

Curriculum Vitae

Atul K. Jain

Associate Professor

Professional Address

University of Illinois
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Education Background

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

Professional Employment

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–March, 1992

Visiting Scientist, Lawrence Livermore National Laboratory, Livermore, CA, USA.

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 – Cont.

Associate 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, Dahlen Workshop on Limiting The Greenhouse Effect: Options for Controlling Atmospheric CO₂ Accumulation, Berlin, Dec. 9-14, 1990.
- Invited Speaker, Office for Interdisciplinary Earth Studies Of UCAR Organized 1994 Global Change Institute on *Integrated Assessment of Climate Change*, Snowmass, CO, July 20-29, 1994.
- Invited Speaker, Energy Modeling Forum-14 working group meeting on *Integrated Assessment of Global Climate Change*, Washington D.C., June 2-3, 1994.
- Invited Expert, Department of Energy (DOE) workshop on *Integrated Assessment: Characterizing Key Policy Issues*, June 28-29, 1994.
- Invited Speaker, *Tsukuba Global Carbon Cycle Workshop*, Tsukuba, Japan, Feb. 1-3, 1995.
- Session Chair, Fall 1995 American Geophysical Union (AGU) Meeting titled Global Carbon Cycle's Role in Global Change II, Dec. 11-15, 1995.
- Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report "Climate Change 1994: Radiative Forcing of Climate Change", 1995.
- Invited Speaker, Energy Modeling Forum-14 working group meeting on *Integrated Assessment of Global Climate Change*, IIASA, Austria, March 21-23, 1996.
- 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.
- Invited Author, UN Intergovernmental Panel on Climate Change (IPCC) Report "*Climate Change 1995: The Science of Climate*", 1996.
- 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.
- 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.
- 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.
- Listed in "*Who's Who in America*", January 1997-present
- 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.
- Invited Expert, 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 Speaker, The Aspen Global Change Institute international meeting titled “*Energy Options and Paths to Climate Stability*”, Aspen, CO, July 6-11, 2003.

Invited Expert, 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, 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.

Listed in “*Who's Who in Science Higher Education*”, January 2004- present

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

Invited Speaker, Expert Meeting on *Frontier of Environmental Change Research: Climate Change Drivers, Impacts, and Policy*, Brown University, Providence, RI USA, Sept 15-16, 2005.

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

Incomplete List of Teachers Ranked as Excellent, Fall 2005, for ENVS 301: Environmental Issues Today.

Invited Expert, 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: Environmental Issues Today.

List of Teachers Ranked as Excellent, Fall 2007, for ENVS 301: Environmental Issues Today.

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.

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, Stoney Creek Inn, Moline, IL, September 27, 2007

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

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.)*.

