

Jennie Catherine Stephens

Curriculum Vitae

Assistant Professor of Environmental Science and Policy
International Development, Community, and Environment (IDCE), Clark University
950 Main Street, Worcester, MA 01610 jstephens@clarku.edu 508 793-8846

EDUCATION

California Institute of Technology, Pasadena, CA.

Ph.D. Environmental Science & Engineering June 2002

Thesis: "Response of Soil Mineral Weathering to Elevated Carbon Dioxide" *Advisor:* Janet G. Hering

Graduate Minor in Science, Ethics and Society

Thesis: "Environmental Responsibility in Academia"
Advisors: Bill Deverell and Daniel Kevles

M.S. Environmental Engineering Science June 1998

Harvard University, Cambridge, MA

B.A.(Magna Cum Laude) Environmental Science and Public Policy June 1997

Honors thesis on innovative wastewater treatment technology

Duke University Marine Laboratory, Beaufort NC

Visiting Student - studied environmental marine science and policy Fall 1995

ACADEMIC POSITIONS

Clark University, Worcester, MA

Fall, 2005 – present

Assistant Professor of Environmental Science and Policy, Department of International Development, Community and Environment (IDCE)

- Researching socio-political factors influencing climate mitigating energy technologies, deployment of renewable energy, advancement of carbon capture and storage, and the role of higher education in implementing and advancing sustainability in society
 - Teaching graduate & undergraduate courses on climate change, energy, & sustainability science
- Research Assistant Professor at George Perkins Marsh Research Institute on the Human Dimensions of Global-Environmental Change*

Harvard Kennedy School of Government, Cambridge, MA

Research Associate, Energy Technology Innovation Policy Group, 2006 – present

Researching energy technology deployment for climate change mitigation

Post-doctoral Research Fellow, Energy Technology Innovation Policy Group Sept. 2004 – August 2005

Advisor: John P. Holdren. Climate mitigation technology and policy.

Post-doctoral Fellow, Belfer Center For Science and International Affairs July 2002 – August 2004

Advisor: E.A. Parson. Government and industry strategy in environmental policy development.

Massachusetts Institute of Technology, Cambridge, MA

Fall 2004 – Spring 2005

Visiting Lecturer – Environmental Policy Group, Dept. of Urban Studies & Planning

Boston University, Department of Earth Sciences, Boston, MA

Summer, 2003

Lecturer – Course: Environmental Earth Science

Tufts University, Medford, MA

Spring, 2003

Lecturer – Course: Climate Change: Scientific, Political, and Economic Challenges

TEACHING AT CLARK UNIVERSITY

Current Courses

EN 101 Sustainability Science: Environment, Society, and Technology (undergraduate course)
EN 103 The Sustainable University (undergraduate seminar-style, project-based course)
IDCE 30205 Climate Change, Energy and Development (graduate seminar)
IDCE 30185 Sustainability and the Role of Higher Education (graduate project-based course)
IDCE 30226 Energy & Climate Social Change Research Seminar (graduate seminar)

Other Courses Taught

IDCE 30226 Biogeochemical Cycles and Global Change (graduate course)
EN 124 Global Warming: How to respond? (first-year seminar)

SERVICE AT CLARK UNIVERSITY

Department of International Development, Community, and Environment (IDCE)

Coordinator of the Environmental Science and Policy Graduate Program, 2007 - 2010
Chair of the IDCE Communications and Community Committee 2009-2010
Environmental Science and Policy Admissions Committee, 2005-present
Environmental Science Undergraduate Steering Committee Member, March 2006 - present
Environmental Science and Policy Faculty Representative to the IDCE Student Association
IDCE International Development and Social Change Faculty Search Committee, Fall 2006

University-Wide Service

Clark University Environmental Sustainability Task Force, Appointed, April 2006–present
Faculty Steering Committee, Mosakowski Institute for Public Enterprise, Summer 2008–present
Environment Committee, Clark University Board of Trustees 2009 – present
Environmental Chemistry Faculty Search Committee 2009–2010
Clark University Judicial Board. Fall 2009 – present
Study Abroad Advisory Committee, summer 2007 – summer 2008
Compton Fellowship Committee, 2006–present
Campus Sustainability Coordinator search committee 2007 and 2010

Marsh Research Institute on the Human Dimensions of Global-Environmental Change

Geller Fellowship and Geller Annual Lecture Organizing Committee, 2005 – present
Marsh Institute Management Committee 2008 – present

