

# JONATHAN D. KAPLAN

Curriculum Vitae

March 2024

## Education

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1999 PhD Agricultural and Resource Economics, University of California, Davis  
1994 MS Agricultural and Resource Economics, University of Maine, Orono  
1992 BA Economics, Humboldt State University

## Current Position

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Professor, Department of Economics, California State University, Sacramento  
Faculty Affiliate, Office of Water Programs, California State University, Sacramento

## Areas of Research Interest

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Sustainable Agricultural Systems, Perennial Crop Production, Disease and Pest Management, Agricultural-Environmental Dynamics, Water Resource Management

## Current Projects

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Economic Analysis of Citrus Huanglongbing Control and Management  
Cost Benefit Analysis from Biochar and Bokashi in Citrus Nursery Production as a Nature-Based Solution for Climate Resilience  
The Potential Net Returns to Citrus Nurseries from the Production of Virus-stunted Citrus Trees  
E-Commerce Challenges for Pest Control in California  
Economics of Grapevine Trunk Diseases  
Developing Strategies for Increasing Marketable Yield in California and Florida Pomegranate Orchards  
State of California Wastewater Needs Assessment

## Past Projects

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Economic Impacts of Urban Water Use Efficiency Measures in California  
Financing Stormwater Management Programs in Economically Disadvantaged Communities  
Prioritization of Flood Management Alternatives for Yuba County Water Agency  
Economic Consequences of Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project  
Quantifying the Cost of Regulation for California's Manufactured Cannabis Industry  
Economic Hurdles to Adoption of Wood Canker Disease Controls in California Grape Production  
Economic Analysis of Pierce's Disease in the California Winegrape industry  
Testing Financial and Environmental Governance Institutions in the Economics Laboratory  
An Experiment on Alternative Water Market Structures and Organizations  
A Laboratory Investigation of a Congestion Externality: Commuter Parking and Responsive Pricing  
Adaptive Water Quality Management of a Heterogeneous Watershed  
Economic Effects of Central Valley Salinity on California Animal Feeding Operations  
Water Salinity Control and Household Labor Productivity in the Mekong Delta, Vietnam  
Economic Valuation of Wetlands in the Sacramento-San Joaquin Delta Estuary  
Conservation Compliance when Enforcement is Costly  
The Effect of Manure Nutrient Constraints on Water and Air Quality Improvements  
Non-Point Source Pollution Control under Incomplete and Costly Information

## Grant Awards

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- State of California, Water Resources Control Board, 'Environmental and Economic Effects of Water Conservation Regulations in California,' 2019-2022. CoPI.
- United States Department of Agriculture, Specialty Crop Research Initiative, Emergency Citrus Disease Research and Extension, Project Title: CAP: Combining cultural and genetic approaches for grove

- success to unravel and enhance resistance/tolerance to Huanglongbing. 2020-2025, coPI.
- California Department of Food and Agriculture, United States Department of Agricultural, Agricultural Marketing Service, Specialty Crop Multi-State Program, Project Title: Increasing Marketable Yield in California and Florida Pomegranate Orchards 2020-2024, coPI.
  - California Department of Food and Agriculture, “Mitigation of Huanglongbing Using Bioinoculants Developed with Strain Level Metagenomics of the Citrus Microbiome,” 2020 to 2022, coPI.
  - United States Department of Agriculture, Specialty Crop Research Initiative, Citrus Disease Research and Extension, Project Title: Systems Biology to Elucidate the CLas-Citrus-Psyllid Interactions Needed to Culture, Inhibit, and Detect CLas for Successful HLB Management, 2019 to 2024.
  - United States Department of Agriculture, Specialty Crop Research Initiative, Citrus Disease Research and Extension, Project Title: Deployment of a Spectrum of Bactericides to Cure and Prophylactically Treat Citrus Huanglongbing, 2017 to 2022.
  - Humboldt Institute for Interdisciplinary Marijuana Research/California Department of Public Health, SRIA II RCR S3148, Project Title: Analysis of the Cost of Regulation on California’s Manufactured Cannabis Industry, 2017-2018.
  - California Sustainable Winegrowing Alliance/California Department of Food and Agriculture Grant, Project Title: Design and Development of Interactive Trunk Disease Management Tool Website, 2016-2017.
  - United States Environmental Protection Agency Environmental Finance Center Grant Program, Project Title: EPA Region 9 Environmental Finance Center at California State University, Sacramento, 2015 – 2021.
  - United States Department of Agriculture, Specialty Crop Research Initiative, Project Title: New detection, research, and extension tools for managing wood-canker diseases of fruit and nut crops, 2014 to 2017.
  - United States Department of Agriculture, Specialty Crop Research Initiative, Project Title: New detection, research, and extension tools for managing wood-canker diseases of fruit and nut crops, 2012 to 2014.
  - Center for Watershed Sciences, Delta Solutions Project, University of California Davis, Project Title: Testing Financial and Environmental Governance Institutions in the Economics Laboratory, 2009 - 2010.
  - Delta Mercury Collective, Project Title: Economic Analysis of Proposed Methyl and Total Mercury TMDL for the Sacramento San Joaquin Delta Estuary, 2006-2007.
  - Giannini Foundation of Agricultural Economics, Project Title: Pricing Options in California Water Markets: A Laboratory Approach, 2005-2006.
  - College of Social Sciences and Interdisciplinary Studies, Summer Faculty Research Fellowship, California State University Sacramento, 2005.
  - College of Social Sciences and Interdisciplinary Studies, Summer Faculty Research Fellowship, California State University Sacramento, 2004.
  - United States Environmental Protection Agency STAR Dissertation Fellowship, 1997-1999.

### Journal Articles

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Pagliaccia, D., Ortiz, M., Rodriguez, M.V., Abbott, S., De Francesco, A., Amador, M., Lavagi, V., Maki, B., Hopkins, F., **Kaplan, J.** and Ying, S., 2024. Enhancing soil health and nutrient availability for Carrizo citrange (*X Citroncirus* sp.) through bokashi and biochar amendments: An exploration into indoor sustainable soil ecosystem management. *Scientia Horticulturae*, 326, p.112661.