Invited Lectures and Invited Conference Presentations

- Integrated Science Model Results, Energy Modeling Forum-14 working group meeting on *Integrated Assessment of Global Climate Change*, Stanford, CA, May 25-26, 1995.
- Use of carbon isotopes for the calibration of a global carbon cycle model, *Tsukuba Global Carbon Cycle Workshop*, Tsukuba, Japan, Feb 1-3, 1995.
- Integrated Science Assessment Model and Scenario Analysis, *Climate Change Assessment and Integrated Assessment Workshop*, Snowmass, CO, August 4-13, 1997.
- Integrated Science Assessment Model for Assessment of Climate Change, *NSF Sponsored Community Meeting on Integrated Assessment Models*, Washington DC, July 9-10, 1998.
- Integrated Assessment Models and Scenario Analysis, *EMF Workshop on Climate Change Impacts and Integrated Assessment*, Snowmass, CO, Aug 3-11, 1998.
- A Climate Policy Model for Future Scenario Analysis, *Training Workshop on Integrated Assessment Modelling for Climate Change Policy Analysis*, Ahmedabad, India, March 8-13, 1999.
- Integrated Science Model for Climate Change Assessment, *Integrated Assessment Models (IAMs) and Climate Change Policy Analysis for Asia*, Ahmedabad, India, Feb. 1-4, 2000.
- The Impact of Non-CO₂ Greenhouse gases: An Earth System Assessment Approach, Dept. of Atmospheric, Oceanic, and Space Sciences, University of Michigan, Ann Arbor, MI, Sept 2000.
- Integrated Science Assessment Model-Latest Results, *EMF Summer Workshop: Climate Change Impacts and Integrated Assessments*, Snowmass CO, July 24- August 4, 2000.
- Integrated Assessment of Climate Change, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, Jan 2001.
- Assessing the impact of GHGs using Integrated Science Assessment Model (ISAM), Department of Earth & Atmospheric Sciences, Purdue University, West Lafayette, IN, Feb 2001.
- Aerosol Radiative Forcing: Modeling and Assessment, *EMF Summer Workshop: Climate Change Impacts and Integrated Assessments*, Snowmass CO, July 30- August 3, 2001.
- The Carbon Cycle and Stabilization of Atmospheric CO₂, *An IPIECA Symposium on Long Term Carbon and Energy Management: Issues and Approaches*, Cambridge MA, USA, October 15-16, 2001.
- The Impact of Non-CO₂ Greenhouse gases: An Earth System Assessment Approach, Pacific Northwest National Laboratory, Washington, DC. May 2002.
- The Carbon Cycle and Stabilization of Atmospheric CO₂, *Intl. Conference on Climate Change and Environmental Policy*, University of Illinois @ Urbana-Champaign, Nov 11-12, 2002.
- Integrated Assessment Modeling of Climate, Carbon Cycle, and Sequestration, *The U.S. Department of Energy*, Germantown, MD, September 22, 2003
- Integrated Assessment Modeling of Climate, Carbon Cycle, and Sequestration, *Program in Ecology and Evolutionary Biology, University of Illinois at Urbana-Champaign*, IL, December 3, 2003.
- A Quick Look at the Science of the Climate Change and Impacts, *A WITY Radio Station Sponsored Meeting for the Local Farmers on Farm Progress*, Urbana, IL, January 7, 2004.
- Modeling the Combined Effects of CO₂, Climate and Land Use on the Carbon Stocks of Plants and Soils, *Joint Global Change Research Institute, University of Maryland College Park, Maryland*, MD, February 24, 2004.

- Modeling the Combined Effects of CO₂, Climate and Land Use on the Carbon Stocks of Plants and Soils, *Oak Ridge National laboratory, Oak Ridge, TN, March 25, 2004.*
- Integrated Modeling of Terrestrial Ecosystem, *The International Institute for Applied Systems (IIASA), Analysis, Laxenburg, Austria, May 5, 2004.*
- Integrated Modeling & Development of Global Emission Inventories for Key Indirect Greenhouse Gases *Western Pacific Geophysical Meeting, Honolulu, Hawaii, May 13-20, 2004.*
- Modeling Simulation of Carbon Stocks of Plants and Soil, *Land-use and Integrated Assessment Modeling (IAM) Workshop, U.S. EPA's Office of Atmospheric Programs, Washington, DC, May 24-26, 2004.*
- Land-use and Carbon Cycle, *Stanford Energy Modeling Forum Workshop on Critical Issues in Climate Change, Snowmass, Colorado, July 26 – August 5, 2004.*
- 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.*
- 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.*

Review Panels

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

Publications and Creative Works

Chapters in Books (1995-present)

- 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.
- Articles in Journals (1995-present)**
- Jain, A.K.**, H.S. Kheshgi, 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. Kheshgi, and D.J. Wuebbles, 1996: A globally Aggregated Reconstruction of Cycles of Carbon and its Isotopes, *Tellus*, 48B, 583-600.
- Kheshgi, 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. Kheshgi, 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.
- Kheshgi, 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.
- Kheshgi, 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.K. 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-Tetrafluorethyl Trifluoromethyl Ether ($\text{CF}_3\text{OCH}_2\text{FCF}_3$), *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 CO₂, *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 CO₂ 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 CO₂ 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.
- Jain, A. K.**, 2007: Estimates of Global CO emissions from open biomass burning, *Atmospheric Environment*, 41, 6931-6940.
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