated Climate Model: The effectiveness of countermeasures to reduce the man-made greenhouse gas effect, In: the proceeding of the *Third Symposium on Global Climate Change Studies*, Atlanta, Georgia, Jan. 5-10, 1992.

Jain, A.K. and D.J. Wuebbles, 1993: CO₂ Impulse Response Curves for GWP Calculations, *Lawrence Livermore National Laboratory report UCRL-ID-115333*.

Wuebbles, D.J. and **A.K. Jain**, 1993: Carbon Cycle Modeling Calculations for the IPCC, Paper presented at the *Intergovernmental Panel on Climate Change (IPCC) Working Group 1 Meeting*, Carqueiranne, France, Sept. 18, 1993. *Lawrence Livermore National Laboratory report UCRL-JC-115337*.

Enting, I.G., T.M.L. Wigley, and M. Heimann, (contributing author list includes **A. Jain**) 1994: Future emissions and concentrations of carbon dioxide: key ocean/atmosphere/land analyses, *CSIRO Division of Atmospheric Research Technical Paper* No. 31, CSIRO Australia 1994.

- Grossman, A.S., D. J. Wuebbles, J.S. Tamareis, K. O. Patten, **A. K. Jain**, and K.E. Grant, 1994: Indirect global warming effects of tropospheric ozone induced by surface methane emissions, In the proceedings of *the 17th Annual review Conference on Atmospheric Transport Models*, Bedford, Ma., June 7-8, 1994, LLNL Report UCRL-JC-116589.
- Jain, A.K.**, H.S. Kheshgi, and D.J. Wuebbles, 1994: Integrated Science Model for Assessment of Climate Change, Model, presented at and published in the proceedings of *Air and Waste Management Association's 87th Annual Meeting*, Cincinnati, Ohio, June 19-24, 1994.
- Jain, A.K.**, H.S. Kheshgi, and D.J. Wuebbles, 1995: Use of carbon isotopes for the calibration of a global carbon cycle model, Proceedings of the *Tsukuba Global Carbon Cycle Workshop*, Tsukuba, Japan, Feb 1-3, 1995.
- Wuebbles, D.J., and **A.K. Jain**, 1995: Concerns about Climate Change and SF₆, In: Proceedings of the Conference on "*SF₆ Use in Electrical Transmission and Distribution Systems*", Washington, D.C., August 9-10, 1995, U.S. Environmental Protection Agency.
- Hayhoe, K., **A. Jain**, and D. Wuebbles. 1997. An Assessment of the 'Safe Corridor' Analysis Technique, *special report for the U.S. Environmental Protection Agency*.
- Kheshgi, H.S., **A.K. Jain**, and D.J. Wuebbles, 1997: Analysis of Proposed CO₂ Emission Reductions in the Context of Stabilization of CO₂ Concentration, presented at the *Air and Waste Management Association's 90th Annual Meeting*, Toronto, Canada, June 8-13, 1997.
- Jain, A.K.**, 2001: *The carbon cycle and stabilization of atmospheric CO₂*, Proceedings of the IPIECA (Intl Petroleum Industry Environmental Conservation Association) Symposium on Long Term Carbon and Energy Management, Cambridge, MA, Oct 15-16, 2001.
- Taheripour, F., X. Yang, and **A. Jain**: "Global Land Use Emissions and Future Changes in Agro-Ecological Zones", Accepted for presentation at the 10th Annual Conference on Global Economic Analysis, Purdue University, West Lafayette, June 7-9, 2007.

Invited Lectures, Invited Conference Presentations and Other Presentations (2005- Cont.)

