

JASON M. BEDDOW
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EDUCATION

- Ph.D. Applied Economics, University of Minnesota, 2012.
M.S. Agricultural and Applied Economics, Virginia Polytechnic Institute & State University, 2000.
B.S. Agricultural and Applied Economics, Texas Tech University, 1996.

AREAS OF SPECIALIZATION

My work is focused on understanding the biological, economic and historical contexts of agricultural production and productivity, especially by applying microeconomic insights at the meso-scale to develop tractable, spatially-explicit, policy-relevant insights. My areas of specialization and interest include:

- bio-economics and spatial dynamics of agricultural production and productivity
- understanding the roles of the public and private sectors in global innovation, and
- global technological change, R&D, and science policy.

EMPLOYMENT HISTORY

- 2013–Present Research Assistant Professor of International Agriculture, Applied Economics, University of Minnesota.
- 2012–2013 Postdoctoral Research Associate (HarvestChoice). Applied Economics, University of Minnesota.
- 2005–2012 Research Assistant, Graduate School Fellow and Hueg-Harrison Fellow, Applied Economics, University of Minnesota.
- 2001–2007 Founder/Owner, iSynapse, LLC. Provided high-throughput transaction processing and web content delivery for small businesses, handling billions of micro-transactions annually for thousands of firms.
- 1999–2001 Research Associate, Virginia Tech University, Agricultural and Applied Economics.
- 1997–1999 Teaching and Research Assistant, Virginia Tech University, Agricultural and Applied Economics.
- 1994–1997 Undergraduate Teaching and Research Assistant, Texas Tech University, Agricultural and Applied Economics.
- 1992–1994 Undergraduate Assistant, Texas Tech University Farms.

APPOINTED FORMAL AFFILIATIONS

- 2015–2017 Visiting Scientist: Commonwealth Scientific and Industrial Research Organization (CSIRO), Biosecurity Division, Canberra, ACT, Australia (appointed 2015-2017).
- 2013–Present MNDrive Fellow and Global Food Scholar: Minnesota Discovery, Research and Innovation Economy (MnDRIVE), University of Minnesota (appointed 2013, indefinite).
- 2012–Present Affiliated Scientist: Biosciences Eastern and Central Africa (BecA), International Livestock Research Institute (ILRI), Nairobi, Kenya (appointed 2012-2015).
- 2012–Present Permanent Member: Stakman-Borlaug Center for Sustainable Plant Health, University of Minnesota (Member: appointed 2012-2014. Permanent member: 2015, indefinite).
- 2013–Present Fellow: International Science and Technology Practice and Policy (InSTePP) Center, University of Minnesota (appointed 2013, indefinite).
- 2012–2014 Visiting Scientist: Commonwealth Scientific and Industrial Research Organization (CSIRO), Ecosystem Sciences: Sustainable Agriculture Flagship, Canberra, ACT, Australia (appointed 2012-2014).

GRANTS, CONSULTING AND OTHER SUPPORT

Grants

- 2014 Proposal (as co-PI) for “Impact and Foresight of Wheat and Maize” to the International Maize and Wheat Improvement Center (CIMMYT), \$450,000 (successful).
- 2014 Proposal (as co-investigator) for “Public-Private Partnership for Spatial Bio-economic Information, Trait Discovery and Decision Platforms to Sustain Global Agricultural Productivity and Market Growth” to Minnesota Discovery, Research and Innovation Economy (MNDrive), \$252,628 (successful).
- 2014 Core funding (as PI):MNDrive, \$15,000.
- 2014 Proposal (as co-PI) for “Wheat Leaf Rust Global Impact Assessment” to CIMMYT, \$104,278 (successful).
- 2013 Proposal (as co-PI) to the CGIAR Research Program on Wheat (CIMMYT/ICARDA) Competitive Partner Grant for a global economic assessment of stripe rust, \$120,000 (successful).
- 2013 Core funding (as PI): MnDRIVE, \$15,000.
- 2013 Funding (as PI, salary offset) from the University of Minnesota’s Food Policy Research Center for a briefing paper on the potential impacts of climate change on agriculture, \$7,200 (successful).
- 2012 Proposal (as co-PI) on wheat varietal and genetic change, rust risk, and global food security to NIFA, \$3.8 million (unsuccessful).
- 2010 A substantial and continuing role in securing and managing the \$8.52 million BMGF-funded HarvestChoice project (as project personnel).