Leadership Activities

- Co-organizer Difficult Dialogues Spring 2008 symposium on Climate Change 2007-2008
 - Organizer of a campus-wide Focus the Nation climate change teach-in on January 31st 2008 with 28 faculty participating representing 13 different departments/institutes at Clark, with 8 different sessions (some concurrent sessions) each with 50-100 students, faculty and community participants.
 - Co-organizer of “Shaping A Local Green Economy: A Dialogue for the Future of Worcester” November 18, 2009. 200 community members, faculty and students attended.
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HONORS AND AWARDS

National Science Foundation NSF-SES-0724257 Collaborative Research Award
“Diffusion of Emerging Energy Technologies within a State Context”
National Science Foundation REU (Research for Undergrads) Supplemental Award
Clark University Center for Excellence in Teaching and Learning (CETL)
Instructional Development Grant, 2006 & 2007
US EPA STAR Fellowship for Graduate Study, 1999 - 2002
Achievement Rewards for College Scientists (ARCS) Fellowship, 2000 - 2002
National Science Foundation (NSF) Graduate Fellowship, 1998 - 1999
Harvard College Research Fellowship and Dean's Research Award, 1996
Pforzheimer Student Fellowship, Radcliffe College, 1994 - 1995

PROFESSIONAL AFFILIATIONS

Board Membership and Advisory Committees

- Member of the Board of Directors, Bellona USA. An international NGO with a mission of promoting environmental sustainability through scientific policy analysis 2007-present
- Editorial Board Member, *Sustainability: Science, Practice, and Policy* 2006-present
- Editorial Board Member, *Journal of Environmental Studies and Sciences* 2009-present
- Advisory Committee Member, Energy Research, Development, Demonstration and Deployment (ERD³) Policy Project, Harvard Kennedy School of Government.
- Advisory Board Member: Summer of Solutions. Worcester student climate action group.

Professional Membership

American Association for the Advancement of Science (AAAS)
American Geophysical Union (AGU)
Union of Concerned Scientists (UCS)
Association for Environmental Studies and Science (AESS)
American Association of Geographers (AAG)
Emerging Energy Technologies Committee, American Society of Civil Engineers
Carbon Capture and Storage Social Research Network (C2S2RN)
International Research Group for Policy and Politics of Carbon Capture and Storage

PEER-REVIEWER FOR JOURNALS, BOOK PUBLISHERS AND GRANT AGENCIES

- Reviewer for: *Environmental Science and Technology*, *Energy Policy*, *Climatic Change*, *The Journal of Cleaner Production*, *Annals of the Association of American Geographers*, *Journal of Geography in Higher Education*, *Environmental Practice: Journal of the National Association of Environmental Professionals*, *Journal of Environmental Management*, *Environmental Politics*, *Sustainability: Science, Practice, & Policy*, *Health Education Research*, and the *World Resources Institute (WRI)* paper series.
 - Reviewer of book proposals for: *Elsevier Science and Technology Books*, *Brookings Institution Press*, and *Cambridge University Press*.
 - Reviewer for: US Department of Energy, National Science Foundation, UK Economic and Social Research Council Research Centres Competition, AAAS South Carolina Centers of Economic Excellence, King Fahd University of Petroleum & Minerals – Saudi Arabia.
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PUBLICATIONS – PEER REVIEWED JOURNAL ARTICLES

