

Curriculum Vitae

George B. Frisvold

Education

- Ph.D., 1989 University of California, Berkeley, Agricultural and Resource Economics
- B.S., 1983 University of California, Berkeley, Political Economy of Natural Resources

Professional Experience

2002-present	Professor and Extension Specialist , Department of Agricultural and Resource Economics, The University of Arizona, Tucson, AZ.
1997-2002	Associate Professor and Extension Specialist , Department of Agricultural and Resource Economics, The University of Arizona, Tucson, AZ.
1996-97	Branch Chief , Resource and Environmental Policy Branch, Natural Resources and Environment Division, Economic Research Service, USDA, Washington, DC.
1995-96	Senior Economist , President's Council of Economic Advisers, Executive Office of the President, Washington, DC.
1994	Lecturer , Department of Geography and Environmental Engineering, G.W.C. Whiting School of Engineering, The Johns Hopkins University, Baltimore, MD.
1989-95	Agricultural Economist , Resources and Technology Division, Economic Research Service, USDA, Washington, DC.
1987-9	Giannini Foundation Post-Graduate Agricultural Research Economist , Department of Agricultural and Resource Economics, University of California, Berkeley
1986-87	Visiting Research Scholar , Department of Extension and Technology Transfer, National Institute of Rural Development, Hyderabad, India.

Honors / Awards

2003	Fellow, Rural Development Research Consortium
1997	Society for Technical Communication, Technical Communication Award for Scholarly / Professional Articles for Day, K. and G. Frisvold . "Cooperative Research Bolsters War on Cancer." <i>Forum for Applied Research and Public Policy</i> 11(1996), 60-64.
1996	Letter of appreciation from President William Jefferson Clinton for economic analysis of Everglades restoration policies
1992	USDA Economic Research Service Administrator's Special Merit Award for Superior Service for Outstanding Publications on Public Research Investment
1992	USDA Certificate of Appreciation for Sustained Superior Performance and Contributions to the Resources and Technology Division
1991	USDA Certificate of Merit Award for Extraordinary and Exemplary Performance in the Program of the Resources and Technology Division
1991	USDA Certificate of Merit Award for Mentoring Minority Employees
1991	USDA Certificate of Merit Award for Staff Analysis

Service to Professional and Governmental Organizations

Co-Editor, *Review of Agricultural Economics*, 2004-present.
Editorial Board Member, *AgBioForum*, 2004-present
American Agricultural Economics (AAEA) membership committee, 2005-present.
Co-Editor, *Journal of Agricultural and Resource Economics*, 2001-3.
Associate Editor, *American Journal of Agricultural Economics*, 2000-2.
Editorial Board Member, *Choices*, 1998-2000.
AAEA nominations committee. Member. 2001-3.
AAEA selection committee for Quality of Communications Award. Member. 1999.
Chair of Western Agricultural Economics Association Selection Committee for 2002
“Outstanding Extension Career in Agricultural Economics” and “Outstanding Extension
Program in Agricultural Economics” Awards.
Book manuscript reviewer for the Harvard Studies in International Development Series, 2000.
From 2000-7, reviewed manuscripts for: *Advances in the Economics of Environmental
Resources*, *AgBioForum*, *Agricultural Economics*, *Agricultural and Resource Economics
Review*, *American Journal of Agricultural Economics*, *Annual Review of Energy and
Environment*, *Choices*, *Contemporary Economic Policy*, *Crop Protection*, *Climate
Research*, *Climatic Change*, *Environment and Development Economics*, *Environmental
and Resource Economics*, *GeoForum*, *Geosciences*, *International Economic Review*,
Journal of Agricultural and Applied Economics, *Journal of the American Water Resources
Association*, *Journal of Cotton Science*, *Journal of Environmental Economics and
Management*, *Journal of Environmental Management*, and *World Development*.

Intramural Service

Chair, Advisory Board, The Jimmie S. and Helen F. Hillman Endowment for the Exchange of
Scholars, University of Arizona.
Chair, Graduate Committee, Department of Agricultural and Resource Economics, University
of Arizona.
Member, Committee on Global Change. The Committee, within the Interdisciplinary Program
of the Graduate College, administers the University of Arizona's Ph.D. minor on global
change.