Consulting and Honoraria

- 2015 Honorarium from the American Enterprise Institute for an invited presentation.
- 2014 Honorarium from Elsevier for two encyclopedia chapters (one as leading author and one as co-author).
- 2013 Travel funding from the Chicago Council on Global Affairs.
- 2012 Funding from RioTinto PLC (as co-investigator).
- 2010 Microbial and Plant Genomics Institute (MPGI) Travel Grant.
- 2009 Funding from USDA via the Center for Agricultural and Rural Development (CARD) for two book chapters (one as primary author, one as co-author).
- 2009 Honorarium from the UK Department for Innovation, Universities and Skills for a report that informed a briefing to UK government officials on the 2007-2008 commodity price events.

TEACHING

Economics of Science and Technology Policy (graduate level), University of Minnesota and University of Pretoria: Fall 2013 & 2014 (substantially re-developed course). Graduate Course for the Collaborative Masters of Agricultural and Applied Economics program (part of the African Economic Research Consortium initiative for sub-Saharan African capacity development), co-listed at the University of Pretoria (South Africa) and the University of Minnesota (taught to students from across Africa via live AV link).

Applied Macroeconomics: Policy, Trade, and Development (advanced undergraduate level), University of Minnesota: Fall 2012 & 2013 (instructor), Fall 2010 & 2011 (TA).

Microcomputers in Economics, Virginia Tech University:
Fall 1997 (lecturer, independently developed and taught new course).

Microcomputers in Agriculture, Virginia Tech University:
Fall 1997 (TA: lab instructor with several guest lectures).

Computers in Agriculture, Texas Tech University:
Fall 1994 & Spring 1995 (Undergraduate TA: lab instructor with guest lectures).

AWARDS AND RECOGNITION (SELECTED)

Outstanding Reviewer, *Environmental Development* (Elsevier), 2013.

American Agricultural and Applied Economics Association award for **Quality of Communication**, honorable mention (shared with other chapter authors, 2011)

Australian Agricultural and Resource Economics Society **Quality of Research Communication Award** (shared with other chapter authors, 2010)

Hueg-Harrison Doctoral Fellowship (2008-2009)

Minnesota Doctoral Fellowship (2005-2006)

Gamma Sigma Delta (Agricultural Honorary Society)

Alpha Zeta (Agricultural Honorary/Professional Society)

PUBLICATIONS

Dissertations

- Beddow, J.M. 2012. "A Bio-Economic Assessment of the Spatial Dynamics of U.S. Corn Production and Yields." Ph.D. Dissertation, University of Minnesota, St. Paul/Minneapolis. Committee: Philip Pardey (Co-advisor, UMN), Terrance Hurley (Co-advisor, UMN), Robert King (Chair, UMN) and Stanley Wood (External Examiner, IFPRI).
- Beddow, J.M. 2000. "Protocols for the Assessment of Economic and Environmental Effects of Integrated Pest Management Programs." M.S. Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. Committee: George Norton (Advisor, VPI), Darrel Bosch (VPI), Ed Rajotte (Penn. State) and Susan Rija (Cornell).