- Markusson, N., Ishii, A. **J.C. Stephens**. The Social and Political Complexities of Learning in CCS Demonstration Projects. Accepted October 2010 for publication in *Global Environmental Change*. Publication anticipated spring 2011
- Fischlein, M., Larson, J. Hall, D. M. Chaudhry, R. Peterson T.R., **Stephens, J.C.**, and Wilson, E.J. 2010. Policy stakeholders and deployment of wind power in the sub-national context: a comparison of four U.S. states. *Energy Policy* 38: 4429-4439.
- Stephens, J.C.** & S. Jiusto. 2010. Assessing Innovation in Emerging Energy Technologies: Socio-Technical Dynamics of Carbon Capture and Storage (CCS) and Enhanced Geothermal Systems (EGS) in the USA. *Energy Policy*. 38. 2020-2031
- Stephens, J.C.** & A.C. Graham. 2010. Toward an empirical research agenda for sustainability in higher education: exploring the transition management framework. *Journal of Cleaner Production*. Vol. 18. 611-618.
- Wilson, E. J. & **J.C. Stephens** 2009. Wind deployment in the U.S.: States, Resources, Policy and Discourse." *Environmental Science & Technology*, 43(24): 9063-9070
- Stephens, J. C.**, G. Rand, and L. Melnick. 2009. Wind Energy in the Media: A Comparative State-Level Analysis of a Critical Climate Change Mitigation Technology. *Environmental Communication: A Journal of Nature and Culture*. Vol. 3. No. 2 p.168-190.
- Stephens, J.C.**, E.J. Wilson, & T.R. Peterson. 2008. Socio-Political Evaluation of Energy Deployment (SPEED): An Integrated Research Framework for Analysis of Energy Technology Deployment. *Technological Forecasting and Social Change*. Vol. 75, p. 1224-1246
- Stephens, J.C.** & D.W. Keith, 2008. Assessing Geochemical Carbon Management. *Climatic Change*. Vol. 90, No. 3. p. 217-242.
- Stephens, J.C.**; M.E. Hernandez, M. Román, A.C. Graham, & R.W. Scholz. 2008. Education as a Change Agent for Sustainability in Different Cultures and Contexts. *International Journal for Sustainability in Higher Education*. Volume 9, Issue 3. p. 317-338.
- Stephens, J.C.** 2006. Growing Interest in Carbon Capture and Storage (CCS) for Climate Change Mitigation. *Sustainability: Science, Practice, and Policy*. Vol. 2, Iss. 2.
- Stephens, J.C.** and J.G. Hering. 2004. Factors Affecting the Dissolution Kinetics of Volcanic Ash Soils: Dependencies on CO₂, pH and organic acids. *Applied Geochemistry*. Vol. 19, No. 8, p. 1217-1232
- Stephens, J.C.** and J.G. Hering. 2002. Comparative Characterization of Volcanic Ash Soils Exposed to Decade-Long Elevated Carbon Dioxide Concentrations at Mammoth Mountain, California. *Chemical Geology*. Vol. 186 No. 3-4, p. 301-313

PUBLICATIONS – BOOK CHAPTERS

- Stephens, J. C.** 2009. Technology Leader, Policy Laggard: Carbon Capture and Storage (CCS) Development for Climate Mitigation in the U.S. Political Context. Chapter 2 in Caching the Carbon: The Politics and Policy of Carbon Capture and Storage. (eds) J. Meadowcroft and O. Langhelle. Edward Elgar Publishing. Cheltenham, UK. 320p
- Stephens, J.C.** 2009. Socio-political Drivers in the Development of Deliberate Carbon Storage. Chapter in Carbon Sequestration and Its Role in the Global Carbon Cycle eds. McPherson, J.M. and Sundquist, E. American Geophysical Union. Washington DC.
- Stephens, J.C.** 2006. "CCS (Carbon Capture and Storage): Research is not Enough" Chapter in The World Energy Book. Issue 2. p. 15-18. World Energy Council Publication.
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PUBLICATIONS – POLICY PERSPECTIVES

de Coninck, H., **J. C. Stephens**, B. Metz. 2009. Global Learning on Carbon Capture and Storage: A Call for Strong International Cooperation on CCS Demonstration. *Energy Policy*. Vol. 37. No. 6. p. 2161-2165.

Stephens, J.C. & A.C. Graham. 2008. Climate Science to Citizen Action: Urgent Need to Energize Non-Formal Climate Science Education. *EOS*. American Geophysical Union. Vol. 89. No. 22. p. 204-205

Stephens, J.C. & B. van der Zwaan. 2005. The Case for Carbon Capture and Storage. In *Issues in Science and Technology*. XXII, no. 1 (Fall 2005): 69-76.

Stephens, J.C. and K. Sims Gallagher. 2005. Untie Utilities Hands on Coal. Op-ed in *The Albuquerque Journal*. March 10, 2005.

PUBLICATIONS – SELECTED CONFERENCE PAPERS

Stephens, J. C. 2009. The Political Context of Carbon Capture and Storage (CCS) Advancement in the United States: A Technology Innovation Perspective. Paper presented at the *International Studies Association Annual Meeting*. February, 2009. New York, NY.

Stephens, J. C., J. M. Bielicki, and G.M. Rand. 2008. Learning about Carbon Capture and Storage (CCS); Changing Perceptions and Technology Experts. Paper Presented at the *9th International Conference on Greenhouse Gas Control Technology*. November 16-20, 2008. Washington DC.

Graham, A. C. and **J. C. Stephens** 2008. Exploring Change Toward Sustainability in Universities by Adapting Transition Management. A Paper Presented at the *5th Environmental Management for Sustainable Universities (EMSU) Conference, A New Knowledge Culture, Universities Facing Global Changes for Sustainability*. October 15-17, 2008. Barcelona, Spain.

