

New York University
Department of Environmental Studies
285 Mercer St., New York, NY, 10003
andrew.reid.bell@nyu.edu

Andrew Bell

EDUCATION

- 2010 **University of Michigan, Ann Arbor, Michigan, USA**
PhD in Resource Ecology and Management
Certificate in Complex Systems
- 2007 **Santa Fe Institute, Santa Fe, New Mexico, USA**
Complex Systems Summer School
- 2005 **Waseda University, Shinjuku, Tokyo, Japan**
Masters of Applied Science in Environmental Engineering
- 2002 **University of Waterloo, Waterloo, Ontario, Canada**
Bachelors of Applied Science in Environmental Engineering (Dean's Honors)

APPOINTMENTS

- 2015 - **New York University**
Department of Environmental Studies, Assistant Professor
- 2012 - 2014 **International Food Policy Research Institute**
Environment and Production Technology Division, Research Fellow
- 2012 **International Food Policy Research Institute**
Environment and Production Technology Division, Post-Doctoral Research Fellow
- 2010 - 2012 **Columbia University**
The Earth Institute, Post-Doctoral Research Scientist

PROFESSIONAL SERVICE

- 2017 - Editorial Board Member, Journal of Social Ecological Systems Modeling (launching 2018)
- 2016 - Board Member, ComSES.Net

PEER-REVIEWED JOURNAL ARTICLES

- 2017 Elizabeth Bryan, **Andrew Bell**, Claudia Ringler, and Akhter Ahmed. Increasing the Benefits to Small Producers from Crop Production in Bangladesh. *Asian Journal of Agriculture and Development* (Accepted).
- 2017 **Andrew Bell**. Informing decisions in agent-based models: A mobile update. *Environmental Modeling and Software* 93:310-321.
doi:10.1016/j.envsoft.2017.03.028
- 2016 **Andrew Bell** and Wei Zhang. Payments discourage coordination in ecosystems services provision: Evidence from behavioral experiments in Southeast Asia. *Environmental Research Letters* 11(11):114024

- 2016 **Andrew Bell**, Patrick Ward, Mary Killilea, and Md. Tamal Ensinul Haque. Real-Time Social Data Collection in Rural Bangladesh via a 'Microtasks for Micropayments' Platform on Android Smartphones. *PLOS One* 11(11):e0165924
- 2016 Azeem Shah, Arif Anwar, **Andrew Bell**, and Zia ul Haq. Equity in a tertiary canal of the Indus Basin Irrigation System (IBIS). *Agricultural Water Management* 178:201-214
- 2016 **Andrew Bell**, Patrick Ward, and Azeem Shah. Increased water charges improve efficiency and equity in an irrigation system. *Ecology and Society* 21(3):23
- 2016 **Andrew Bell**, Gregory Parkhurst, Klaus Droppelmann, and Tim Benton. Scaling up pro-environmental agricultural practice using agglomeration payments: proof of concept from an agent-based model. *Ecological Economics* 126:32-41
- 2016 Patrick Ward, **Andrew Bell**, Klaus Droppelmann, Lawrence Mapemba, and Gregory Parkhurst. Heterogeneous preferences and the effects of incentives in promoting conservation agriculture in Malawi. *Agriculture, Ecosystems, and the Environment* 222:67-79.
- 2016 **Andrew Bell**, Wei Zhang, and Keosothea Nou. Pesticide use and cooperative management of natural enemy habitat in a framed field experiment. *Agricultural Systems* 143:1:13.
- 2016 **Andrew Bell**, Nathaniel Matthews, and Wei Zhang. Opportunities for improved promotion of ecosystem services in agriculture under the WEF Nexus. *Journal of Environmental Studies and Sciences* 6(1):183-191.
- 2016 Quinn Bernier, Parvin Sultana, **Andrew Bell**, and Claudia Ringler. Water management and livelihood choices in Southwestern Bangladesh. *Journal of Rural Studies* 45:134-145.
- 2016 Jill L. Caviglia-Harris, Erin Sills, **Andrew Bell**, Daniel Harris, Katrina Mullan, and Dar Roberts. Busting the Boom-Bust Pattern of Development in the Brazilian Amazon. *World Development* 79:82-96.
- 2015 **Andrew Bell**, Derek Robinson, Ammar Malik, and Snigdha Dewal. Modular ABM development for improved dissemination and training. *Environmental Modeling and Software* 73:189–200. doi:10.1016/j.envsoft.2015.07.016
- 2015 **Andrew Bell**, Elizabeth Bryan, Claudia Ringler, and Akhter Ahmed. Land Use Policy Rice productivity in Bangladesh : What are the benefits of irrigation? *Land Use Policy* 48:1–12.
- 2015 **Andrew Bell**, M. Azeem Shah, Arif Anwar, and Claudia Ringler. What role can information play in improved equity in Pakistan's irrigation system? Evidence from an experimental game in Punjab. *Ecology and Society* 20(1): 51.
- 2015 **Andrew Bell**, Jill Caviglia-Harris, and Anthony Cak. Characterizing Land-Use Change over Space and Time: Applying Principal Components Analysis in the Brazilian Legal Amazon. *Land Use Science* 10(1):19-37.
- 2014 **Andrew Bell**, M. Azeem Shah, and Patrick Ward. Reimagining cost recovery in Pakistan's irrigation system through willingness-to-pay estimates for irrigation water from a discrete choice experiment. *Water Resources Research* 50(8):6679-6695.
- 2014 Jill Caviglia-Harris, Michael Toomey, Daniel Harris, Katrina Mullan, **Andrew Bell**, Erin Sills, and Dar Roberts. Detecting and interpreting secondary forest on an old Amazonian Frontier. *Journal of Land Use Science* 10(4):442-465.
- 2014 **Andrew Bell**, Tingju Zhu, Hua Xie, and Claudia Ringler. Climate-Water Interactions – Challenges for Improved Representation in Integrated Assessment Models. *Energy Economics* 46:510-521.