Articles

- Beddow, J.M. and P.G. Pardey. 2015. "Moving Matters: The Effect of Location on Crop Production." *Journal of Economic History* (accepted, in press).
- Kriticos, D.J., N. Ota, W.D. Hutchison, J.M. Beddow, T. Walsh, W.T. Tay, S.V. Paula-Moreas, C. Czapak and M.P. Zaluki. 2015. "The Potential Distribution of Invading *Helicoverpa armigera* in North America: Is it Just a Matter of Time?" *PLoS One* (accepted, in press).
- Pardey, P.G., J.M. Beddow, T.M. Hurley, T.K.M. Beatty, V.R. Eidman. 2014. "A Bounds Analysis of World Food Futures: Global Agriculture Through to 2050." *Australian Journal of Agricultural and Resource Economics* 58(4): 571-589.
- Pardey, P.G., J.M. Beddow and Steven T. Buccola. 2014. "Losing the Plot? Agricultural Research Policy and the 2014 Farm Bill." *Choices* 29(3): 1-5.
- Pardey, P.G., J.M. Beddow, D.J. Kriticos, T.M. Hurley, R.F. Park, E. Duveiller, R.W. Sutherst, J.J. Burdon and D. Hodson. 2013. "Rethinking and Right-Sizing Global Stem Rust Research." *Science* (340): 147-148.
- Alston, J.M., J.M. Beddow and P.G. Pardey. 2010. "Food Commodity Prices in the Long Run: The Crucial Role of Agricultural Research and Productivity." *Eurochoices* 9(3):36-42.
- Beddow, J.M., P.G. Pardey and J.M. Alston. 2009. "The Shifting Global Patterns of Agricultural Productivity." *Choices* 24(4).
- Alston, J.M., J.M. Beddow and P.G. Pardey. 2009. "Agricultural Research, Productivity, and Food Prices in the Long Run." *Science* (325): 1209-1210.
- Alston, J.M., J.M. Beddow and P.G. Pardey. 2008. "Agricultural Research, Productivity, and Food Commodity Prices." *Agricultural and Resource Economics Update* 12(2): 11-14.
- Beddow, J.M., E. Elam and M. Lopez. 1997. "The Cotton Wizard: A Quantitative Decision Tool for Cotton Variety Selection." *Cotton Ginning Journal* (1997-98): 48-53.

Book Chapters

- Beddow, J.M., T.M. Hurley, P.G. Pardey and J.M. Alston. 2014. "Food Security: Yield Gap." Chapter in *Encyclopedia of Agriculture and Food Systems*. New York: Elsevier.

- Pardey, P.G., C. Chan-Kang, S. Dehmer, J.M. Beddow, T.M. Hurley and X. Rao. 2014. "Investments in and the Economic Returns to Food and Agricultural R&D Worldwide." Chapter in *Encyclopedia of Agriculture and Food Systems*. New York: Elsevier.
- Beddow, J.M., J. Koo, P.G. Pardey and S. Wood. 2010. "The Changing Landscape of Global Agriculture." Chapter in J.M. Alston, B.A. Babcock and P.G. Pardey, eds., *The Shifting Patterns of Agricultural Production and Productivity Worldwide*. Ames, IA: Iowa State University, Center for Agricultural and Rural Development. (Note: Book received the 2010 Australian Agricultural and Research Economics Society **Quality of Research Communication Award**, and 2011 honorable mention, American Agricultural and Applied Economics Association Quality of Communication Award).
- Alston, J.M., J.M. Beddow and P.G. Pardey. 2010. "Global Patterns of Crop Yields, Prices and Other Practical Productivity Measures and Prices." Chapter in J.M. Alston, B.A. Babcock and P.G. Pardey, eds., *The Shifting Patterns of Agricultural Production and Productivity Worldwide*. Ames, IA: Iowa State University, Center for Agricultural and Rural Development. (Note: Book received the 2010 Australian Agricultural and Research Economics Society **Quality of Research Communication Award**, and 2011 honorable mention, American Agricultural and Applied Economics Association Quality of Communication Award).