Stephens, J.C. and P. Verma 2006 “Carbon Management and Stakeholder Perceptions in the U.S.A. and India” Proceedings of the Earth System Science Partnership Global Environmental Change Open Science Conference. November 9-12, 2006. Beijing, China

Stephens, J.C. and P. Verma. 2006 “The Role of Environmental Advocacy Groups in the Advancement of Carbon Capture and Storage (CCS)” Proceedings of the 5th Annual Conference on Carbon Capture and Sequestration. May 8-11, 2006. Alexandria, Virginia.

PUBLICATIONS – DISCUSSION/WORKING PAPERS

Stephens, J. C., M. E. Hernandez, and M.E. Boyle. 2009. Learning from University-Community Partnerships (Past and Present) for Sustainable Development. *George Perkins Marsh Institute Working Paper No. 2009-04*. Worcester, MA: Clark University.

Justo, S., **J. C. Stephens**, E. Boyd, S. McCauley. 2009. Drilling for Low-Carbon Energy Solutions: An Assessment of Two Alternatives. *George Perkins Marsh Institute Working Paper No. 2009-03*. Worcester, MA: Clark University.

Stephens, J.C. & B. van der Zwaan. 2005 CO₂ Capture and Storage (CCS): Exploring the Research, Development, Demonstration, and Deployment Continuum *Belfer Center for Science and International Affairs Discussion Paper 2005-08*. Energy Technology Innovation Policy, Harvard Kennedy School

Stephens, J.C. 2005 Coupling CO₂ Capture and Storage with Coal Gasification: Defining "Sequestration-Ready" IGCC *Belfer Center for Science and International Affairs Discussion Paper 2005-09*. Energy Technology Innovation Policy, Harvard Kennedy School, Cambridge, MA

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PUBLICATIONS – OTHER

Bielicki, J. and **J. C. Stephens** 2008. Public Perception of Carbon Capture and Storage Technology Workshop Report. *Energy Technology Innovation Policy Group Workshop Series*. Cambridge MA, Harvard Kennedy School.

Stephens, J.C. 2007. Community Engagement in a First-Year Seminar. *New England Faculty Development Consortium (NEFDC) Exchange*. Volume 17. No. 2. Spring 2007. p. 9-10

Stephens, J.C. 2005. Coal Technologies for a CO₂-Constrained World: Current Challenges of Advancing These Technologies *OGEL (Oil, Gas, Energy Law Intelligence) Special Issue on Coal*. Fall 2005.

Stephens, J.C. & D. Keith. 2005. Health, Safety and Environmental Risks of CO₂ Storage. Module 8. AND Regulatory and Legal Aspects of Carbon Storage. Module 10, in Asian-Pacific Economic Cooperation (APEC) Training Manual on CO₂ Capture and Geological Storage.

Stephens, J.C. 2002. Response of Soil Mineral Weathering to Elevated Carbon Dioxide. Ph.D. Thesis. Department of Environmental Science and Engineering, California Institute of Technology, Pasadena, CA

Stephens, J.C. 1997-98. Factors limiting the acceptance and use of innovative environmental technologies: A case study of the Solar Aquatics System™ (SAS) technology for wastewater treatment. *Journal of Environmental Systems*. Vol. 26, No. 2, p. 163-170

SELECTED PRESENTATIONS

Stephens, J.C. 2010. Exploring Framing and Social learning in Demonstration Projects of Carbon Capture and Storage (CCS). Presented at the 10th International Conference of Greenhouse Gas Control Technologies. September 20, 2010. Amsterdam, The Netherlands

Stephens, J.C. 2010. Wind and Carbon Capture and Storage in the USA: A Comparative Analysis of Sub-National Socio-Political Contexts. Invited Presentation at Tsinghua University School of Public Policy and Management. June 3, 2010. Beijing, China

Stephens, J.C. 2010. State-Level Socio-Political Context for Wind and Carbon Capture and Storage: A Comparative Analysis. American Association of Geographers (AAG) Annual Meeting. April 16, 2010. Washington DC

Stephens, J.C. 2009. The Politics of CCS Learning: Demonstration Projects and Technological Optimism Within the CCS Community. United Nations Framework Convention on Climate Change (UNFCCC) Side Event on Carbon Capture and Storage (CCS): New Research Directions on Politics, Promises and Pitfalls of CCS. COP-15. December 12, 2009. Copenhagen, Denmark.

Stephens, J.C. 2009. Comparing Socio-Technical System Dynamics of Emerging Energy Technologies: Enhanced Geothermal Systems (EGS) and Carbon Capture and Storage (CCS). Presented at the 15th Annual International Sustainable Development Research Conference. July 7, 2009. Utrecht, The Netherlands.