- 2013 **Andrew Bell**, Noora-Lisa Aberman, Fatima Zaidi, and Benjamin Wielgosz. Progress of Constitutional Change and Irrigation Management Transfer in Pakistan: Insights from a Net-Mapping Exercise. *Water International* 38(5):515-535.
- 2013 **Andrew Bell**, Daniel Osgood, Benjamin Cook, Kevin Anchukaitis, Geoffrey McCarney, Arthur Greene, Brendan Buckley, and Edward Cook. Paleo-climate histories improve access to index insurance. *Global Environmental Change* 23:4 774-781.
- 2013 Tanya Heikkila, Andrea Gerlak, **Andrew Bell**, and Susanne Schmeier. Adaptation by a river basin organization: three cases of trigger and adaptive response within the Mekong River Commission. *Environmental Science and Policy* 25:73-82.
- 2012 N. Pederson, **A. Bell**, E. Cook, U. Lall, N. Devineni, R. Seager, K. Eggleston, and K. Vranes (2012). Is an epic pluvial masking the water insecurity of the greater New York City region? *Journal of Climate* 326:1339-1354, doi:10.1175/JCLI-D-11-00723.1.
- 2012 Benjamin Cook, **Andrew Bell**, and Kevin Anchukaitis (2012). Snow and precipitation impacts on dry season streamflow in the Lower Mekong Basin. *Journal of Geophysical Research – Atmospheres* 117:D16116, doi:10.1029/2012JD017708.
- 2012 N. Pederson, C. Leland, B. Nachin, A.E. Hessler, **A.R. Bell**, D. Martin-Benito, T. Saladyga, B. Suran, P.M. Brown, and N. Davi (2012). Three Centuries of Shifting Hydroclimatic Regimes Across the Mongolian Breadbasket. *Journal of Agricultural and Forest Meteorology* 178-179:10-20, doi:10.1016/j.agrformet.2012.07.003.
- 2012 N. Pederson, **A. Bell**, T. Knight, C. Leland, N. Malcomb, K. Anchukaitis, K. Tackett, J. Scheff, A. Brice, B. Catron, W. Blozan, and J. Riddle. A long-term perspective on a modern drought in the American Southeast. *Environmental Research Letters* 7(1): 014034.
- 2012 **Andrew Bell**, Rick Riolo, Jacqueline Doremus, Dan Brown, Tom Lyon, John Vandermeer, and Arun Agrawal (2012). Fragmenting forests: The double edge of effective forest monitoring. *Environmental Science and Policy* 16: 20-30.
- 2012 Ethan Schoolman, Jeremy Guest, Kathleen Bush, and **Andrew Bell** (2012). Framing Sustainability: An Empirical Analysis of the Sources of Sustainability Research. *Sustainability Science* 7(1): 67-80.
- 2011 **Andrew Bell** (2011). Productivity and farm size in Rondônia: Implications for Environmental Licensing. *Ecology and Society* 16(2):7.
- 2011 **Andrew Bell**, Benjamin Cook, Kevin Anchukaitis, Brendan Buckley, and Edward Cook (2011). Repurposing climate reconstructions for drought prediction in Southeast Asia. *Climatic Change* 106:691-698.
- 2011 **Andrew Bell**, Nathan Engle, Maria Carmen Lemos (2011). How does diversity Matter? The case of Brazilian River Basin Councils. *Ecology and Society* 16(1):42.
- 2011 **Andrew Bell** (2011). Environmental Licensing and Rural Exodus: An agent-based approach to understanding ranching and land use in rural Rondônia. *Ecology and Society* 16(1):31.
- 2010 **Andrew Bell**, Maria Carmen Lemos, Donald Scavia (2010). Cattle, Clean Water, and Climate Change: Policy Choices for the Brazilian Agricultural Frontier. *Environmental Science and Technology* 44:8377-8384.