Publications

Books

Frisvold, G. and B. Kuhn. (eds.) *Global Environmental Change and Agriculture*.
Northampton, MA: Edward Elgar. 1999.

Chapters in Books and Monographs

Frisvold, G. and M. Caswell. A Bargaining Model of Water Quality and Quantity. In *Water
Quantity / Quality Management and Conflict Resolution*. Ariel Dinar and Edna Loehman
(eds.) Westport, CT: Praeger. 1995.

Frisvold, G. Multimarket Effects of Agricultural Research with Technological Spillovers. In
Global Trade Analysis. Tom Hertel (ed.) Cambridge: Cambridge University Press. 1997.

Frisvold, G. and M. Caswell. Transboundary Water Agreements and Development
Assistance. In *Decentralization and Coordination in Water Resource Management*. D. Parker
and Y. Tsur (eds.) Norwell, MA: Kluwer Academic Publishers. 1997.

Chapters in Books and Monographs (continued)

Tsigas, M., **G. Frisvold**, and B. Kuhn. Global Climate Change and Agriculture. In *Global Trade Analysis*. Tom Hertel (ed.) Cambridge: Cambridge University Press. 1997.

Frisvold, G. and D. Schimmelpfennig. Potential for Sustainability and Self-Enforcement of Trans-Boundary Water Agreements. In *Conflict and Cooperation on Trans-Boundary Water Resources*. R. Just and S. Netanyahu (eds.). Norwell, MA: Kluwer Academic Publishers. 1998.

Just, R., **G. Frisvold**, V. Harrison, J. Oppenheimer, and D. Zilberman. Using Bargaining Theory and Economic Analysis as an Aid to Trans-boundary Water Cooperation. In *Conflict and Cooperation on Transboundary Water Resources*. R. Just and S. Netanyahu (eds.). Norwell, MA: Kluwer Academic Publishers. 1998.

Winters, P., R. Murgai, A. de Janvry, E. Sadoulet and **G. Frisvold**. Climate Change and Agriculture: Effects on Developing Countries. In **Frisvold, G.** and B. Kuhn. (eds.) *Global Environmental Change and Agriculture*. Northampton, MA: Edward Elgar. 1999.

Erda, L., C. Clemente, **G. Frisvold**, K. Minami, O. Doering, N. Sampson, P. Waggoner. Agricultural Sector. In *Methodological and Technological Issues in Technology Transfer: A Special Report of IPCC Working Group III*. B. Metz, O. Davidson, J. Martens, S. van Rooijen, and L. V. McGrory. Cambridge: Cambridge University Press. 2000.

Frisvold, G. and S. Vogel. Financing Agricultural Research with Prior Distortionary Taxes and Subsidies. In *Public-Private Collaboration in Agricultural Research*. K. Fuglie and D. Schimmelpfennig (eds.). Ames, IA: Iowa State University Press. 2000.

Leones, J. and **G. Frisvold**. Park Planning Beyond Park Boundaries: A Grand Canyon Case Study. In *National Parks and Rural Development: Practice and Policy in the United States*. G. Machlis and D. Field (eds.) Washington, DC: Island Press. 2000.

G. Frisvold and M. Caswell. Planning and Financing Water Projects on the U.S.- Mexico Border: The Economics of Cooperation. In *Both Sides of the Border: Transboundary Environmental Management Issues Facing Mexico and the United States*. L. Fernandez and R. Carson (eds.). Boston: Kluwer Academic Publishers. 2002.

Frisvold, G. and R. Tronstad. Economic Impacts of Bt Cotton Adoption in the United States. In *Economic and Environmental Impacts of Agbiotech: A Global Perspective*. N. Kalaitzandonakes (ed.). New York: Kluwer-Plenum Academic Publishers. 2002.

Frisvold, G. and J. S. Hillman. Inspection, Quarantine and Quality Control. *Encyclopedia of Life Support Systems*. New York: UNESCO. 2002.