- Land Use, Carbon Cycle and Climate Change, *Frontiers of Environmental Change Research: Climate Change Drivers, Impacts, and Policy*, Brown University, Providence RI, September 15-16, 2005.
- Estimates of Global Biomass Burning Emissions for Reactive Greenhouse Gases (CO, NMHCs, and NO_x) and CO₂, *International Conference on Mesoscale Processes in Atmosphere Ocean and Environmental Systems*, New Delhi, India, February 14-17, 2006.
- Human Influence on North America Terrestrial carbon Budget, *AAAS Annual Meeting "Grand Challenges, Great Opportunities"*, St. Louis, Missouri, USA, February 16-20, 2006.
- Carbon implications of Land Cover and land Use Changes, *Expert Meeting on the scientific and methodological aspects of the proposal by Brazil / MATCH*, Louvain-La-Neuve, Belgium, March 13-14, 2006.
- Estimates of Global Biomass Burning Emissions for CO₂, *Community Climate System Model (CCSM) Biogeochemistry Working Group Meeting*, NCAR, Boulder CO., March 28-30, 2006.
- Integrated Assessment Modeling of Climate and Carbon Cycle, *NOAA, Alaska Fisheries Science Center*, Seattle WA 98115, July 27, 2006.
- Land Use Scenarios: Linking Biophysical and Socio-Economic Models, *Community Climate System Model (CCSM) Joint Working Groups Session on Land, Chemistry, and Biogeochemistry*, NCAR, Boulder CO., February 26-28, 2007.

- Estimating the Radiative Forcing of Climate, *ExxonMobil Research and Engineering Company*, Annandale, NJ, March 20 - 21, 2007.
- A Quick Look at the Science of Climate Change, *21st Annual Environmental Conference and Expo*, Iowa-Illinois Safety Council, Stoney Creek Inn, Moline, IL, September 27, 2007
- Terrestrial Carbon Sequestration: Net Greenhouse Gas Accounting and Biogeochemical Cycles *Argonne National Laboratory*, Argonne, IL, December 5, 2007
- Soil Carbon Sequestration Potential, *Workshop on Biologically Enhanced Carbon Sequestration (BECS)*, Lawrence Berkeley National Laboratory, Berkeley, CA, October 29, 2007.
- Global Warming and Climate Change Science, *American Physical Society/Ohio-Region Section Meeting (OSAPS)*, Youngstown State University, Youngstown, OH, March 28, 2008.
- Terrestrial Carbon Cycle and Climate Change, *Department of Civil and Environmental Engineering, University of Illinois*, April 4, 2008
- Carbon Cycle and Climate Change, *2008 Environmental Horizon Sustainable Summit*, University of Illinois, Urbana, IL, April 24, 2008.
- Biogeochemical Cycles and Climate Change, *The Joint Global Change Research Institute, University of Maryland*, College Park, MD, May 1, 2008.
- The Role of Nitrogen Dynamics in Terrestrial Biosphere, *Department of Global Ecology, Carnegie Institute of Sciences*, Stanford, CA, June 26, 2008.
- Integration of Bioenergy Crop Growth Model into ISAM, *Conference on Greenhouse Gas Emissions from Biofuels*, EBI, Berkeley, University of California, Berkeley, CA, June 9-10, 2008.
- Interactions between Climate Change and Earth's Climate System, *2008 Summer Teacher Institute - Climate Change: Biological & Social Implications*, University of Chicago, June 23-25, 2008
- The Role of Nitrogen Dynamics in Terrestrial Biosphere, *Department of Geography, Northern Illinois University*, DeKalb, IL, October 24, 2008.
- Modeling Miscanthus and Switchgrass Yields, *EBI Workshop on Bioenergy Crop Modeling and Land Use, UC-Berkeley*, October 9-10, 2008.
- Biofuel Crop Yield Estimation – An Integrated Modeling Approach, *Linking Biofuels and Economic Models of Biofuel Production and Environmental Impacts*, Chicago, IL, November 13-14, 2008.
- Land Cover and Land Use Change and Its Effect on Monsoon Asia Region, *NASA-LCLUC Science Team Meeting with MAIRS, GOF CGOLD and SEA START Programs on Land Cover/Land Use Change Processes in Monsoon Asia Region*, Khon Khan, Thailand, January 12-17, 2009.
- Integrated Assessment Modeling of Biogeochemical Cycles, Climate Change and Impacts, *Indian Institute of Tropical Meteorology*, Pune, India, Feb 2, 2009.
- Global Carbon Cycle and Climate Change, *Center for Atmospheric and Oceanic Science, Indian Institute of Science*, Bangalore, India, Feb 4, 2009.
- Confronting Global Warming, *First Global Summit on Sustainable Development and Biodiversity (GLOSS, 2008)*, February 7 – 9, 2009.
- Confronting Global Warming, *Mechanical, Aerospace and Structural Engineering Department, Washington University in St. Louis*, April 9, 2009.