Stephens, J.C. 2009. Framing Wind: A Comparative State-Level Media Analysis of a Critical Climate Change Mitigation Technology. *George Perkins Marsh Institute and Jeanne X. Kasperson Research Library Spring 2009 Seminar Series*. January 29, 2009. Worcester, Massachusetts.

Stephens, J.C. 2008. Technology Over Policy: The Politics of Carbon Capture and Storage (CCS) in the U.S. Context. Presentation at the *Energy Center of the Netherlands*. October 14, 2008. Amsterdam, The Netherlands.

Stephens, J.C. 2008. The Politics of Carbon Capture and Storage (CCS) in the U.S. Context: Technology Leader but Policy Laggard. Presentation at the *University of Stavanger*, Norway. October 13, 2008. Stavanger, Norway.

SELECTED PRESENTATIONS (CONTINUED)

Stephens, J.C. 2008. State-level Discourse on Emerging Energy Technologies. Invited Presentation. *Energy Technology Innovation Policy Group Seminar Series. Belfer Center for Science and International Affairs.* Harvard Kennedy School, May 13, 2008. Cambridge, Massachusetts.

Stephens, J.C. 2008. Comparative State-level Discourse on the Potential of Carbon Capture and Storage Technology to Contribute to an Energy System Transition. Presenter and co-organizer of session on Transition Challenges in Energy and Land-Use *American Association of Geographers Annual Meeting.* April 18, 2008. Boston, Massachusetts.

Stephens, J.C. 2008. Energy Technology Deployment for Climate Change Mitigation: Socio-political Influences on Wind and Carbon Capture and Storage. Invited Speaker at *Middlebury College Environmental Studies Colloquium.* March 13th 2008. Middlebury, Vermont.

Stephens, J.C. 2008. Challenges of Integrating the Advancement of Coal Gasification Technology and CO₂ Capture and Storage (CCS) Technology. *American Association for the Advancement of Science (AAAS) Annual Meeting,* February 14-18, 2008. Boston, Massachusetts.

Stephens, J.C., M.E. Hernandez, M. Roman, J. Qian, R.W. Sholz. 2008. “*Institutions of Higher Education as Agents for Change in Advancing Sustainability in Different Cultures and Contexts*” Annual Meeting of the Alliance for Global Sustainability. January 2008. MIT, Cambridge, Mass.

Stephens, J.C. and A.C. Graham. 2008. Co-Chair of session on “Diverse Perspectives on Climate Change Education – Integrating Across Boundaries” At *National Council on Science and Environment Annual Meeting on Climate Change: Science and Solutions.* January 17, 2008. Washington DC

Stephens, J.C. 2007. Risk Perceptions of CCS: Comparative State-Level Media Analysis. *Risk Society Association Annual Meeting.* December 12, 2007. San Antonio, Texas.

Stephens, J.C. 2007. Environmental and Social Implications/Challenges of Advancing Carbon Capture and Storage (CCS) Invited speaker at *Chewonki Foundation Carbon Capture and Storage Seminar.* October 24, 2007. Wiscasset, Maine.

Stephens, J.C., E.J. Wilson, C. Mitchell. 2007. “*Deploying Emerging Energy Technologies: An Interdisciplinary Framework*”. Poster presentation at the American Association for the Advancement of Science (AAAS) annual meeting on “Science and Technology for Sustainable Well-being” February 15-19, 2007. San Francisco, California.

Stephens, J.C. & P. Verma 2006. Carbon Management Technologies and Stakeholder Perceptions in the U.S.A. and India Presented at the 2nd International Young Scientists’ Global Change Conference. November 7-8, 2006. Beijing, China. and Presented at the *Earth System Science Partnership Global Environmental Change Open Science Conference.* November 9-12, 2006. Beijing, China.

Stephens, J.C. 2005 Policy Challenges for Deploying Climate Change Mitigation Technologies Invited presentation at *Franklin W. Olin College of Engineering,* December 5, 2005. Needham, Massachusetts.

Stephens, J.C. 2005. Decision-making in Energy with Elusive Constraints on CO₂. *Environmental Policy Group, Department of Urban Studies and Planning, Massachusetts Institute of Technology.* February 8, 2005. Cambridge, Massachusetts.

Stephens, J.C., 2005. Assessing Geochemical Carbon Management. *AGU Chapman Meeting on the Science and Technology of Carbon Sequestration: Verification and Assessment of Natural and Deliberate Carbon Sinks.* 17 January 2005. San Diego, California.

Stephens, J.C. 2003. Industry and Government Strategies Related to Technical Uncertainty in Environmental Regulation: Pollution from Automobiles. Presented at the 2003 *Open Meeting on the Human Dimensions of Global Environmental Change.* October 16-18, 2003. Montreal, Canada.