Frisvold, G. Agriculture, Federal Farm Programs and Water Use in the Western United States. In *Negotiating Tribal Water Rights: Fulfilling Promises in the Arid West*. B.G. Colby, J.E. Thorson, and S. Britton (eds.). Tucson: University of Arizona Press. 2005, pp. 20-23.

Frisvold, G. Bt Resistance Management: The Economics of Refuges. In *Economics of Regulation of Agricultural Biotechnologies*. R. Just, D. Zilberman, and J. Alston (eds.). Norwell, MA: Springer. 2006.

Frisvold, G., P. Wilson, and R. Needham. Implications of Federal Farm Policy and State Regulation for Agricultural Water Use. In B. Colby and K. Jacobs (eds). *Arizona Water Policy: Management Innovations in an Urbanizing, Arid Region*. Washington, DC: Resources for the Future Press. 2006.

Chapters in Books and Monographs (continued)

Frisvold, G., R. Tronstad, and J. Reeves. In *International Trade and Policies for Genetically Modified Products*. R. E. Evenson and V. Santaniello (eds.) Wallingford, Oxfordshire, UK: CABI Publishing. 2006.

Frisvold, G. and K. Emerick. Rural-Urban Water Transfers with Applications to the U.S.-Mexico Border Region. In A. Dinar, J. Albiac, and J. Sanchez-Soriano (eds.) *Game Theory and Policy Making in Natural Resources and the Environment*. New York: Routledge Press. (in press).

Journal Articles

Frisvold, G., R. Mines and J. Perloff. Effects of Job Site Sanitation and Living Conditions on the Health and Welfare of Agricultural Workers. *American Journal of Agricultural Economics* 70(1988), 873-885.

Frisvold, G. Emerging Issues in the Allocation of Public Agricultural Research Funds. *American Journal of Agricultural Economics* 73(1991), 876-881.

Day, K. and G. **Frisvold**. Medical Research and Genetic Resources Management: the Case of Taxol. *Contemporary Policy Issues* 11(1993), 1-11.

Day, K. and G. Frisvold. What Happened to Natural Resources and Environmental Research in the US? *Evolutionary Trends in Plants* 1 (1993), 1-4.

Frisvold, G. Does Supervision Matter? Some Hypothesis Tests Using Indian Farm-level Data. *Journal of Development Economics* 43(1994), 217-238.

Frisvold, G. and P. Condon. Biodiversity Conservation and Biotechnology Development Agreements. *Contemporary Economic Policy* 12(1994), 1-9.

Westenbarger, D. and **G. Frisvold**. Agricultural Exposure to Ozone and Acid Precipitation. *Atmospheric Environment* 28(1994), 2895-2907.

Frisvold, G. and P. Condon. The Convention on Biological Diversity: Implications for Agriculture. *Technological Forecasting and Social Change* 50(1995), 41-54.

Frisvold, G. and K. Ingram. Sources of Agricultural Productivity Growth and Stagnation in Sub-Saharan Africa. *Agricultural Economics* 13(1995), 51-61.

Westenbarger, D. and **G. Frisvold**. Air Pollution and Farm-Level Crop Yields: An Empirical Analysis of Corn and Soybeans. *Agricultural and Resource Economics Review* 24(1995), 156-165.

Day, K. and **G. Frisvold**. Cooperative Research Bolsters War on Cancer. *Forum for Applied Research and Public Policy* 11(1996), 60-64.

Larson, B. and **G. Frisvold**. Fertilizer Use in Sub-Saharan Africa: What is Needed and Why. *Food Policy* 21(1996), 509-525.

Larson, B. and **G. Frisvold**. Uncertainty over Future Environmental Taxes: Impacts on Current Investment in Resource Conservation. *Environmental and Resource Economics* 8(1996), 461-471.

Frisvold, G. and P. Condon. The Convention on Biological Diversity and Agriculture: Implications and Unresolved Debates. *World Development* 26 (1998), 551-70.

Winters, P., R. Murgai, A. de Janvry, E. Sadoulet and **G. Frisvold**. Economic and Welfare Impacts of Climate Change on Developing Countries. *Environmental and Resource Economics* 12 (1998), 1-12.

Frisvold, G., K. Fuglie, and C. Klotz-Ingram. Growth of Private Agricultural Research. *Choices* 13(1998), 22-3.