- 2010 Maria Carmen Lemos, **Andrew Bell**, Nathan Engle, Rosa Maria Formiga-Johnsson, Donald Nelson (2010). Technical Knowledge and Water Resources Management: A comparative Study of River Basin Councils, Brazil. *Water Resources Research* 46, W06523, doi:10.1029/2009WR007949.
- 2007 **Andrew Bell** (2007). The Future of Everything: The Science of Prediction (Book Review). *Ecological Complexity* 5:69-70.
- 2005 **Andrew Bell**, Akihiko Terada, Yoshiteru Aoi, Satoshi Tsuneda, Akira Hirata (2005). Comparison of Spatial Organization in Top-down- and Membrane-aerated Biofilms: A Numerical Study. *Water Science and Technology* 52(7):173-180.

BOOK CHAPTERS

- 2015 G. Villamor, P. Afiavi Dah-gbeto, **A. Bell**, U. Pradhan, and M. van Noordwijk. Gender-specific spatial perspectives and scenario building approaches for understanding gender equity and sustainability in climate-smart landscapes. In Minang, P.A., van Noordwijk, M., Freeman, O.E., Mbow, C., de Leeuw, J. and Catacutan, D. (Eds.) *Climate-Smart Landscapes: Multifunctionality in Practice*, Chapter 15, p. 211 -225. Nairobi, Kenya: World Agroforestry Centre (ICRAF).

PROPOSALS FUNDED

2015	IFPRI Pakistan Strategy Support Program – Support to irrigation water supply research	\$50,000
2014	CGIAR CSISA Program, for project “Crowdsourcing Rural Data via Android in Bangladesh” (Lead PI) (Collaboration with New York University)	\$275,000
2014	BASIS CRSP, for project “Smart Subsidies to Promote Peer Monitoring of Conservation Agriculture Compliance in Malawi” (CoPI with Weber State University; migrated to NYU in 2016) (Collaboration with Lilongwe University of Natural Resources)	\$772,000
2013	ESPA (UK), for project “Agglomeration Payments for Catchment Conservation in the Shire Valley” (Lead PI) (Collaboration with Lilongwe University of Natural Resources)	\$662,000
2013	CGIAR CRP5, for project “Mobile Agent-based Ecosystem Services in China and Southeast Asia” (Lead PI)	\$601,700
2012	3ie, for project “Impact of Creative Capacity Building of local innovators and communities on income, welfare and attitudes in Uganda. A cluster randomized control trial approach” (Col) (Collaboration with Makerere University of Uganda)	\$746,000