Erik Porse, Caitlyn Leo, Erick Eschker, Harold Leverenz, **Jonathan D. Kaplan**, John Johnston, Dakota Keene & David Babchanik. Adapting wastewater management systems in California for water conservation and climate change, Sustainable and Resilient Infrastructure, 2023. DOI: [10.1080/23789689.2023.2180251](https://doi.org/10.1080/23789689.2023.2180251)

Porse, Erik, Maureen Kerner, Joel Shinneman, **Jonathan D. Kaplan**, Samuel Stone, and Mary L. Cadenasso. "Stormwater utility fees and household affordability of urban water services." *Water Policy* 2022, <https://doi.org/10.2166/wp.2022.024>.

Dongyue Li, Ruth A. Engel, Xiaoyu Ma, Erik Porse, **Jonathan D. Kaplan**, Steven A. Margulis, and Dennis P. Lettenmaier, "Stay-at-Home Orders during the COVID-19 Pandemic Reduced Urban Water Use." *Environmental Science & Technology Letters* 2021, DOI: 10.1021/acs.estlett.0c00979.

Gispert, Carmen, **Jonathan D. Kaplan**, Elizabeth Deyett, and Philippe E. Rolshausen. "Long-Term Benefits of Protecting Table Grape Vineyards against Trunk Diseases in the California Desert." *Agronomy* 10, no. 12 (2020): 1895. <https://doi.org/10.3390/agronomy10121895>.

Baumgartner, Kendra, Vicken Hillis, Mark Lubell, Max Norton, and **Jonathan D. Kaplan**. "Managing grapevine trunk diseases in California's southern San Joaquin Valley." *American Journal of Enology and Viticulture* 70, no. 3 (2019): 267-276. <https://doi.org/10.5344/ajev.2019.18075>.

Hillis, Vicken, Mark Lubell, **Jonathan D. Kaplan**, and Kendra Baumgartner. "Preventative disease management and grower decision making: a case study of California wine-grape growers." *Phytopathology* 107, no. 6 (2017): 704-710. <https://doi.org/10.1094/PHYTO-07-16-0274-R>.

**Kaplan, Jonathan D.**, Renaud Travadon, Monica Cooper, Vicken Hillis, Mark Lubell, and Kendra Baumgartner. "Identifying economic hurdles to early adoption of preventative practices: the case of trunk diseases in California winegrape vineyards." *Wine Economics and Policy* 5, no. 2 (2016): 127-141. <https://doi.org/10.1016/j.wep.2016.11.001>.

Hillis, Vicken, Mark Lubell, **Jonathan D. Kaplan**, David Doll, and Kendra Baumgartner. "The role of pest control advisers in preventative management of grapevine trunk diseases." *Phytopathology* 106, no. 4 (2016): 339-347. <http://dx.doi.org/10.1094/PHYTO-10-15-0250-R>. *Phytopathology* **Editor's Pick** for April 2016 Issue.

Alston, Julian M., Kate B. Fuller, **Jonathan D. Kaplan**, and Kabir P. Tumber. "Assessing the returns to R&D on perennial crops: the costs and benefits of Pierce's disease research in the California winegrape industry." *Australian Journal of Agricultural and Resource Economics* 59, no. 1 (2015): 95-115. <https://doi.org/10.1111/1467-8489.12045>.

Hansen, Kristiana, **Jonathan D. Kaplan**, and Stephan Kroll. "Valuing options in water markets: a laboratory investigation." *Environmental and Resource Economics* 57, no. 1 (2014): 59-80. <https://doi.org/10.1007/s10640-013-9659-6>.

Alston, Julian M., Kate B. Fuller, **Jonathan D. Kaplan**, and Kabir P. Tumber. "Economic consequences of Pierce's Disease and related policy in the California winegrape industry." *Journal of Agricultural and Resource Economics* (2013): 269-297. <http://www.waeonline.org/jareonline/archives/38.2%20-%20August%202013/JAREAug20139Alstonp269.pdf>.

Key, Nigel D., and **Jonathan D. Kaplan**. "Multiple environmental externalities and manure management policy." *Journal of Agricultural and Resource Economics* (2007): 115-134. <https://www.jstor.org/stable/40987354>.

Giannakas, Konstantinos, and **Jonathan D. Kaplan**. "Policy design and conservation compliance on highly erodible lands." *Land Economics* 81, no. 1 (2005): 20-33.

Farzin, Y. Hossein, and **Jonathan D. Kaplan**. "Nonpoint source pollution control under incomplete and

costly information." *Environmental and Resource Economics* 28, no. 4 (2004): 489-506.  
<https://doi.org/10.1023/B:EARE.0000036775.79214.a4>.

**Kaplan, Jonathan D.**, Robert C. Johansson, and Mark Peters. "The manure hits the land: economic and environmental implications when land application of nutrients is constrained." *American Journal of Agricultural Economics* 86, no. 3 (2004): 688-700.  
[https://www.jstor.org/stable/3697809?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/3697809?seq=1#metadata_info_tab_contents).

Johansson, Robert C., and **Jonathan D. Kaplan**. "A carrot-and-stick approach to environmental improvement: marrying agri-environmental payments and water quality regulations." (2004): 91-104.  
<https://doi.org/10.1017/S1068280500005669>.

**Kaplan, Jonathan D.**, Richard E. Howitt, and Y. Hossein Farzin. "An information-theoretical analysis of budget-constrained nonpoint source pollution control." *Journal of Environmental Economics and Management* 46, no. 1 (2003): 106-130. doi:10.1016/S0095-0696(02)00035-9.

**Kaplan, Jonathan D.**, and Richard E. Howitt. "Estimating nonpoint source pollution: An application of a sequential entropy filter." *Water Resources Research* 38, no. 3 (2002): 1-1.  
<https://doi.org/10.1029/2000WR000088>.

### **Digital Tools and Extension Outreach**

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"Potential economic consequences from Huanglongbing (aka citrus greening disease) in California commercial citrus: Results for Valencia orange production" (with E. Johnston and A. Singh), Research Note 2023-4, September 2023. [https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-04-valencias\\_rn.pdf](https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-04-valencias_rn.pdf).