Frisvold, G. J. Sullivan, and A. Ranases. Who Benefits from Genetic Improvements in U.S. Crops? *AgBioForum* 2 (1999), 226-35.

Day-Rubenstein, K., M. Stuart, and **G. Frisvold**. Agricultural Land Use in Tropical Countries: Patterns, Determinants, and Implications for Biodiversity Loss. *World Resources Review* 12 (2000), 621-650.

Frisvold, G. Data, Information, and Rural Environmental Policy: What Will the Next Ten Years Bring? *Review of Agricultural Economics* 22 (2000), 238-45.

Frisvold, G. and M. Caswell. "Transboundary Water Management: Game-theoretic Lessons for Projects on the U.S.– Mexico Border," *Agricultural Economics* 24 (2000), 101-111.

Day-Rubenstein, K. and **G. Frisvold**. Genetic Prospecting and Biodiversity Development Agreements. *Land Use Policy* 18 (2001), 205-219.

Frisvold, G., K. Fernicola, and M. Langworthy. Market Returns, Infrastructure and the Supply and Demand for Extension Services. *American Journal of Agricultural Economics* 83 (2001), 758-763.

Frisvold, G. and D. Osgood. Financing Wastewater Collection and Treatment on the U.S.-Mexico Border. *Water Resources Update* 121 (2001), 40-49.

Frisvold, G. and D. Osgood. Ambos Nogales: A Tale of Two Cities and Water Management on the U.S.-Mexico Border. *Journal of Law and Border Studies* 2 (2002), 7–36.

Day-Rubenstein, K. P.W. Heisey, C. Klotz-Ingram, and **G. Frisvold**. Competitive Grants and the Funding of Agricultural Research in the U.S. *Review of Agricultural Economics* 25 (2003), 352-368.

Frisvold, G., J. Sullivan, and A. Ranases. Genetic Improvements in Major U.S. Crops: The Size and Distribution of Benefits. *Agricultural Economics* 28 (2003), 109-199.

Frisvold G. How Federal Farm Programs Affect Water Use, Quality, and Allocation among Sectors. *Water Resources Research* 40 (2004), Art. No. W12S05.

Frisvold, G., J.M. Reeves, and R. Tronstad. Bt Cotton Adoption in the United States and China: International Trade and Welfare Effects. *AgBioForum*, 9 (2006), 69-78.

Huffman, W.E., G. Norton, G. Traxler, **G. Frisvold**, and J. Foltz. Winners and Losers: Formula versus Competitive Funding of Agricultural Research. *Choices*, 24 (2006), 269-274.

Frisvold, G. and J.M. Reeves. The Costs and Benefits of Refuge Requirements: The Case of Bt Cotton. *Ecological Economics*, (2007 In Press).

Extension Publications

Frisvold, G. NAFTA: After Three Years, Impacts Still Small. *Community Development Issues*. 5(1998), 6-8, Tucson, AZ: University of Arizona Cooperative Extension.

Frisvold, G., R. Tronstad, and J. Mortensen. Economic Impacts of Bt Cotton Adoption: A National and Regional Assessment. *2000 Arizona Cotton Report*, University of Arizona, College of Agriculture. 2000.

G. K. Agnew, **Frisvold, G.** and P. Baker. Use of Insect Growth Regulators and Changing Whitefly Control Costs in Arizona Cotton. *2000 Arizona Cotton Report*, University of Arizona, College of Agriculture. 2000.

Ayer, H., **G. Frisvold** and R. Tronstad. New Federal Subsidies for Arizona Cotton. *Cotton Management Economic Notes* 7, No. 4. October 18, 1999.

Ayer, H. and **G. Frisvold**. The New U.S. - China Trade Agreement and Arizona Cotton. *2000 Arizona Cotton Report*, University of Arizona, College of Agriculture. 2000.

Frisvold, G. Conservation Programs in the Farm Bill: Funding Opportunities for Arizona? *Arizona Review* 1 (2003). 8-10.

Frisvold G. New Technologies, IPM Reduce Pesticide Use in Arizona Cotton. *Arizona Review* 2 (2003), 16-19.