Formal Reports and Monographs (selected)

- Chai, Y., D.J. Kriticos, J.M. Beddow, E. Duveiller and R.W. Sutherst. 2014. "Wheat Stripe Rust." *HarvestChoice Pest Geography*, St. Paul and Canberra: University of Minnesota and Commonwealth Scientific and Industrial Research Organisation.
- Beddow, J.M. and Y. Chai. 2014. "Wheat Stem Rust Vulnerability." Chapter in *Atlas of African Agriculture, Research and Development*. IFPRI: Washington, D.C.
- Pardey, P.G., J.M. Beddow, T.M. Hurley, T.K.M. Beatty, and V.R. Eidman. 2014. "The International Agricultural Prospects Model: Assessing Consumption and Production Futures through 2050 (Version 2.1)." *Staff Paper P14-9*. St. Paul, MN: University of Minnesota, Department of Applied Economics.
- Pardey, P.G., J.M. Beddow, and T.M. Hurley. 2014. "World Food Futures to 2050." *InSTePP Brief*. St. Paul, MN: St. Paul, MN: International Science and Technology Practice and Policy (InSTePP).
- Chai, Y., J.M. Beddow, R.W. Sutherst, E. Duvillier and D.J. Kriticos. 2013. "Wheat Stem Rust." *HarvestChoice Pest Geography*, St. Paul and Canberra: University of Minnesota and Commonwealth Scientific and Industrial Research Organisation.
- Beddow, J.M., T.M. Hurley, D.J. Kriticos and P.G. Pardey. 2013. "Measuring the Global Occurrence and Probabilistic Consequences of Stem Rust." *HarvestChoice Technical Note*: Saint Paul and Washington, DC.
- Pardey, P.G. and J.M. Beddow. (2013). *Agricultural Innovation: The United States in a Changing Global Reality*. Chicago Council on Global Affairs Report: Chicago.
- Beddow, J.M., P.G. Pardey and M. Seeley. 2012. "Changing Agricultural Climate: Implications for Innovation Policies." *Food Policy Research Center Brief*, St. Paul: University of Minnesota.

- Beddow, J.M., Kriticos, D.K., Pardey, P.G. and R.W. Sutherst. 2010. *Potential Global Crop Pest Distributions Using CLIMEX: HarvestChoice Applications*. HarvestChoice Working Paper: Saint Paul and Washington, DC.
- Alston, J.M., J.M. Beddow and P.G. Pardey. 2009. *Mendel versus Malthus: Research, Productivity and Food Prices in the Long Run*. Department of Applied Economics Staff Paper No. P09-01, St. Paul: University of Minnesota.
- Pardey, P.G., S. Dehmer and J.M. Beddow. 2007. *Long Gone Lake Wobegon? The State of Investments in University of Minnesota Research*. InSTePP Report, St. Paul: University of Minnesota.
- Beddow, J.M., E. Jones, D. Lamie, K. Mundy and D. Chalmers. 2001. *The Economics of Turfgrass in the Commonwealth of Virginia*. Virginia Experiment Station Bulletin No. 01-2. Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Norton, G.W., S.M. Swinton, S. Riha, J.M. Beddow, M. Williams, A. Preylowski, L. Levitan and M. Caswell. 2001. "Impact Assessment of Integrated Pest Management Programs." Department of Agricultural and Applied Economics Staff Paper, Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Beddow, J.M., J. Alwang and B. Mills. 2000. "The Contribution of Virginia Tech to the Regional Economy." Report to the Department of University Relations, Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Beddow, J.M., E. Elam, and M. Lopez. 2000. "The Cotton Wizard: A Software Implementation of a Cotton Variety Selection Model." Cotton Economics Research Report No. CER-00-14. Lubbock, TX: Texas Tech University.
- Lopez, M.F., E.W. Elam and J.M. Beddow. 2000. "User's Manual for the Cotton Wizard: A Cottonseed Variety Selection Model (Version 2.1)." Cotton Economics Research Report No. CER-00-12. Lubbock, TX: Texas Tech University.
- Beddow, J.M., E. Elam and M. Lopez. 1997. "The Cotton Wizard: A Quantitative Tool for Cotton Variety Selection." In P. Dugger and D.A. Richter, eds., *1997 Beltwide Cotton Conferences Proceedings*. Memphis, TN: National Cotton Council.