"Potential economic consequences from Huanglongbing (aka citrus greening disease) in California commercial citrus: Results for Navel orange production" (with E. Johnston and A. Singh), Research Note 2023-3, August 2023. [https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-03-navels\\_rn.pdf](https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-03-navels_rn.pdf).

"Potential economic consequences from Huanglongbing (aka citrus greening disease) in California commercial citrus: Results for tangerine & mandarin production" (with E. Johnston and A. Singh) Research Note 2023-2, August 2023. [https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-02-tangerine\\_mandarin\\_rn1.pdf](https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023-02-tangerine_mandarin_rn1.pdf).

"Potential economic consequences from Huanglongbing (aka citrus greening disease) in California commercial citrus: Results for lemon production" (with E. Johnston and A. Singh) Research Note 2023-1, July 2023. [https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023\\_01\\_lemons\\_rn.pdf](https://www.csus.edu/faculty/k/kaplanj/researchnotes/2023_01_lemons_rn.pdf).

"How grower beliefs influence the efficacy of area-wide coordinated management of Asian citrus psyllids and Huanglongbing in California" (with S. Haynes and A. Singh). *Topics in Subtropics*, Volume 23, Spring 2022. [https://ceventura.ucanr.edu/news/Topics\\_in\\_Subtropics/?newsletteritem=93524](https://ceventura.ucanr.edu/news/Topics_in_Subtropics/?newsletteritem=93524).

Interactive Economic Tool for Understanding Effect of Huanglongbing in California. Spring 2022.  
[https://www.csus.edu/faculty/k/kaplanj/economic\\_tools/hlbtool.html](https://www.csus.edu/faculty/k/kaplanj/economic_tools/hlbtool.html)

Haynes, Samuel, Ajay Singh, and Jonathan D. Kaplan. "HLB Grower Web Tool—Technical Note." California State University, Department of Economics, Technical Note, February 2022.  
[https://www.csus.edu/faculty/k/kaplanj/economic\\_tools/hlb\\_grower\\_web\\_tool\\_tech\\_note.pdf](https://www.csus.edu/faculty/k/kaplanj/economic_tools/hlb_grower_web_tool_tech_note.pdf).

"An Agent Based Model of ACP/HLB in California Citrus - Preliminary Results on the Effects of Insecticide and Coordination on the Spread of HLB" (with S. Haynes and A. Singh), California State University, Department of Economics, Research Note 2021-2, December 2021.  
<https://www.csus.edu/faculty/k/kaplanj/researchnotes/researchnote2021-2.pdf>

"California Citrus Greening Survey - Preliminary Results on ACP/HLB Risk Perception and Information Confidence" (with S. Haynes and A. Singh), California State University, Department of Economics, Research Note 2021-1, September 2021.  
[https://www.csus.edu/faculty/k/kaplanj/researchnotes/research\\_note-2021\\_1\\_survey.pdf](https://www.csus.edu/faculty/k/kaplanj/researchnotes/research_note-2021_1_survey.pdf)

"Fungicide Application in Young Vineyards Protect Pruning Wounds from Grapevine Trunk Diseases and Provides Long-Term Economic Benefit," (with C. Gispert and P. Rolshausen) University of California Cooperative Extension, San Joaquin Valley Trees and Vines.  
<https://www.sjvtandv.com/blog/fungicide-application-in-young-vineyards-protect-pruning-wounds-from-grapevine-trunk-diseases-and-provides-long-term-economic-benefit>. February 2021.

SCRI Trunk Disease Project Website  
<http://treeandvinetrunkdiseases.org/>

Interactive Economic Tool for Managing Grapevine Trunk Diseases  
<http://treeandvinetrunkdiseases.org/economic-tool>  
 California Sustainable Winegrowing Alliance Vineyard Trunk Disease Prevention Video  
<https://www.sustainablewinegrowing.org/educational-videos.php#34>

California Sustainable Winegrowing Alliance Trunk Disease Management Tool – How to Video  
<https://vimeo.com/227788450>

"An Economic Analysis of Preventative Practices for Managing Trunk Disease in Table Grape Vineyards." (with M. Norton and K. Baumgartner) SCRI Trunk Disease Project Research Brief  
[http://treeandvinetrunkdiseases.org/wp-content/uploads/2017/06/170612\\_CTGC.pdf](http://treeandvinetrunkdiseases.org/wp-content/uploads/2017/06/170612_CTGC.pdf).

"Managing Grapevine Trunk Diseases." An Online Learning Module, The Vineyard Team Department of Pesticide Regulations Approved Continuing Education Program. January 2017.  
 "Preventing Trunk Diseases in the vineyard: Choosing the best practice." (with K. Baumgartner and R. Travadon) *Wine and Viticulture Journal* (2016) 31(1):51-54.  
[https://www.researchgate.net/profile/Renaud\\_Travadon/publication/308439599\\_Preventing\\_trunk\\_diseases\\_in\\_the\\_vineyard\\_Choosing\\_the\\_best\\_practices/links/57e56a2008ae9e5e4550112a/Preventing-trunk-diseases-in-the-vineyard-Choosing-the-best-practices.pdf](https://www.researchgate.net/profile/Renaud_Travadon/publication/308439599_Preventing_trunk_diseases_in_the_vineyard_Choosing_the_best_practices/links/57e56a2008ae9e5e4550112a/Preventing-trunk-diseases-in-the-vineyard-Choosing-the-best-practices.pdf)

"Making the economic case for early adoption of practices to prevent trunk diseases" (with K. Baumgartner and R. Travadon) March 2015. Lodi Winegrape Commission Coffee Shop piece,  
<http://www.lodigrowers.com/making-a-case-for-early-adoption-of-practices-to-prevent-trunk-diseases/>  
 (posted 03/16/2015).