- Integrated Assessment Modeling of Biogeochemical Cycles, Climate Change and Impacts, *School of Geography, Beijing Normal University*, Beijing, China, April 26, 2009.
- Integrated Assessment of Climate Change, *Institute of Atmospheric Physics, Chinese Academic of Sciences*, Beijing, China, April 27, 2009.
- Implications of Human Activities on Global Climate, *Conference on Mathematical Models of Dynamics and Control of Environmental Changes: Scaling from Genomes to Ecosystems*, Shanghai, China, April 26 – May 1, 2009
- Integration of Nitrogen Dynamics into a Global Terrestrial Ecosystem Model, *The National Center for Ecological Analysis and Synthesis (NCEAS) for the “Benchmarking Ecosystem Response Models with Experimental Data from Long-Term CO₂ Enrichment Experiments”*, NCEAS, Santa Barbara, CA, May 4 – 7, 2009
- Biomass Potential: Economics and Resource Use, *ExxonMobil Research and Engineering Company*, Annandale, NJ, May 12, 2009.
- Integrated Assessment Modeling of Biogeochemical Cycles, Climate Change and Impacts, *NASA Ames Research Center*, Moffett Field, CA, July 23, 2009.
- Integration of Biophysical and Economic Analysis to Study the Cost of Producing Bioenergy Crops in the United States, *2009 ASA-CSSA-SSSA Annual Meetings*, Pittsburgh, PA, Nov. 1-5, 2009.
- Land-Use Change and Associated Changes in Hydrological Cycle and Energy Exchange Processes in Monsoon Asian Region, *American Geophysical Union (AGU) Fall meeting*, San Francisco, CA, December 14 – 18, 2009.
- Modeling of Global Biogenic Emissions for Key Indirect Greenhouse Gases, *American Geophysical Union (AGU) Fall meeting*, San Francisco, CA, December 14 – 18, 2009.
- Estimates of Global Biomass Burning Emissions for CO (Year 2000), *Burnt Biomass from Satellite Observations (BBSO-2) Workshop*, Toulouse, France, November 18-19, 2009.
- Land-Use Change and Associated Changes in Biogeochemical and Biophysical Processes in Monsoon Asian Region, *International Symposium on Bioenergy*, Kharagpur, India, January 5-7, 2010.
- Confronting Global Warming, *Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL), IIT Kharagpur, India*, January 5, 2010.
- LCLUC and Associated Changes in Biogeochemical and Biophysical Processes and Fluxes in Asian Monsoon Region, National Remote Sensing Centre (NRSC), *Indian Space Research Organisation (ISRO), Balanagar Hyderabad, India*, January 8, 2010.
- Impact of Land Use Changes on the Terrestrial CO₂ and N₂O, *Center for Atmospheric and Oceanic Science, Indian Institute of Science, Bangalore, India*, January 12, 2010.
- Land-Use Change and Associated Changes in Biogeochemical and Biophysical Processes in Monsoon Asian Region (MAR), *NASA 2010 LCLUC Spring Science Team Meeting*, Bethesda, MD, April 20-22.
- Integrated Science Assessment Model, *LBA DATA-Model Intercomparison Project Workshop*, Natal, State: Rio Grande do Norte, Brazil, June 21-22, 2010.
- Integrated Science Assessment Modeling Approach, *Advance Study Program Summer Colloquium on Asia in the 21st Century*, NCAR, Boulder, CO, August 1–3, 2010.
- Land Cover and Land Use Change in Integrated Science Assessment Model (ISAM), *First Annual Integrated Assessment Modeling Group meeting*, NCAR, Boulder, CO., August 4-5, 2010.

