

**KELLY MICHELE COBOURN**  
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## **EDUCATION**

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Ph.D., Agricultural and Resource Economics, University of California, Davis, 2009  
M.S., Resource Economics and Policy, University of Maine, 2004  
B.A. with High Distinction, Economics (Minor in Mathematics), University of Virginia, 2001

## **PROFESSIONAL EXPERIENCE**

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Invited Professor, Paris Dauphine University, 2019-2020  
Associate Professor, Virginia Tech, Forest Resources and Environmental Conservation, 2019-present  
Affiliated Faculty, Virginia Tech, Agricultural and Applied Economics, 2019-present  
Assistant Professor, Virginia Tech, Forest Resources and Environmental Conservation, 2013-2019  
Assistant Professor, Boise State University, Economics, 2009-2013  
Graduate Research and Teaching Assistant, University of California, Davis, 2005-2009  
Research Associate, University of Maine, Resource Economics and Policy, 2005  
Graduate Research and Teaching Assistant, University of Maine, 2002-2004  
Legislative Intern, Maine State Office of Policy and Legal Analysis, 2003-2004

## **AWARDS**

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Outstanding Doctoral Dissertation Award, Agricultural and Applied Economics Association, 2010  
Gordon A. King Outstanding Dissertation Award, University of California, Davis, 2009  
Outstanding Master's Thesis Award, Agricultural and Applied Economics Association, 2005  
Master's Thesis Award of Merit, Northeastern Agricultural and Resource Economics Association, 2005  
Provost's Fellowship, University of Maine, 2002

## **PUBLICATIONS**

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Refereed Journal Articles (\*graduate student advisee; % postdoctoral advisee)

- Schons do Valle, S.Z., G.S. Amacher, K.M. Cobourn, and H. Gundimeda. 2020. "Can efficiency gains in the wood processing industry conserve forests in developing countries? The case of the Andhra Pradesh forest products sector." *Forest Products Journal*, in press.
- Henson, V.R., K.M. Cobourn, K.C. Weathers, C.C. Carey, K.J. Farrell, J.L. Klug, M.G. Sorice, N.K. Ward, and W. Weng\*. 2020. "A practical guide for managing interdisciplinary teams: lessons learned from coupled natural and human systems (CNHS) research." *Social Sciences*, doi: 10.3390/socsci9070119.
- Stachelek, J., W. Weng, C.C. Carey, A.R. Kemanian, K.M. Cobourn, T. Wagner, K.C. Weathers, P. Soranno. 2020. "Granular measures of agricultural land-use influence lake nitrogen and phosphorus differently at macroscales," *Ecological Applications*, doi: 10.1002/eap.2187.
- Sorice, M., L. Fitchett, K. Cobourn, K. Boyle, J. Klug, K. Weathers. 2020. "Pathways to enhanced lake integrity: a framework to assess effectiveness of local lake associations," *Lakes & Reservoirs: Science, Policy and Management for Sustainable Use*, doi: 10.1111/lre.12308.
- Weng, W.\* , K.J. Boyle, C.C. Carey, K.M. Cobourn, H.A. Dugan, K.J. Farrell, P.C. Hanson, N.K. Ward, and K.C. Weathers. 2020. "Coupling natural and human models in the context of a lake ecosystem: Lake Mendota, Wisconsin, USA," *Ecological Economics*, doi: 10.1016/j.ecolecon.2019.106556.
- Schons do Valle, S.Z., G.S. Amacher, K.M. Cobourn, and C. Arantes. 2020. "Benefits of community fisheries management to individual households in the floodplains of the Amazon River in Brazil," *Ecological Economics*, doi: 10.1016/j.ecolecon.2019.106531.