**Kaplan, Jonathan D.**, Renaud Travadon, Kendra Baumgartner, "Making a case for early adoption of double pruning to prevent trunk diseases in Washington State vineyards." Washington State University Viticulture and Enology Program, Viticulture and Enology Extension News, Fall 2014. <http://s3-us-west-2.amazonaws.com/sites.cahnrs.wsu.edu/wp-content/uploads/sites/66/2010/07/2014-Fall-VEEN-Final.pdf>  
 (posted 09/17/14)

Baumgartner, Kendra, **Jonathan D. Kaplan**, and Greg Northcutt, "Research promises earlier warning for grapevine canker diseases." in Western Farm Press. <http://westernfarmpress.com/grapes/research->

[promises-earlier-warning-grapevine-canker-diseases](#) (posted 3/27/14)

“An economic case for early adoption of practices to prevent and manage grapevine trunk diseases.” University of California Davis, Center for Environmental Policy and Behavior Research Briefs. (with K. Baumgartner, R. Travadon, M. Cooper, V. Hillis, and M. Lubell)

<http://environmentalpolicy.ucdavis.edu/project/adoption-preventative-plant-disease-management-practices> (posted 1/16/14)

“Trends in usage and grower perceptions of preventative practices for management of grapevine trunk diseases.” University of California Davis, Center for Environmental Policy and Behavior Research Briefs. (with K. Baumgartner, R. Travadon, V. Hillis, and M. Lubell)

<http://environmentalpolicy.ucdavis.edu/project/adoption-preventative-plant-disease-management-practices> (posted 12/16/13)

“Trunk disease survey of Lodi grape growers.” (with K. Baumgartner, R. Travadon, V. Hillis, and M. Lubell) <http://www.lodigrowers.com/trunk-disease-survey-results-part-iii-of-iii/> (posted 11/27/13)

## Reports

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*Preliminary Analysis of the Economic Impacts of Alternative Water Releases from the Fremont Weir on Yolo Bypass Agriculture.* (with J. Medellin-Azuara). Prepared for Yolo County Board of Supervisors, September 2018.

*Review of Lower Elkhorn Basin Levee Setback Project Draft Environmental Impact Statement/ Environmental Impact Report.* (with J. Medellín-Azuara). Prepared for Yolo County Board of Supervisors, June 2018.

*Standardized Regulatory Impact Assessment (SRIA): Proposed Regulations for Manufacturers of Adult-Use and Medical Cannabis* (with E. Eschker, J. Zender, F. Krissman, J. Meisel, and A. Silvaggio) Report prepared by the Humboldt Institute for Interdisciplinary Marijuana Research, Humboldt State University and submitted to the California Department of Public Health, April 2018. Downloaded from [http://www.dof.ca.gov/Forecasting/Economics/Major\\_Regulations/Major\\_Regulations\\_Table/documents/SRIA\\_Manufacturers\\_Cannabis\\_CDPH\\_4-11-18.pdf](http://www.dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/SRIA_Manufacturers_Cannabis_CDPH_4-11-18.pdf).

*Review of Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project Draft Environmental Impact Statement /Environmental Impact Report.* (with J. Medellín-Azuara). Prepared for Yolo County Board of Supervisors, February 2018.

*The Feasibility of Yuba County Water Agency Funding Restoration within the Yuba River Watershed.* Prepared for the South Yuba River Citizens League, July 2015.

*The Economic Impacts of Central Valley Salinity,* (with R.E. Howitt, D. Larson, D. MacEwan, J. Medellín-Azuara, G. Horner, and N.S. Lee) Final Report to the State Water Resources Control Board Contract 05-417-150-0, March 20, 2009 retrieved from [https://www.waterboards.ca.gov/rwqcb5/water\\_issues/salinity/library\\_reports\\_programs/econ\\_rpt\\_final.pdf](https://www.waterboards.ca.gov/rwqcb5/water_issues/salinity/library_reports_programs/econ_rpt_final.pdf).

*An Economic Evaluation of a Rigs-to-Reefs Program for California Coastal Waters,* (with S. Kroll), Center for Strategic Economic Research, Sacramento, CA, June 2007.

*The Monetary Value of Wetland Benefits in the Sacramento – San Joaquin Delta,* (with B. Currier) Office of Water Programs, California State University Sacramento, completed for the Sacramento Water Alliance, December 2006.

“Water-Air Tradeoffs at the Farm Level” (with N. Key) in *Managing Manure to Improve Air and Water Quality* Economic Research Report No. 9 (ERR9), Economic Research Service, United States Department of Agriculture, 65 pp, September 2005 <https://www.ers.usda.gov/publications/pub-details/?pubid=46351>.

“National Analysis: Industry Effects of Manure Management,” (with R. Johansson and M. Peters) in *Manure Management for Water Quality: Cost of Land Applying Nutrients from Animal Feeding Operations*,” Agricultural Economic Report, Economic Research Service, United States Department of Agriculture, July 2003. <https://www.ers.usda.gov/publications/pub-details/?pubid=41587>.

"Maine's Household Garbage," (with G. Criner, S. Juric, and N. Houtman), Maine Agricultural and Forest Experiment Station, University of Maine, Bulletin 841, February 1994. Retreivable at [https://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1009&context=aes\\_bulletin](https://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1009&context=aes_bulletin).

### **Other Publications**

"Multilateral Environmental Agreements and Trade," (with J. Cooper) Chapter 7 in J. Cooper (ed.) *Global Agricultural Policy Reform and Trade Environmental Gains and Losses* March 2005, Edward Elgar, Cheltenham, UK and Northampton, UK. 254 pages.

“Proposed Requirements for Manure Nutrient Management: Potential Sector Impacts,” (with R. Johansson and M. Peters), *Agricultural Outlook* 290(April 2002): 21-25.

Criner, George K., S.C. Howick, J.P. O’Connor and J.D. Kaplan. 1994. “Maine Waste Management Issues.” *Maine Business Indicators*, Center for Business and Economic Research, University of Southern Maine. 39:2:1-5.

### **Presentations**

“The effect of price, practice costs, and risk perception on the decision to adopt ACP and HLB control practices in an established California citrus grove.” Selected poster presentation at the International Research Conference for Huanglongbing VII, Riverside, CA. March 26-29.