- Confronting Global Warming, *Indian Space Research Organization (ISRO)*, Dehradun, India, December 7, 2010.
- Estimating Land Use Emissions using the ISAM, *Advancing Land-use Modeling and Analysis for Carbon Cycling Studies Workshop*, Princeton University, Princeton, NJ, May 17-19, 2011.
- The Influence of Man on Climate Change, *31st Annual Electric Utility Chemistry Workshop*, Champaign, IL, June 7-9, 2011.
- Estimates of Land Cover and Land Use Changes using the Integrated Science Assessment Model (ISAM), *Annual Integrated Assessment Modeling Group meeting*, NCAR, Boulder, CO., July 21-22, 2011.
- Investigating the Role of Biogeochemical Processes in the Northern High Latitudes on Global Climate Feedbacks Using an Efficient Scalable Earth System, *Climate and Earth System Modeling PI Meeting hosted by DOE*, Washington, DC, September 19-22, 2011.
- Land cover and land use change and its effects on carbon dynamics in the Monsoon Asian Region, *International Conference on Land Cover Land Use Change in South East Asia*, Hanoi, Vietnam, November 7-10, 2011.
- Exploring the Sensitivity of Terrestrial Ecosystems and Atmospheric Exchange of CO₂ to Global Environmental Factors, *American Geophysical Union (AGU) Fall meeting*, San Francisco, CA, December 5 – 9, 2011.
- Implication of Growing Large-Scale Energy Crops on Water Balance, *Annual Integrated Assessment Modeling Group meeting*, NCAR, Boulder, CO., July 19-20, 2012.
- Land-Use (& Land Cover Change), Biogeochemistry and Climate, *EMF Workshop on Climate Change Impacts and Integrated Assessment*, Snowmass, CO, July 23-27, 2012.
- Estimates of Carbon Emissions from Historical Land Cover and Land-Use Change, *Land Change Emissions Estimates, Data and Modelling*, Exeter University, Exeter, UK, October 17-19, 2012.
- The Influence of Man on Climate Change, *Land Cover and Land Use Change Dynamics and their Impacts in South Asia*, Karunya University, Coimbatore, India, January 7-14, 2013.
- Implication of Growing Large-Scale Energy Crops on Water Balance, *The Cyprus Institute*, Larnaca, Cyprus, April 4, 2013.
- Modeling Carbon Sequestration Under Changing Climate, *Workshop on the Optimal Modelling and Management of Grassland Ecosystem*, Hulunber, Inner Mongolia, China, July 17-25, 2013.
- Reconstructions: consequences of alternative data sets for land-atmosphere interactions, *Joint GLP/iLEAPS/AIMES workshop Interactions among Managed Ecosystems, Climate, and Societies (IMECS)*, Amsterdam, Netherland, September 25-26, 2013.
- Land Use Changes and their Impacts on Biogeochemical and Biophysical Fluxes, *International Conference Global Vegetation Monitoring and Modeling*, Avignon, France, February 3-7, 2014.
- ISAM model calculations for GPP and Latent Energy at Fluxnet Sites, *Model-Experiment Synthesis of Terrestrial Ecosystem Responses to Elevated CO₂ Modelling & Data Workshop*, 24th-28th February 2014, Big Bear, CA, USA.
- Spatial Downscaling Approaches for Allocating Agriculture land Use Change, *Global Land Project Meeting*, Berlin, Germany March 18-22, 2014.

- The Interactions between Biogeophysical and Biogeochemical Processes and their Feedbacks on Permafrost Soil Carbon Stocks, *Environmental Science Division, Argonne National Laboratory, Argonne, IL*, April 3, 2014.
- Implementation of Prognostic LAI in a Land Surface Model to Improve Water, Energy and Carbon Fluxes, *MAIRS Open Science Conference 2014*, April 7-12, 2014, Beijing, China
- Implications of Growing Biofuel Crops on Hydrological Cycle, *MAIRS Open Science Conference 2014*, April 7-12, 2014, Beijing, China.
- Implementation of Prognostic LAI in a land surface model to improve water, energy, and carbon fluxes, *US-International Association for Landscape Ecology*, Austin, TX, April 14-18, 2013.
- Contributions of Primary and Secondary Forests, and Nitrogen Dynamics to Terrestrial Carbon Emissions, *European Geophysical Union 2014 Meeting*, Vienna, Austria, April 27- May 2, 2014.
- Land Cover and Land Use Changes and Their Impacts on Carbon and Nitrogen Stocks in Vegetation and Soils, *4th iLEAPS Science Conference*, Nanjing, China, May 12-16, 2014.
- The Interactions between Biogeophysical & Biogeochemical Processes and their Feedbacks on Permafrost Soil Carbon, *2014 US International Associate of Landscape Ecology (IALE) Annual Symposium, Anchorage, Alaska*, May 18-22, 2014.