SELECTED AWARDS AND FELLOWSHIPS

2011	Climate Center, Columbia University, for project “Mapping climate information demand in Vietnam”	\$7,300
2009	Rackham Predoctoral Fellowship, University of Michigan	\$27,000
2009	Rackham International Research Fellowship, University of Michigan	\$7,500
2007	International Institute Research Fellowship, University of Michigan	\$2,000
2006	Graham Environmental Sustainability Fellowship, University of	\$50,000

2006	Michigan Daimler-Chrysler Fellowship in Sustainable Systems, Center for Sustainable Systems, University of Michigan	\$10,000
2005	Natural Sciences and Engineering Research Council PGS D Scholarship	\$63,000
2002	Natural Sciences and Engineering Research Council PGS A Scholarship	\$34,600
2002	Japan Ministry of Education, Culture, Sports, Science and Technology (Monbukagakusho) Graduate Fellowship 2002	¥5,415,000

INVITED TALKS

2017	Andrew Bell , Patrick Ward, Steven Davies, and Muhammad Ashfaq. Steps forward for drip irrigation in Pakistan. Invited seminar hosted by Punjab Department of Agriculture, Lahore, Pakistan, July 2017.
2016	Andrew Bell . Mobile tools for informing ABM. SESYNC Seminar Series, Annapolis, Maryland, Nov 2016.
2016	Andrew Bell . Informing decisions in agent-based models (a mobile update). International Congress on Environmental Modeling and Software, Toulouse, France, July 2016.
2016	Andrew Bell . How can we kickstart sharing in ABM development? International Congress on Environmental Modeling and Software, Toulouse, France, July 2016.
2015	Andrew Bell , Derek Robinson, Ammar Malik, and Snigdha Dewal. Modular ABM in NRM for improved dissemination and teaching. Conference on Complex Systems, Tempe, Arizona, October 2015.
2014	Andrew Bell , Greg Parkhurst, Klaus Droppelmann, Lawrence Mapemba, Tim Benton, and Paswel Marenya. Smart Subsidies for Catchment Conservation in Malawi. Shire River Basin Management Program 2 nd Meeting, Blantyre, Malawi, November 2014.
2014	Andrew Bell . The People Side of Food Security. Weber State University Food Matters Series, Ogden, Utah, October 2014.
2014	Andrew Bell , Ammar Malik, and Snigdha Dewal. The MAS Genome and Modular MAS Publication. Helmholtz Center for Environmental Research (UFZ), Leipzig, Germany, May 2014.
2014	Andrew Bell , Azeem Ali Shah, and Patrick Ward. Reimagining Cost Recovery in Pakistan's Irrigation System. University of Agriculture – Faisalabad, Faisalabad, Pakistan, April 2014.
2013	Andrew Bell , Ammar Malik, and Snigdha Dewal. The MAS Genome and Modular MAS Publication. Tansley Working Group 1, Imperial College London, UK, September 2013.
2013	Andrew Bell . Investigating Irrigation in South Asia and Sub-Saharan Africa: IFPRI Water Policy Research. Tap Project for World Water Day, UNICEF – Georgetown University, Washington, DC, March 2013.
2012	Andrew Bell . Implications of Water Scarcity on Global Agricultural Production. Soy and Grain Trade Summit, New Orleans, Louisiana, September 2012.
2011	Andrew Bell . Environmental Licensing and the Smallholder (Invited Short Paper). Association of American Geographers Annual Meeting, Seattle, USA, April 2011.

- 2007 **Andrew Bell.** O Uso de Modelos na Gestão dos Recursos Naturais e a Aplicação de Modelos Multiagentes no Plano de Recursos Hídricos para a Região Amazônica. Invited Speaker, 2nd Annual Meeting in Geomatics of the State University of Rio de Janeiro, Rio de Janeiro, December 4, 2007.