“The roles beliefs in neighbors’ behavior and confidence in scientific information play in area-wide coordinated spraying strategies for Asian citrus psyllid, the vector for Huanglongbing.” Selected poster presentation at the International Research Conference for Huanglongbing VII, Riverside, CA. March 26-29.

“The potential cost-effectiveness of ACP and HLB control strategies in a newly planted California citrus grove.” Selected poster presentation at the International Research Conference for Huanglongbing VII, Riverside, CA. March 26-29.

“Evaluating the Economics and Efficacy of Carbon-Based Fertilizers in Citrus Nurseries.” Invited speaker at 2024 California Citrus Nursery Society Conference, Temecula, CA. January 2024.

“Comparative Economic Evaluation of Sunburn and Fruit Split across Pomegranate Varietals.” Pomegranate and Citrus HLB Extension Meeting, University of California, Davis, October 31, 2023.

“Belief in Neighbors’ Behavior and Confidence in Scientific Information as Barriers to Cooperative Disease Control.” Seminar presentation at Bordeaux Science Agro, INRAE, French National Research Institute for Agriculture, Food and Environment, Bordeaux France. July 10, 2023.

“GTD in grapes.” Invited presentation at the 2021 Texas Wine and Grape Growers Annual Grape Camp, November 10, 2021.

“Economic analysis of risk and information confidence in Huanglongbing prevention and mitigation in California citrus groves.” Selected poster presentation at the 2021 California Citrus Conference, Visalia, California, October 6, 2021.

“A real-time interactive web-based application for growers to assess impact from adoption of ACP and HLB risk management strategies.” Selected poster presentation at the 2021 California Citrus Conference, Visalia, California, October 6, 2021.

“The cost of grapevine trunk diseases and the benefit from adopting preventative and mitigating strategies.” Invited Presenter at Canadian Grapevine Certification Network’s Grapevine Trunk Diseases Webinar, May 27, 2021. [https://www.youtube.com/watch?v=dpfj\\_ojqId0](https://www.youtube.com/watch?v=dpfj_ojqId0).

“The Economic Cost of Grapevine Trunk Diseases and the Potential Gains from Adopting Preventative Pruning Practices and Post-Infection Vine Replacement/ Costo económico de las enfermedades de la madera y beneficios potenciales de adoptar prácticas preventivas.” Invited Presenter at UC Davis Chile Extension Talks, December 17, 2020. <https://chile.ucdavis.edu/en/news/extension-talks-economic-losses-caused-vine-wood-fungus>.

“Ounce of Prevention or Pound of Cure: A Comparison of Preventative Practices and Vine Surgery for Trunk-Disease Control.” Selected Paper presentation at American Society of Enology and Viticulture 2019 Annual Meeting, Napa CA, June 19, 2019.

“The economic consequences of grapevine trunk diseases and the potential gains from adopting preventative pruning practices and vine surgery.” Invited Presenter at 2019 International Workshop on Grapevine Trunk Diseases, Penticton, BC Canada. July 12, 2019.

“An Ounce of Prevention or a Pound of Cure: An Examination of the Substitutability and Complementarity of Grapevine Trunk-Disease Management Practices” Invited Presenter at Department of Agricultural and Resource Economics, Colorado State University Seminar Series, May 2, 2019.

“The Impact of Plant Diseases on High Value Products: The Effect of Grape Diseases on the Wine Industry.” Invited Presentation at the 16<sup>th</sup> International Congress of Plant Pathology, Boston, MA. 8/02/2018.

“An Ounce of Prevention and a Pound of Cure: The Substitutability or Complementarity of Grapevine Trunk Diseases Management Practices.” Selected paper presentation at the Agricultural and Applied Economics Association Annual Meeting, Washington DC. 8/07/2018.

“Estimating the Costs and Benefits from Legalization and Regulation of Adult-Use and Medical Manufactured Cannabis Products in California.” Selected paper presentation at the Agricultural and Applied Economics Association Annual Meeting, Washington DC. 8/07/2018.

“Benefits of Early Adoption of Preventative Pruning Practices in Managing Grapevine Trunk Diseases.” Invited presentation at Oregon Grape Day, Corvallis, OR 4/03/2018.

“Trunk Disease Prevention and Online Management Tool.” California Sustainable Winegrowing Alliance, Ag Professional Day, University of California Davis, June 16, 2017 and Webinar, May 31, 2017.

“Benefits of Preventative Pruning Practices in Managing Grapevine Trunk Diseases.” Sonoma County Winegrape Commission Field Day, Shone Farms, Santa Rosa Community College, Guerneville, CA,

April 25, 2017.

“Economic hurdles to early adoption of grapevine trunk disease preventative practices.” Virginia Vineyards Association Winter Technical Meeting, Charlottesville, VA, February 24, 2017.

“Economic hurdles to early adoption of grapevine trunk disease preventative practices.” Sustainable Ag Expo, hosted by the Vineyard Team, San Luis Obispo, CA November 15, 2016.  
<http://www.vineyardteam.org/files/resources/Kaplan.pdf>

“Identifying Economic Hurdles to Early Adoption of Preventative Practices: The Case of Trunk Diseases in California Winegrape Vineyards.” Selected paper presentation at the Agricultural and Applied Economics Association Annual Meeting, Boston, MA. 8/02/2016.

“Identifying Economic Hurdles to Early Adoption of Trunk Disease Preventative Practices in California Winegrape Vineyards.” Invited oral presentation at the American Society for Enology and Viticulture Annual Meeting. Monterey, CA. 6/29/16.

“Extension Tools for Managing Grapevine Trunk Diseases” Invited Presentation at the 2016 National Grape and Wine Initiative Annual Meeting, 9/27/2016.

“Identifying Economic Hurdles to Early Adoption of Preventative Practices: The Case of Trunk Diseases in California Winegrape Vineyards.” Invited Brown Bag Seminar, Department of Economics, Chico State University, Chico, CA. 4/01/16.