Other Presentations

- Jain, A. K., Coupled Terrestrial-Ocean Carbon Cycle ISAM Model Results, Fifth Expert Meeting on the Scientific and Methodological Aspects of the Proposal by Brazil / MATCH, Rio de Janeiro, Brazil, April 10-13, 2005.
- Yang, X., A. Jain, and W. Post, Modeling the combined effects of CO₂, nitrogen and climate on the carbon dynamics of plants and soils, Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences of the International Union of Geodesy and Geophysics (IAMAS2005), Beijing, China, August 2-11, 2005.
- Jain, A.K., X. Yang, T. West, W. Post, Assessing the effectiveness of soil carbon sequestration in North America and its impact on net terrestrial uptake of CO₂, Seventh International Carbon Dioxide Conference, Boulder, CO, Sept 25-30, 2005.
- Jain A.K., X. Yang, W.M. Post, Assessing the Effectiveness of Soil Carbon Sequestration in North America, American Geophysical Union (AGU) Fall 2006 meeting, San Francisco, CA, December 11 – 15, 2006.
- Jain A.K., X. Yang, W.M. Post, North America Terrestrial Carbon Budget: A Model Analysis of the Combined Effects of CO₂, Nitrogen, Climate, Land Use Changes and Management, The U.S. North American Carbon Program (NACP) Investigators Meeting, Colorado Springs, CO, January 21 - 24, 2007.
- Taheripour, F., X. Yang, A. K. Jain, Future Changes in Global Land Use Emissions, 10th Annual Conference on Global Economic Analysis, Purdue University, West Lafayette, June 7-9, 2007.
- Yang, X., A. Jain, and W. Post, Examining the role of nitrogen cycling on the terrestrial response to CO₂, climate, and nitrogen deposition, American Geophysical Union (AGU) Fall 2007 meeting, San Francisco, CA, December 10 – 14, 2007.
- Yang, X., A. Jain, and W. Post, Examining the role of nitrogen cycling on the terrestrial response to CO₂, climate, and nitrogen deposition, American Geophysical Union (AGU) Fall 2007 meeting, San Francisco, CA, December 10 – 14, 2007.

- Richardson, T. X. Yang, A. Jain, B. O'Neill, Estimates of Geographically Explicit Future CO₂ Emissions from Land Cover/ Land Use Changes, American Geophysical Union (AGU) Fall 2007 meeting, San Francisco, CA, December 10 – 14, 2007.
- Khanna, M. , A. K. Jain, H. Onal, and J. Scheffran, Meeting the Demand for Biofuels: Impact on Land Use and Carbon Mitigation, U.S. DOE sponsored Workshop Joint Genomics: GTL Metabolic Engineering 2008 and USDA-DOE Plant Feedstock Genomics for Bioenergy Awardee Workshop 2008, Bethesda, MD, February 10-13, 2008.
- Barman, R., A.K. Jain, Estimation of Land Use Suitability Using an Integrated Science Assessment Approach, The joint CCSM Land Model and Biogeochemistry Working Group meetings at NCAR, 20-22 February 2008.
- Jain A.K. and X. Yang, North America Terrestrial Carbon Budget: A Model Analysis of the Combined Effects of CO₂, Nitrogen, Climate, Land Use Changes and Management, 2008 NASA Carbon Cycle and Ecosystems Joint Science Workshop, College Park, MD, April 28 – May 2, 2008.
- Jain, A.K., X. Yang, H. Ksheshgi, D. McGuire, W. Post, Nitrogen Attenuation of Terrestrial Carbon Cycle Response to Global Environmental Change, American Geophysical Union (AGU) Fall 2008 meeting, San Francisco, CA, December 15 – 19, 2008
- Barman, R., A. Jain, W. Post and M. Sivapalan, X. Yang, Modeling Nitrogen Leaching with a Biogeochemical Model Coupled with Soil Hydrology Model, American Geophysical Union (AGU) Fall 2008 meeting, San Francisco, CA, December 15 – 19, 2008.
- Ksheshgi, H, A. K. Jain, X. Yang, Nitrogen Attenuation of Terrestrial Carbon Cycle Response, Joint IPCC-WCRP-IGBP Workshop: New Science Directions and Activities Relevant to the IPCC AR5, University of Hawaii, Honolulu, Hawaii, March 2-6, 2009.
- Jain A.K., X. Yang, North America Terrestrial Carbon Budget: A Model Analysis of the Combined Effects of CO₂, Nitrogen, Climate, Land Use Changes and Management, 2009 Joint Assembly, May 24-27, 2009, Toronto, Canada.
- Jain, A.K. and M. Erickson, Application of an Integrated Biogeochemical Crop Growth Model for Predicting Potential US Biofuel Crop Yields, Energy Biosciences Institute 2009 Research Retreat, Urbana, IL, June 19-22, 2009.
- Khanna, M., A. K. Jain, H. Onal, and J. Scheffran, Economic and Environmental Impacts of Biofuels: Application to Illinois, Energy Biosciences Institute 2009 Research Retreat, Urbana, IL, June 19-22, 2009.
- Khanna, M., A. K. Jain, H. Onal, and J. Scheffran, Economic and Environmental Impacts of Biofuels: Implications for Land Use and Policy, Energy Biosciences Institute 2009 Research Retreat, Urbana, IL, June 19-22, 2009.
- Jain, A.K., X. Yang, T. Richardson, Impact of Land Use Change and Nitrogen Deposition on the Carbon and Nitrogen Stocks of Plants and Soils, Second Integrated Land Ecosystem-Atmosphere Study (iLEAPS) Science Conference, Melbourne, Australia, August 24-28, 2009.
- Richardson, T., X. Yang and A. Jain, Estimates of Historical Global Sources and Sinks of Carbon from Land Cover and Land Use Changes, American Geophysical Union (AGU) Fall 2009 meeting, San Francisco, CA, December 14 – 18, 2009.