CONFERENCE PROCEEDINGS

- 2013 **Andrew Bell,** Azeem Ali Shah, Arif Anwar, and Claudia Ringler. Experimental Games in Pakistan's Irrigation Sector. International Association for the Study of the Commons Biannual Meeting, Kitafuji, Japan, May 2013.
- 2012 **Andrew Bell,** Paswel Marenaya. Groupons for conservation: a proof of concept for agglomeration payments in agricultural programs. CAPRI/CCAFS International Research Workshop on Institutions for Inclusive Climate-Smart Agriculture, Nairobi, Kenya, September 2012.
- 2011 Tanya Heikkila, Andrea K. Gerlak, **Andrew Bell,** and Susanne Schmeier. Adaptation by a river basin organization: three cases of trigger and adaptive response within the Mekong River Commission. Proceedings of the Colorado Conference on Earth System Governance, May 2011.
- 2011 **Andrew R Bell,** Benjamin I Cook, Kevin J Anchukaitis, Brendan M Buckley, Edward R Cook. Climate prediction in Southeast Asia: what we can know, and what we need to know. Proceedings of the Initiative on Climate Adaptation Research and Understanding through the Social Sciences (ICARUS), May 2011.
- 2009 **Andrew Bell,** Thiago Emanuel Possmoser, Margarida Marchetto. Os desafios para implementação dos comitês de bacia na Região Amazônica: Estudo de caso na Bacia do Rio Machado/RO. Proceedings of the 18th Biannual Brazilian Symposium on Water Resources, November 2009.
- 2009 João Paulo Papaleo Costa Moreira, Emerson Andrade de Souza, Leonardo Rosa Andrade, **Andrew Bell,** Margarida Marchetto. A pecuária extensiva e os impactos ambientais na Bacia do Rio Machado - Região Amazônica. Proceedings of the 18th Biannual Brazilian Symposium on Water Resources, November 2009.
- 2009 Carina Stre Holanda, Ingrid Alexandrina Veronez Martins, Mônica Chagas Cerqueira, **Andrew Bell,** Margarida Marchetto. Atividades agropastoris na Região Amazônica e seus impactos sobre os recursos hídricos. Proceedings of the 18th Biannual Brazilian Symposium on Water Resources, November 2009.
- 2007 Simon Angus, **Andrew Bell,** Paul Hooper, Elizabeth Mullane. A new approach to modeling social institutions using artificial neural networks. Proceedings of the 2007 Complex Systems Summer School, The Santa Fe Institute.
- 2007 **Andrew Bell,** Daniel Neilson. Limits of prediction in modeling social systems. Proceedings of the 2007 Complex Systems Summer School, The Santa Fe Institute.
- 2004 Ryuushi Moriya, **Andrew Bell,** Yoshiteru Aoi, Satoshi Tsuneda, Akira Hirata. Analysis of Population Dynamics in Wastewater Biofilms using a Cellular Automaton-based Model. Proceedings of the Society of Chemical Engineers in Japan, 69th Annual Meeting, April 2004.

OTHER PRESENTATIONS

- 2017 **Andrew Bell.** Mobile tools and Agent-based Models. ABM 17, San Diego, California, April 2017.