“Results of grower questionnaire on trunk disease management,” Invited presentation at 2015 University of California Cooperative Extension Annual Viticulture Advisor Working Group Meeting, Davis, CA. 12/03/15

“Benefits from Management of Trunk Diseases of Grape Vines,” Invited oral presentation at the Robert Mondavi Institute, Center for Wine Economics and the University of California Agricultural Issues Center Mini Symposium: Wine Economics Research: Bordeaux and Davis, Davis, CA. 10/20/14.

“Economic benefits of early adoption of preventative management of grapevine trunk diseases.” Invited oral presentation at the American Society for Enology and Viticulture Annual Meeting. Austin, TX. 6/25/14.

“An economic evaluation of early adoption of trunk disease preventative practices in winegrape vineyards.” Invited poster presentation at the Agricultural and Applied Economics Association Annual Meeting. Minneapolis, MN. 7/27/14.

“The Economic Case for Early Adoption of Practices to Manage Grapevine Canker Diseases.” Invited presentation at Pruning for Prevention and Management of Grapevine Canker Diseases Workshop held by The Vineyard Team at Kendall Jackson’s K-J Vineyard, Gonzales, CA, January 14, 2014.

“The Economic Cost of Pierce’s Disease and Related Policy in the California Winegrape Industry.” Invited presentation for UC Davis Department of Plant Pathology Graduate Seminar Series, January 28, 2013.

“Private Provision of a Stochastic Common Property Resource,” selected paper presentation at the 2012 American Applied Economics Association Conference held in Seattle WA, August 12 – 14, 2012.

“A Laboratory Experiment on Pricing Reliability of a Stochastic Common Property Resource.” Invited

presentation at Environmental and Resource Economics Workshop Seminar, Department of Agricultural and Resource Economics, University of California, Davis, February 29, 2012.

“A Supply and Demand Model for the California Winegrape Sector.” Invited presentation at the Workshop on Pierce’s Disease and the Glassy-Winged Sharpshooter Department of Agricultural and Resource Economics University of California, Davis. July 29, 2011

“Pierce’s Disease Management in California Winegrape Production Regions.” Invited presentation at the SCRI Planning Workshop on Wood-Canker Diseases, UC Davis Viticulture & Enology Experimental Station, Napa CA. October 17, 2011.

“Resolving Congestion in the Information Age: The Case of Commuter Parking” (with N. Janusch and S. Kroll) Selected poster, American Agricultural and Applied Economics Association Meeting, Milwaukee, WI July 26-28, 2009.

“Manure in the Central Valley,” Invited Panel Presentation at *Enforcenomics: Why Water is Important to California’s Economy*, California Water Board Training Academy Workshop, Berkeley CA, January 10, 2008. <https://www.waterboards.ca.gov/academy/courses/enforcenomics/12.pdf>.

“Adaptive Management in a Dynamic Heterogeneous Watershed,” First Giannini Foundation Water Economics Workshop, Department of Agricultural and Resource Economics, University of California Davis, December 19, 2006.

“Policy Design and Conservation Compliance on Highly Erodible Lands,” Workshop on Information Deficiencies in Agri-Environmental Policy, Organization for Economic Cooperation and Development, Paris, France, June 6, 2006.

“Shifting Rice and Shrimp Production Possibilities: The Case of Water Salinity Management in the Mekong Delta, Vietnam,” (with U. Tran) Selected paper, Western Agricultural Economics Association Meeting, San Francisco, CA July 6-8, 2005.

“Information Acquisition and Adaptive Watershed Management: An Application to In-Stream Water Temperature and Salmon Survivability,” (with R. Howitt, M. Johnson, and J. Viers), Selected poster, 2004 CALFED Bay-Delta Program Science Conference, Sacramento, CA October 4-6, 2004.

“Information Acquisition and Adaptive Management: The Case of Managing TMDLs under Economic and Environmental Uncertainty,” (with R. Howitt, M. Johnson, and J. Viers) Department of Agricultural and Resource Economics Research Seminar Series, University of California, Davis, Oct. 1, 2004.

“Information Acquisition and Adaptive Management under Economic and Environmental Uncertainty,” (with R. Howitt, M. Johnson, and J. Viers) Department of Economics Seminar Series, California State University, Sacramento, Sept. 29, 2004.

“Managing Land and Water Resources in Coastal Areas: A Case Study of Government Intervention in Bac Lieu Province, Mekong Delta, Vietnam,” (with U. Tran) Department of Economics Seminar Series, California State University, Sacramento, Aug. 23, 2004.

“Managing Water Temperature TMDLs under Economic and Environmental Uncertainty,” (with R. Howitt, M. Johnson, and J. Viers), Selected paper, American Agricultural Economics Association Meeting, Denver, CO, Aug. 1-4, 2004.

“Information Acquisition and Adaptive Management in the Navarro River Watershed,” (with R. Howitt,

M. Johnson, and J. Viers), Workshop presentation, Measurement of Economic and Environmental Impacts Workshop held at California State University, Chico, April 23, 2004.

“Designing Water Quality Improvement Programs, the Role of Economics,” presentation at the Sacramento Economic Roundtable, Sept. 25, 2003.

“When the #@\$ Hits the Land: Implications for US Agriculture when Land Application of Manure is Constrained,” (with R. Johansson) Selected paper, American Agricultural Economics Association Meeting, Montreal, Canada July 27-30, 2003.

“Conservation Compliance on Highly Erodible Land: An Empirical Auditing Game,” (with K. Giannakas) Selected paper, American Agricultural Economics Association Meeting, Long Beach, CA, July 28-31, 2002.

“Estimating an Empirical Auditing Game,” (with K. Giannakas) Selected paper, World Congress of Environmental and Resource Economists, Monterey, CA, June 24-27, 2002.

“Improving Water Quality through Nutrient Management Planning: Industry and Environmental Effects,” (with R. Johansson and M. Peters) Selected paper, World Congress of Environmental and Resource Economists, Monterey, CA, June 24-27, 2002.

“Water Quality Protection: The Case of Prevention versus Utilization of Manure Nutrients,” Department of Agricultural Economics, University of Nebraska, Lincoln, Nov. 9, 2001.