- Yang, X., A. Jain, V.R. Kotamarthi, 2009: Modeling of N₂O and NO emissions from soils in terrestrial ecosystems, American Geophysical Union (AGU) Fall 2009 meeting, San Francisco, CA, December 14 – 18, 2009.
- Khanna, M., A. K. Jain, H. Onal, and J. Scheffran, 2010: Application of an Integrated Biogeochemical Crop Growth Model for Predicting Potential U.S. Biofuel Crop Yields, Energy Bioscience Institute 2009 Research Retreat, Urbana, IL, June 19-22, 2010.
- Khanna, M., A. K. Jain, H. Onal, and J. Scheffran, 2010: Meeting the demand of biofuel: Impact on land use and carbon mitigation, U.S. DOE sponsored Genomic Science 2010 Awardee Workshop VIII and Knowledgebase Workshop, Crystal City, VA, February 7-10, 2010.
- Jain, A., M. Liang, R. Barman, X. Yang, P.S. Roy and A. Roy, 2010: Impact of Land Use Changes & N Deposition & Fertilizer on Carbon & Nitrogen Stock of Plants and Soils in Asia, 5th International Nitrogen Conference 2010, New Delhi, India. Dec 3-7, 2010.
- Jain, A., M. Liang, R. Barman, X. Yang, P. Meiyappan, 2010: Impacts of Land Use Change, Nitrogen Deposition and Nitrogen Fertilizers on Carbon and Nitrogen Stocks of Plants and Soils, Fall 2010 American Geophysical Union (AGU) Meeting, San Francisco, CA, 13-17 December 2010.
- Liang, M., Y. Song, R. Barman, A. Jain)An Integrated Biogeochemical and Biophysical Analysis of Bioenergy Crops, Fall 2010 American Geophysical Union (AGU) Meeting, San Francisco, CA, 13-17 December 2010.
- Barman, R., A. Jain, M. Liang and A. D. McGuire, 2010: Investigating the interactions between biogeophysical and biogeochemical processes in the northern high latitudes using a land surface model; feedbacks and climatic impacts, Fall 2010 American Geophysical Union (AGU) Meeting, San Francisco, CA, 13-17 December 2010.
- Yang, X., W. Post, P. Thornton, A. Jain, 2010: The Distribution of Soil Phosphorus in Terrestrial Ecosystems, Fall 2010 American Geophysical Union (AGU) Meeting, San Francisco, CA, 13-17 December 2010.
- Jain, A., P. Meiyappan, R. Nemani, S. Ganguly, D. Skole, W. Chomentowski, B. O'Neill, 2011: LCLUC and its Effects on Carbon and Nitrogen Dynamics in Monsoon Asian Region, NASA 2011 LCLUC Spring Science Team Meeting, University of Maryland, College Park, MD, March 28-30, 2011.
- Barman, R., A. Jain, R. Jacob, F. Hoffmann, M. Vertenstein, and L. Kale (2011). Coupling an alternative land surface model (the ISAM) with the CESM, 16th Annual CESM Workshop, Breckenridge, Boulder, CO, June 20-23, 2011.
- Song, Y, P. Meiyappan, A. Jain, M. Khanna and H. Huang, 2011: An Integrated Biogeochemical, Biophysical and Economic Analysis of Bioenergy Crops, Ecological Society of America (ESA) annual meeting, Austin, TX, August 7-12, 2011.
- Barman, R, F. Hoffman, Y. Song, P. Meiyappan, A. Jain, R. Jacob, M. Vertenstein (2011): Studying Uncertainties in Climate-Terrestrial Biogeochemical Feedbacks in the Northern High Latitudes using a Flexible Earth System Modeling Framework, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 5 – 9, 2011.
- Meiyappan, P, R. Barman, A. Jain, G. McIsaac, and P Lawrence (2011): Impacts of Future Land-Use Change on Nitrogen Leaching and Global Water Quality, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 5 – 9, 2011.