Frisvold G. Investing in Border Water Quality. *Arizona Review*. 2 (2004), 8-12, 19.

Deva, S. and **G. Frisvold**. Some Highlights from the 2003 Farm and Ranch Irrigation Survey. *Arizona Review* 3 (2005), 16-19.

Published Conference Proceedings Articles

Agnew, G.K. P. Baker and **G. Frisvold**. Arizona Cotton Pesticide Use Data: Opportunities and Pitfalls. *Proceedings of the Beltwide Cotton Conferences* (2000). Memphis, TN: National Cotton Council.

Agnew, G.K., **G. Frisvold** and P. Baker. Adoption of Insect Growth Regulators in Arizona Cotton: Determinants and Economic Implications. *Proceedings of the Beltwide Cotton Conferences* (2000). Memphis, TN: National Cotton Council.

Frisvold, G., R. Tronstad and J. Mortensen. Bt Cotton Adoption: Regional Differences in Producer Costs and Returns. *Proceedings of the Beltwide Cotton Conferences* (2000). Memphis, TN: National Cotton Council.

Frisvold, G. and R. Tronstad. Overseas Adoption of Bt Cotton: Implications for U.S. Producers. *Proceedings of the Beltwide Cotton Conferences* (2001). Memphis, TN: National Cotton Council.

Frisvold, G., G.K. Agnew, and P. Baker. Effects of Insect Growth Regulators on Insecticide Use and Costs in Arizona Cotton. *Proceedings of the Beltwide Cotton Conferences* (2002). Memphis, TN: National Cotton Council.

Frisvold, G. and K. Pounds. Diffusion of Bt Cotton and Insecticide Use. *Proceedings of the Beltwide Cotton Conferences* (2002). Memphis, TN: National Cotton Council.

Published Conference Proceedings Articles (continued)

Frisvold, G. and R. Tronstad. Global Impacts of Bt Cotton Adoption *Proceedings of the Beltwide Cotton Conferences* (2003). Memphis, TN: National Cotton Council.

Frisvold, G. and R. Pochat. Impacts of Bt Cotton Adoption: What State-level Data Can and Can't Tell Us. *Proceedings of the Beltwide Cotton Conferences* (2004). Memphis, TN: National Cotton Council.

Frisvold, G. Multilateral Aid and Transboundary Water Management Agreements: Lessons from Bargaining Theory. *Proceedings of the 2nd International Symposium on Transboundary Waters Management* (2005). Tucson, AZ: Sustainability of Semi-Arid Hydrology and Riparian Areas (SAHRA), University of Arizona, Tucson, Arizona.

Frisvold, G. Diffusion of Bt Cotton and Insecticide Use: A Beltwide Analysis. *Proceedings of the Beltwide Cotton Conferences* (2005). Memphis, TN: National Cotton Council.

Frisvold, G. and J. Reeves. Economy-wide Impacts of Bt Cotton. *Proceedings of the Beltwide Cotton Conferences* (2007). Memphis, TN: National Cotton Council.

Frisvold, G. A. Boor, and J. Reeves. Simultaneous Diffusion of Herbicide Tolerant Cotton and Conservation Tillage (2007). Memphis, TN: National Cotton Council.

Government Documents

Knudson, M. and **G. Frisvold**. Patents May Boost Plant Research. *Agricultural Outlook*. AO-158, November 1989, 25-6.

Frisvold, G. *Endogenous Technological Change in U.S. Agriculture: A Direct Test of the Induced Innovation Hypothesis*. Technical Bulletin No. 1790. No. 644. Washington, DC: Economic Research Service, USDA. 1991.

Frisvold, G. and E. Lomax. *Differences in Agricultural Research and Productivity among 26 Countries*. Agricultural Economic Report. No. 644. Washington, DC: Economic Research Service, USDA. 1991.

Heck, W., D. Ratloff, and **G. Frisvold**. Air Quality and the Productivity of Crops and Forests. In *Agriculture and the Environment: 1991 Yearbook of Agriculture*. Washington, DC: U.S. Government Printing Office. 1991.

Frisvold, G., J. Yee, and K. Day. *Private and Public Financing of R&D*. Agricultural Information Bulletin No. 664-69. Washington, DC: Economic Research Service. 1994.