Papers Under Review or Imminent

- "Long-run and Global R&D Funding Trajectories: The U.S. Farm Bill in a Changing Context." With P.G. Pardey, C. Chan-Kang and S. Dehmer (submitted, in revision).
- "Critical Uncertainties in Key Global Climatic Datasets Undermine Thousands of Studies." With D.J. Kriticos, N. Ota and B.L. Webber. (submitted, under review).
- "Biological Obsolescence: Stripe Rust and Global Wheat Production." With P.G. Pardey, Y. Chai, T.M. Hurley, H.J. Braun and D.J. Kriticos. (in pre-submission).
- "Bio-Economic Weather and Crop Productivity." With P.G. Pardey and T.M. Hurley. (in pre-submission).
- "Weather in Statistical Models of Agricultural Productivity." With P.G. Pardey. (in pre-submission).

“Wheat Stripe Rust.” *HarvestChoice Pest Geography*. With Y. Chai, T.M. Hurley, D.J. Kriticos and P.G. Pardey (in process).

PRESENTATIONS

Formal Presentations and Panels (only lists as presenter)

“Long-run and Global R&D Funding Trajectories: The U.S. Farm Bill in a Changing Context.” 2015. Allied Social Science Associations annual meeting, Boston (invited panelist).

“Stripe Rust: The Global Occurrence and Economic Consequences.” 2014. Presented at the Annual Pest Risk Mapping Workshop, Canberra, Australia (invited).

“Reassessing the Effects of Climate on Crop Yields.” 2014. Annual meeting of the American Agricultural Economics Association (AAEA), Minneapolis (selected paper).

“Spatial Movement in African Agriculture.” 2014. 18th Conference of the International Consortium on Applied Bioeconomy Research (ICABR): Bioeconomy and Development.” Nairobi (invited).

“Impact Assessment Analysis to Support International Agricultural Research Funding Decisions: New Methodologies and Applications.” 2013. ICRISAT Organized Symposium at the 57th Annual Meeting of the Australian Agricultural and Resource Economics Society, Sydney (invited panelist).

“Moving Matters: The Effect of Location on Crop Production.” 2013. Presented at the 57th Annual Meeting of the Australian Agricultural and Resource Economics Society, Sydney (selected paper).

“Shifting Patterns of Agricultural Production and Productivity Worldwide.” 2010. Organized Symposium at the 54th Annual Meeting of the Australian Agricultural and Resource Economics Society, Adelaide, South Australia (invited panelist).

“Shifting Patterns of Agricultural Production Worldwide.” 2009. Organized Symposium at the American Agricultural and Applied Economics Association annual meetings, Milwaukee, Wisconsin (invited panelist).

“New Data Sources for Research on Agricultural Development.” 2009. Organized Symposium at the American Agricultural and Applied Economics Association annual meetings, Milwaukee, Wisconsin (invited panelist).

“Space, Time and Maize Production.” 2009. Presented at the 53rd Annual Meeting of the Australian Agricultural and Resource Economics Society, Cairns, Queensland (selected paper).

“V-GET: A New Web-Based Tool for Collecting Spatial Pest Occurrence Data.” 2008. Presented at the Second Annual Pest Risk Mapping Workshop, Minneapolis, Minnesota (selected paper).

“The Context of a Land Grant University in the Local Economy.” 2000. American Agricultural Economics Association (AAEA) annual meetings, Tampa, Florida (selected poster).

“The Cotton Wizard: A Quantitative Tool for Cotton Variety Selection.” 1997. Presented at the Beltwide Cotton Conference, Memphis, Tennessee (selected paper).

“Using the World Wide Web in Teaching, Extension, and Research.” 1996. Organized Symposium at the American Agricultural Economics Association annual meetings, San Antonio, Texas (invited panelist).

Other Presentations and Panels (only lists as presenter)

“A Re-examination of Weather in Crop Productivity.” 2015. American Enterprise Institute, Emerging Leaders Forum, Washington, D.C. (invited, forthcoming).