- Song, Y. R. Barman and A. Jain (2011): Energy Crops and their Implications on Soil Carbon Sequestration, Surface Energy and Water Balance, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 5 – 9, 2011.
- Barman, R., P. Meiyappan, Y. Song, B. E. Masri, A. K. Jain, D. M. Lawrence (2012): Intercomparison of Energy, Water and Carbon Fluxes in the CESM-ISAM framework, CESM Land Model and Biogeochemistry Working Groups Meeting, NCAR, Boulder, CO, March 27 – February 2, 2012.
- Barman, R. P. Meiyappan, Y. Song, B. Masri, A. K. Jain (2012): Modeling the Impacts of Multiple LCLUC Datasets on Energy, Water and Carbon Fluxes, NASA LCLUC Science Team meeting, Rockville, MD, April 2 - 5, 2012.
- El-Masri, B. and A. K. Jain (2012): Modeling the above and below ground carbon and nitrogen stocks in northern high latitude terrestrial ecosystems, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 3 – 7, 2012.
- Jain, A.K. and Y. Song (2012): Impact of climate change and variability on crop productivity, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 3 – 7, 2012.
- Song, Y., A.K. Jain, W. Landuyt, H. Khesghi (2012): Implications of Growing Bioenergy Crops on Hydrological Cycle, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 3 – 7, 2012.
- Walker A. P.; S. Zaehle; M. G. De Kauwe; M. C. Dietze; P. J. Hanson; T. Hickler; A. K. Jain; Y. Luo; H. R. McCarthy; B. E. Medlyn; W. J. Parton; P. E. Thornton; S. Wang; Y. Wang; D. Warlind; E. Weng; R. Oren; R. J. Norby, 2012: Climatic drivers of variability in the response of NPP to elevated CO₂. A model-data comparison at two FACE sites in the south eastern US, Fall 2012 American Geophysical Union (AGU) Meeting, San Francisco, CA, 3-7 December 2012.
- Jain, A.K. (2013) Modeling the Above and Below Ground C and N Stocks in Northern High Latitude Terrestrial Ecosystems, CESM Land Model and Biogeochemistry Working Groups Meeting, NCAR, Boulder, CO, February 20 – 22, 2013.
- Yang, X., W.M. Post, A. Jain, P. Thornton (2013): Towards a representation of phosphorous dynamics in earth system models: Development of global scale supporting datasets and CLM-CNP, CESM Land Model and Biogeochemistry Working Groups Meeting, NCAR, Boulder, CO, February 20 – 22, 2013.
- Jain, A., B. El-Masri, R. Barman (2013): Carbon exchange in the northern high latitude terrestrial ecosystems over the last three decades, European Geosciences Union General Assembly 2013, Vienna, Austria, April 7-12, 2013.
- Jain, A.K., B. El-Masri, Y. Jin (2013): Implementation of Prognostic LAI in a land surface model to improve water, energy, and carbon fluxes. US-International Association for Landscape Ecology, Austin, TX, April 14-18, 2013.
- El-Masri, B., A.K. Jain (2013): Carbon Dynamics in Amazonia. LBA-DMIP workshop, Ft. Collins, CO, April 22-23, 2013.
- Jain AK, P Meiyappan, Y Song, J House (2013): CO₂ Emissions from Land use Change Affected More by Nitrogen Cycle, than by the Choice of Land Cover Data, 9th International Carbon Dioxide Conference, Beijing, China, June 3-7, 2013.
- House J, R Houghton, AK Jain, et al. (2013): Reconciling global and regional trends in LULUCF fluxes, 9th International Carbon Dioxide Conference, Beijing, China, June 3-7, 2013.