Fuglie, K. K. Day, **G. Frisvold** and C. Klotz. Agricultural Research. *AREI Updates*, No. 5. USDA Economic Research Service, Natural Resources and Environment Division. 1995.

Chamie, J. **G. Frisvold**, and T. Teegerstrom. *The Hualapai Mountain Land Exchange: Impacts on Ranching and the Costs of Providing Public Services in Mohave County*. Report Submitted to Department of Interior, Bureau of Land Management. Kingman, Arizona. 1998.

Rubenstein, K.D., P. Heisey, R. Shoemaker, J. Sullivan, and **G. Frisvold**. *Crop Genetic Resources: An Economic Appraisal*. Economic Information Bulletin Number 2, Washington, DC: USDA, Economic Research Service. 2005.

Government Documents (continued)

Frisvold, G., R. Tronstad, R.L. Nichols, M. Watson, and E. Hequet. Scope and Economic Impact of Sticky Cotton. In E. Hequet, T. Henneberry & R. L. Nichols (eds). *Sticky Cotton:*

Causes, Impacts, and Prevention. Washington, DC: USDA Agricultural Research Service. 2007.

Book reviews

Frisvold, G. review of Crissman, C., J. Antle, and S. Capalbo (eds.) *Economic, Environmental, and Health Tradeoffs in Agriculture: Pesticides and the Sustainability of Andean Potato Production*, Boston: Kluwer Academic Publishers for the *American Journal of Agricultural Economics* 82 (2000), 778-9.

Frisvold, G. review of Saleth, R.M. (ed) *Water Resources and Economic Development*, Northampton, MA: Edward Elgar Publishing for *Journal of the American Water Resources Association* (2002).

Current and Pending Research Grant Support

Current

Title: Effects of Bt Cotton Adoption: Regional Differences in Producer Costs and Returns
Source of Support: Cotton Incorporated. \$6,000. End Date: 12/31/2007.

Title: Adoption of Conservation Tillage in US Cotton
Source of Support: Cotton Incorporated. \$6,000. End Date: 12/31/2007.

Title: Economics of Pink Bollworm Eradication
Source of Support: Cotton Incorporated. \$6,000. End Date: 12/31/2007.

Title: Transgenic Cotton Adoption and Cotton Quality
Source of Support: Cotton Incorporated. \$6,000. End Date: 12/31/2007.

Title: Emerging Issues in the Demographics of U.S. Cotton Producers
Source of Support: Cotton Incorporated. \$6,000. End Date: 12/31/2007.

Title: Willingness to Pay for Binational Effluent in the Upper Santa Cruz Basin.
Source of Support: University of Arizona Water Sustainability Grants Program funded by the Technology and Research Initiative Fund (TRIF). \$39,500 (Co-PI). End date: 12/31/2007.

Title: Cost and Availability of Healthier Foods for the Pascua Yaqui Pueblo and the Old Nogales Highway Colonia
Source of Support: USDA Food and Nutrition Small Grants Program and University of Arizona, Native Peoples Technical Assistance Office. \$30,000. 12/31/2007

Title: A Decision Model for Controlling Buffelgrass (*Pennisetum ciliare*) Invasion in an Urban-Wildland Interface Combining Dynamic Programming with the Analytical Hierarchy Process.
Source of Support: USDA Program of Research on the Economics of Invasive Species Management (PREISM). \$119,000 (Co-PI). End Date: 9/30/2008

Title: Integrating Climate Science for Decision-Support, Mitigating Risk and Promoting Resilience
Source of Support: NOAA. \$5,242,799 (Co-PI). End Date: 07/31/2012

Title: Arizona's Agricultural Economy – Future Scenarios and Water Management Implications
Source of Support: Arizona Water Institute. \$38,657 (Co-PI). End Date: 12/31/2008.

Pending

Title: Optimal Control Analysis of the Long-run Influences of Agricultural Water Use on

Groundwater Quality: Modeling and Application.
Source of Support: The United States - Israel Binational Agricultural Research and
Development Fund. \$300,000 (Co-PI). End Date: 05/31/09.