“Prevention versus Utilization of Excess Nutrients from Animal Feeding Operations: The Case of Managing Nutrient Uncertainty,” Selected paper, American Agricultural Economics Association Meeting, Chicago, IL, Aug. 5-8, 2001.

“Public Management of Nonpoint Source Pollution: An Application to Redwood Creek,” (with R. Howitt and Y. H. Farzin), Selected paper, American Agricultural Economics Association Meeting, Tampa, FL, July 30-Aug. 2, 2000.

“Perennial Crop Supply Response: An Application of the Sequential Entropy Filter to California Winegrapes,” (with R. Howitt), Selected paper, American Agricultural Economics Association Meeting, Tampa, FL, July 30-Aug. 2, 2000.

“Bayesian and Entropy Methods in a Model of US Crop Supply,” (with R. Howitt), International Society for Bayesian Analysis, 6<sup>th</sup> World Congress, Hersonissos, Heraklion, Crete, May 28 - June 1, 2000.

“A Sequential Entropy Filter for Reconstructing Nonpoint Source Pollution Parameters,” (with R. Howitt), Short paper, Fourth Occasional California Workshop on Environmental and Resource Economics, University of California, Santa Barbara, Oct. 16-17, 1998.

“Entropy Filters and Bayesian Estimation: An Application to Nonpoint Source Pollution Control,” Department of Agricultural and Applied Economics, University of Wisconsin, Madison, Sept. 4, 1998.

“Optimal Management of Nonpoint Source Pollution under Incomplete and Costly Information,” (with Y. H. Farzin), Selected paper, American Agricultural Economics Association Meeting, Salt Lake City, UT, Aug. 2-5, 1998.

“Optimal Information Acquisition from Noisy Nonpoint Source Pollution Data,” (with R. Howitt), Selected paper, American Agricultural Economics Association Meeting, Salt Lake City, UT, Aug. 2-5 1998.

“Optimal Information Acquisition in an Ill-Posed World,” (with R. Howitt), Department of Agricultural and Resource Economics, University of California, Davis, May 11, 1998.

“Nonpoint Source Pollution Control under Incomplete and Costly Information,” Department of Agricultural and Resource Economics, University of California, Berkeley, March 4, 1998, and Department of Agricultural and Resource Economics, University of California, Davis, Feb. 25, 1998.

“Maximum Entropy and Efficiency Gains in Nonpoint Source Pollution,” (with R. Howitt), Selected paper, American Agricultural Economics Association Meeting, Toronto, Ontario. July 27-30, 1997

“Nonpoint Source Pollution, Incomplete Information, and Learning: An Entropy Approach,” (with R. Howitt), Selected paper, Western Agricultural Economics Association Meeting, Reno, NV, July 13-16, 1997.

“Costs of Managing Waste: Maine Case Study Results,” Selected paper, Redefining Resources: the Thirteenth Annual New England Resource Recovery Conference and Exposition, Portland, ME. June 13, 1994.

“The Cost of Recycling Maine's Municipal Solid Waste,” Invited paper, First Annual Maine Recyclathon, Bangor, ME. May 4, 1994.

### **Proceedings Papers**

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“Excreta, Excreta, Excreta! Read All About It! Animal Producers Pass New Waste Management Costs onto Consumers and Rural Economies with Mixed Environmental Outcomes,” (with R. Johansson) Proceedings Paper, SERA-IEG 30: Natural Resource Economics Meetings, University of Kentucky, May 15-16, 2003.

“Optimal Fisheries Management in the Presence of An Endangered Predator and Harvestable Prey,” (with M. Smith), Contributing Paper, Proceedings of the International Institute of Fisheries Economics and Trade (IIFET) Conference 2000, Corvallis, Oregon, July 10-14, 2000.

"Economies of Size in Processing Recyclables," (with G. Criner and V. Tchaikovsky), R'99 Recovery, Recycling, Re-Integration Congress Proceedings, Geneva, Switzerland, February 5-8, 1999. Vol. 1, pp. 131-137.

"What Policies Will Determine the Long-Run Success or Failure of Wildlife Management in Southern Africa?" *Proceedings from the Workshop on Cooperative Regional Wildlife Management in Southern Africa*, University of California, Davis, August 13-14, 1998: 97-99.

### **Past Professional Experience**

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2000–2003. Resource Economist, Economic Research Service, United States Department of Agriculture  
1999–2000. Post Doctorate Research Economist, John Muir Institute for the Environment, University of California, Davis.

1995–1999. Research Assistant, Department of Agricultural and Resource Economics, University of California, Davis.

1996. Summer Intern, Natural Heritage Institute, San Francisco, CA.

1994–1995, Spring 1996. Teaching Assistant, Department of Agricultural and Resource Economics, University of California, Davis.

1995. Summer Intern, University of California Cooperative Extension, Hoopa Valley Reservation, Hoopa, CA.

1992–1994. Research Assistant, Project for the Study of Utility Regulation and the Environment,

Margaret Chase Smith Center for Public Policy, University of Maine.  
 1993–1994. Editorial Staff, Maine Policy Review, Margaret Chase Smith Center for Public Policy, University of Maine.  
 1993. Teaching Assistant, College of Engineering, University of Maine.  
 1992–1993. Research Assistant, Department of Resource Economics and Policy, University of Maine.  
 1990–1992. Lab Instructor, Intensive Learning Experience, Mathematics Department, Humboldt State University.