- Jain AK (2013): Land Use Changes and Its Effects on Carbon and Nitrogen Dynamics In South And South East Asia Region, 11th Asia Flux International Workshop, Seoul, Korea, August 21-24, 2013.
- Andresen J, AK Jain, DS Niyogi, G Alagarwamy, L Biehl, P Delamater, O Doering, AA Elias, R Elmore, B Gramig, C Hart, O Kellner, X Liu, E Mohankumar, LS Prokopy, C Song, D Todey, M Widhalm (2013), Assessing the Impact of Climatic Variability and Change on Maize Production in the Midwestern USA, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- ElMasri, B, R Barman, AK Jain (2013), The interaction between biogeophysical and biogeochemical processes and their feedback on permafrost soil carbon stocks, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Jain AK and Y. Song (2013): Estimated impact of environmental variables on crop productivity, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Jain AK, Y Jin, B El-Masri, X Yang (2013), Modeling of N₂O emissions from soils in terrestrial ecosystems, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Meiyappen, P., M. Dalton, B. O'Neill, AK Jain (2013) Spatial modeling of agricultural land-use change at global scale, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Niyogi DS, X Liu, J Andresen, AK Jain; A Kumar, O Kellner, AA Elias (2013), Can Crop Models Simulate the ENSO Impacts on Regional Corn Yield in U.S. Corn Belt?, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Song Y, AK Jain, W Landuyt, HS Khesghi (2013), Estimates of spatial and temporal variation of energy crops biomass yields in the US, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.
- Walker AP, S Zaehle, MG De Kauwe, BE Medlyn, M Dietze, T Hickler, CM Iversen, AK Jain, Y Luo, HR McCarthy, WJ Parton, C Prentice, PE Thornton, S Wang, Y Wang, D Warlind, J Warren, E Weng, PJ Hanson, R Oren, RJ Norby (2013), Model-experiment synthesis at two FACE sites in the southeastern US. Forest ecosystem responses to elevated CO₂, American Geophysical Union (AGU) Fall meeting, San Francisco, CA, December 9 – 13, 2013.

Teaching and Supervising Activities

Courses Taught

ATMS140, Climate and Global Change
 ENVS 301, Environmental Issues Today
 ATMS 307, Climate Processes
 ENSU 302, Air Pollution to Global Change
 ATMS/CEE 345 Atmospheric Dispersion Modeling
 ATMS 491, Integrated Assessment of Climate Change
 ATMS 447, Climate Change Assessment
 ATMS 449, Biogeochemical Cycles

Supervision of Graduate Students

Cao, Long	Ph.D.	Completed in March 2007
Yang, Xiojuan	Ph.D.	Completed in May 2009
Richardson, Tosha	M.S.	Completed in December 2009
Barman, Rahul	Ph.D.	Completed in August 2014
Jin, Ying	M.S.	Complete in December 2015
Song, Yang	Ph.D. candidate	present, plans to complete by May 2015
Meiyappan, Prasanth	Ph.D. candidate	Present, plans to complete by August 2015
Shu, Shijie	Ph.D. candidate	Present, plans to complete by May 2017
Cervarich, Matthew	Ph.D. candidate	Present, plans to complete by May 2018
Wang, Chen	Ph.D. candidate	Present, plans to complete by May 2019

D. Supervision of Postdoctoral and Research Fellows

Dr. Vivek Hardikar (July 1997-April 1998)
 Dr. Chung Chi Wang (October 1998-August 1999)
 Dr. Katharine H. Hayhoe (January 1998- July 2003)
 Dr. Zhining Tao (July 2003 – June 2004)
 Dr. Victoria Wittig (June 2008 – June 2009)
 Mr. Matthew Erickson (August 2008 – August 2009)
 Dr. Xiaojuan Yang (May 2009 – April 2010)
 Dr. Miaoling Liang (May 2009 – February 2011)
 Dr. Bassil El-Masri (December 2011 – July 2014)