- 2016 **Andrew Bell**, Patrick Ward, Klaus Droppelmann, and Lawrence Mapemba. Challenges in attributing poverty alleviation to ecosystem services provision. ESP Africa Meeting, Nairobi, Kenya, November 2016.
- 2016 **Andrew Bell**, Patrick Ward, Klaus Droppelmann, and Lawrence Mapemba. Costs of avoided sediment loading in the Shire River Basin. ESP Africa Meeting, Nairobi, Kenya, November 2016.
- 2016 **Andrew Bell** and Wei Zhang. Promoting insect-based ecosystem services in smallholder landscapes. AESS Annual meeting, Washington, DC, June 2016.
- 2014 **Andrew Bell**. Informing Agent-based Models with social data for ecosystem services questions. ESPA Social Surveys Meeting, London, UK, October 2014.
- 2012 Tingju Zhu, Claudia Ringler, Tim Sulser, **Andrew Bell**, and Mohsin Iqbal. Climate change impacts on water and food in Pakistan and options for adaptation. Pakistan Strategy Support Program Annual Conference, Islamabad, Pakistan, December 2012.
- 2011 **Andrew Bell**, Benjamin Cook, Kevin Anchukaitis, Brendan Buckley, and Edward Cook. Predicting drought with tree-ring climate reconstructions in Southeast Asia. Association of American Geographers Annual Meeting, Seattle, USA, April 2011.
- 2011 Brendan M. Buckley, **Andrew Bell**, Kevin Anchukaitis, Edward Cook, Roland Fletcher, Dan Penny, Masaki Sano, Aroonrut Wichienkeo, Victor Lieberman, Mai Hong Truong, and Nam Le Canh. The Societal Impact of Southeast Asian Hydroclimate Variability Over the Past Millennium. AGU 2011 Chapman Conference on Climates, Past Landscapes, and Civilizations, Santa Fe, USA, May 2011.
- 2010 Andrew Bell. Climate Change and licensing in Rondônia: fueling a rural exodus? Association of American Geographers Annual Meeting, Washington DC, USA, April 2010.
- 2009 **Andrew Bell**. Climate-proofing Cambodia's Agricultural Development: A systems look at the net gains from agricultural intensification and diversification. 2009 Development Research Forum, Symposium on "The Contribution of Research to National Development Strategies and Policies." Phnom Penh, Cambodia, September 2009.
- 2009 Maria Carmen Lemos, **Andrew Bell**, Nathan Engle, Rosa Formiga-Johnsson, Donald Nelson. Technical Knowledge and democratic decision-making: building adaptive capacity of freshwater systems in Brazil. IOP Conf. Series: Earth and Environmental Science **6** (2009) 292015.
- 2008 **Andrew Bell**. Adaptive Governance of Water in the Brazilian Amazon: Step one – Could climate change help the Amazon? Alliance for Global Sustainability Annual Meeting 2008, MIT, Boston, USA, January 2008.
- 2003 **Andrew Bell**. Simulation of Competition in [Ammonia-oxidizing Bacteria] in Biofilms using a Pseudo-3D [Cellular Automaton]-Hybrid Model. Biofilms 2003, American Society for Microbiology, November 2003.

TEACHING EXPERIENCE

- 2015- **NYU Department of Environmental Studies** – *ENVST-UA 100 (Environmental Systems Science); ENVST-UA 350 (Energy Generation and the Environment); ENVST-UA 300 (Introduction to Environmental Modeling)*
- NYU Abu Dhabi** – *CCOL-AD 30 (Water: Rights and Resources)*
- NYU Prison Education Program** – *ENVST-UA 100 (Environmental Systems Science)*
- 2013 **Pakistan Strategy Support Program, IFPRI** – *Introduction to Systems Dynamics and Agent-based Modeling*
- 2008 **University of Michigan (Graduate Student Instructor)** – *Modeling Coupled Human-Natural Systems*
- 2006 - **University of Michigan (Graduate Student Instructor)** – *Integrated Environmental Assessment*
2008

UNIVERSITY SERVICE

- 2016 Chair, Student Disciplinary Committee, College of Arts and Sciences, New York University
- Admissions Committee and Instructor, Prison Education Program, New York University
- 2015 Undergraduate Curriculum Committee, Department of Environmental Studies, New York University
- 2013 Standing Search Committee, Development Strategy and Governance Division, IFPRI
- 2008 - Reviewer for *Ecology and Society*; *Environmental Management*; *Environment and Resource Economics*; *Environmental Modeling and Software*; *Ecological Economics*; *Sustainability*; *Environmental Conservation*; *International Journal of Sustainable Development and World Ecology*; *Journal of International Development*; *International Journal of Geographic Information Science*; *Sustainability Science*, *Food Security*, *Environmental Development*, *NSF Geography Program*, *NSF INFEWS Program*
- 2008 Promotions and Tenure Committee, School of Natural Resources and Environment. Graduate Student Representative.