### **Awards and Honors**

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Helios Award, Honorable Mention Research and Policy Contribution, USDA-ERS, 2005  
 Gordon A. King Outstanding Dissertation Award, Department of Agricultural and Resource Economics, University of California, Davis, 1999  
 United States Environmental Protection Agency STAR Dissertation Fellowship, 1997-1999  
 Jastro Shields Research Scholarship, University of California, Davis, 1997-98  
 Giannini Foundation Fellowship, University of California, Davis 1995  
 Jesse M. Carr Fellowship, University of California, Davis 1994-95  
 Gail E. Oliver and Ruth M. Oliver Scholarship, University of California, Davis, 1994

### **Undergraduate Courses Taught**

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Introduction to Microeconomic Analysis  
 Intermediate Microeconomics  
 Resource Economics  
 Economic Research Methods  
 Environmental Economics (at University of California, Davis)

### **Graduate Courses Taught**

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Applied Econometric Analysis  
 Cost-Benefit Analysis

### **Graduate Student Thesis Advising**

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Alan Tran, **Thesis Advisor**, Completed Spring 2006  
 Jesse Catlin, Second Reader, Completed Spring 2007  
 Davis Hetzel, Second Reader, Completed Fall 2007  
 Jake Hoffman, Second Reader, Complete Fall 2007  
 Luciano Acre, Second Reader, Completed Spring 2008  
 Edward Cremata, **Thesis Advisor**, Completed Spring 2009  
 Nicholas Janusch, **Thesis Advisor**, Completed Spring 2009  
 Jessica Ritter, **Thesis Advisor**, Completed Fall 2009  
 Ivin Rhyne, **Thesis Advisor**, Completed Fall 2009  
 Lang Hoch, Second Reader, Completed Spring 2010  
 Elizabeth Bessman, **Thesis Advisor**, Completed Fall 2010  
 Francisco Gonzalez, **Thesis Advisor**, Completed Fall 2010  
 Adam Pritchett, **Thesis Advisor**, Completed Spring 2011  
 Jacob Boyce, **Thesis Advisor**, Completed Spring 2011  
 Tatyana Yashina, Second Reader, Completed Spring 2011  
 Caitlin Hicks, Second Reader, Completed Spring 2011  
 Madhavi Knickerbocker, **Thesis Advisor**, Completed Summer 2011  
 Alison Winters, Second Reader, Completed Fall 2011  
 Vince Barbara, **Thesis Advisor**, Completed Summer 2012  
 William Matsuoka, **Thesis Advisor**, Completed Spring 2013  
 Chris Newton, **Thesis Advisor**, Completed Summer 2013

Lucas Krall, **Thesis Advisor**, Completed Fall 2013  
 Sonya Yin, **Thesis Advisor**, Completed Fall 2014  
 Ben Kowalsky, Second Reader, Completed Spring 2016  
 Abraham Le, **Thesis Advisor** since Spring 2016  
 Murtaza Taz Nasafi, **Thesis Advisor** Completed Summer 2016  
 Andrew Fox, **Thesis Advisor**, Completed Spring 2017  
 Nick Hladek, **Thesis Advisor**, Completed Spring 2017  
 Peter Puglia, **Thesis Advisor** since Spring 2017  
 James Friedrich, Second Reader, Completed Fall 2017  
 Melissa, Thich, **Thesis Advisor**, Completed Spring 2018  
 Devin Saum, **Thesis Advisor**, Completed Spring 2018  
 Mitti Moses, **Thesis Advisor** Completed Spring 2018  
 Adam Bunnell, **Thesis Advisor**, Completed Fall 2019  
 Christopher Hess, Second Reader, Completed Spring 2020  
 Charles Negus, Second Reader, Completed Fall 2020  
 Kyle Grewing, Second Reader, Completed Spring 2021  
 David Schreiber, **Thesis Advisor**, Completed Fall 2021  
 Samuel Haynes, **Thesis Advisor**, Completed Spring 2022

### **Graduate Student Dissertation Advising**

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Marie Konan, Dissertation Committee, Department of Economics, University of Bordeaux, Larefi, France. Defense July 2023.  
 Kate Fuller, Dissertation Committee Member, Department of Agricultural and Resource Economics, University of California, Davis, Completed Winter Quarter 2012.

### **Department Service**

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Graduate Coordinator, 2008 – 2011, 2015 - 2020  
 Executive Committee 2005 – Spring 2008, Fall 2017  
 Graduate Committee, 2003 to present (chair 2008-2011, 2015 to present)  
 Retention, Tenure and Promotion Committee, Fall 2007 to present  
 Human Subjects Committee, 2004 to present (chair 2005-2006)  
 Undergraduate Advising Committee, 2004 – 2007, 2009-2011, 2015 - 2017, 2021-2023  
 Undergraduate Economics Student Mentor, 2005-2006  
 ECON 1B Coordinator, 2012, 2014  
 Library Liaison, 2004 – 2011  
 Assessment Committee, 2008 to present  
 Application Screening Committee, 2008 to present  
 Visiting Scholar Application Screening Committee 2013  
 Appointment Committee, 2003 to present  
 John Ranlett Lecture Committee, 2008 – 2014  
 Adam Smith Award Committee, 2006 – 2008, 2013, 2014 to 2016  
 Part-time Faculty Evaluation Committee, 2007 – 2008  
 ASA I Hiring Committee 2005-2006

### **College and University Service**

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At-large Representative, Faculty Senate Graduate Studies Policy Committee, Fall 2010 to Spring 2016.  
 Faculty Senate Academic Information and Technology Committee, 2014 to 2023  
 Chair, SSIS Water Faculty Position Search Committee 2015  
 SSIS Outstanding Awards Selection Committee 2012, 2013  
 SSIS Outstanding Service Award Selection Committee 2008  
 Faculty Senator Spring 2010 to Fall 2011  
 Alternative Faculty Senator, Fall 2009

Institutional Scholarship Committee, 2005 – 2008

Faculty Senate Elections Committee, 2006 – 2009

Judicial Review Board, 2006 - 2008

SSIS Representative, Research and Creative Activity Award Panel Review, 2004, 2006, 2008

**Professional Affiliations**

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Agricultural and Applied Economics Association

**Reviewer**

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*Agricultural and Resource Economics Review, American Journal of Agricultural Economics, American Journal of Enology and Viticulture, Canadian Journal of Agricultural Economics, Environmental and Resource Economics, Environmental Management, European Review of Agricultural Economics, Journal of Agricultural and Applied Economics, Journal of Agricultural and Food Industrial Organization, Journal of Agricultural and Resource Economics, Journal of Environmental Economics and Management, Journal of Environmental Management, Optimal Control: Applications and Methods, Review of Agricultural Economics, Review of Development Economics, Strategic Behavior and the Environment, Water Resources Research, Wine Economics and Policy*