“Spatial Bioeconomic Modeling.” 2014. International Maize and Wheat Improvement Center (CIMMYT) seminar. El Batán, Mexico (seminar).

“Leveraging Disruptive Technologies to Further Ignite Agriculture in Emerging Markets.” 2014. Chicago Council on Global Affairs. San Francisco, CA (invited panelist).

“Biotic Crop Constraints in Bio-economic CLIMEX-Based Models.” 2014. Embrapa Agropensa Seminar, Brasília, Brazil (seminar).

“Moving Matters: Weather, Location and Crop Yields.” 2014. Embrapa Agropensa Seminar, Brasília, Brazil (seminar).

“New Perspectives on Sustaining Agricultural Productivity Growth.” 2013. CHS New Leaders Forum, Minneapolis (invited, with T.M. Hurley and P.G. Pardey).

“Business Unusual: Deploying Agriculture and Food Research and Innovations in the Global Food System.” 2013. Chicago Council on Global Affairs Innovation Roundtable. Cambridge, MA (invited panelist).

“Reinventing U.S. Public Agriculture and Food Research: Designing a Research, Education and Extension System for a Globalized and Dynamic World.” 2013. Chicago Council on Global Affairs Innovation Roundtable. Chicago, IL (invited panelist).

“Agriculture and Food Research in a Globalized World: The Role of International Coordination and Research in Meeting Future Challenges.” 2013. Chicago Council on Global Affairs Innovation Roundtable. Washington, DC (invited panelist).

“A science and Innovation Strategy for Food Security.” 2013. Chicago Council on Global Affairs Private Forum. Washington, DC (invited panelist).

“Use of the World Wide Web for Economics Research and Teaching.” 1996. Departments of Economics and Agricultural and Applied Economics Joint Seminar Program, Texas Tech University, Lubbock, TX.

Media (selected)

“Minnesota Continues Legacy of Fighting World Hunger.” Big Ten Network *Live Big*, 2015.

“Banking on Food Security.” *CFANS News*, 2014.

“How Science Can Help Track Threats to Global Food Supplies.” *CFANS News*, Feb. 23, 2012.

“Feeding the World: The 9 Billion-People Question.” *The Economist* magazine special Report on Feeding the World, February 26, 2011, pp. 3-16.

“U-M Study: R&D, Ag Productivity Growth Impact Food Prices.” *The Farmer*, October, 2009, p. 6.

“What Price More Food?” *New Scientist*, June 11, 2008, pp. 28-33 (graphs and text, pp. 29-30 &33).

“Benefits of Sweet Corn IPM Valued in the Millions.” *Penn State Live*, October 11, 2002.

SERVICE

Departmental Service

2014-2015 APEC Gradate Program Committee and APEC Awards Committee
2013-2014 APEC IT Committee and APEC Communications Committee
2008-2009 APEC Program Priorities Committee
2007-2008 APEC Graduate Program Committee (student representative), PEC Ph.D.
Student Representative
2006-2008 APEC Office Space Coordinator

University Service

2014-2015 Faculty Representative.: University Senate, Research Committee, Research
Openness Subcommittee
2012-2013 P&A Representative: University Senate, Research Committee, Research
Openness Subcommittee

Reviewer

IAAE Selected Paper Sessions, AAEA Selected Paper Sessions (various years), *American Journal of Agricultural Economics*, *Environmental Development*, *Global and Planetary Change*, *Journal of Agricultural and Applied Economics*, *PLoS One*, *U.N. Food and Nutrition Bulletin*, *New Zealand Journal of Agricultural Research*.

Member

American Economic Association, American Agricultural and Applied Economics Association, Australian Agricultural and Resource Economics Society, Economic History Association

PERSONAL

I volunteer for Big Brothers Big Sisters, the Minnesota Volunteer Organizations Active in Disaster (MNVOAD), and have worked extensively with Midwest Animal Rescue Services.