- Wurster, P.M., M. Maneta, S. Begueria, K. Cobourn, B. Maxwell, N. Silverman, S. Ewing, K. Jencso, P. Gardner, J. Kimball, Z. Holden, X. Ji<sup>o</sup>, and S.M. Vincente-Serrano. 2020. "Characterizing the impact of climatic and price anomalies on agrosystems in the northwestern United States," *Agricultural and Forest Meteorology*, doi: 10.1016/j.agrformet.2019.107778.
- Ward, N.K., L. Fitchett, J.A. Hart, L. Shu, J. Stachelek, W. Weng\*, Y. Zhang, H. Dugan, A. Hetherington<sup>o</sup>, K.J. Boyle, C.C. Carey, K.M. Cobourn, P.C. Hanson, A.R. Kemanian, M.G. Sorice, and K.C. Weathers. 2018. "Integrating economic and socio-cultural processes into coupled human-freshwater models facilitates representation of short and long-term feedbacks," *Ambio*, doi: 10.1007/s13280-018-1136-6.
- Wade, C.M.\*, K.M. Cobourn, G.S. Amacher, and E. Hester. 2018. "Groundwater pumping decisions and land subsidence in the southern Chesapeake Bay region of Virginia," *Water Resources Research*, doi: 10.1029/2017WR022133.
- Elbakidze, L., H.D. Vinson, K.M. Cobourn, G. Taylor. 2018. "Efficient water allocation and binding hydrologic externalities," *Resource and Energy Economics* 53: 147-161.
- Siriwardena, S.\*<sup>o</sup>, K.M. Cobourn, and G.S. Amacher. 2018. "Potential for cooperative bargaining to manage the spread of emerald ash borer with mixed public and private land ownership," *Journal of Forest Economics* 32C: 72-83.
- Cobourn, K.M., C.C. Carey, K.J. Boyle, C. Duffy, H.A. Dugan, K.J. Farrell, L. Fitchett, P.C. Hanson, J.A. Hart, V.R. Henson, A.L. Hetherington<sup>o</sup>, A.R. Kemanian, L.G. Rudstam, L. Shu, P.A. Soranno, M.G. Sorice, J. Stachelek, N.K. Ward, K.C. Weathers, W. Weng\*, and Y. Zhang. 2018. "From concept to practice to policy: modeling coupled natural and human systems in lake catchments," *Ecosphere* 9(5): e02209.
- Cobourn, K.M., G.S. Amacher, and R.G. Haight. 2018. "Cooperative management of invasive species: a dynamic Nash bargaining approach," *Environmental and Resource Economics*, doi: 10.1007/s10640-018-0238-8.
- Chance, E.W.\*<sup>o</sup>, K.M. Cobourn, and V.A. Thomas. 2018. "Trend detection for the extent of irrigated agriculture in Idaho's Snake River Plain, 1984-2016," *Remote Sensing*, 10(1): 145.
- Ji, X.\*<sup>o</sup>, and K.M. Cobourn. 2018. "The economic benefits of irrigation districts under prior appropriation doctrine: an econometric analysis of agricultural land-allocation decisions," *Canadian Journal of Agricultural Economics*, doi:10.1111/cjag.12165.
- Chance, E.W.\*<sup>o</sup>, K.M. Cobourn, V.A. Thomas, B. Dawson, A.N. Flores. 2017. "Normalized Difference Moisture Index Method for Identifying Irrigated Areas in the Snake River Plain, Idaho," *Remote Sensing*, 9: 546.
- Cobourn, K.M. 2015. "Externalities and Simultaneity in Surface Water-Groundwater Systems: Challenges for Water Rights Institutions," *American Journal of Agricultural Economics*, 97(3): 786-808.
- Ghosh, S.\*<sup>o</sup>, K.M. Cobourn, and L. Elbakidze. 2014. "Water Banking, Conjunctive Administration, and Drought: The Interaction of Water Markets and Prior Appropriation in Southeastern Idaho," *Water Resources Research*, 50(8): 6927-6949.
- Cobourn, K.M., E.R. Landa, G.E. Wagner. 2014. "Of Silt and Ancient Voices: Water and the Zuni Land and People," *National Center for Case Study Teaching in Science*.
- Elbakidze, L., and K.M. Cobourn. 2013. "Economic Foundations for Interdisciplinary Modeling in Water Resources Management," *Journal of Contemporary Water Research and Education*, 152: 32-41.
- Cobourn, K.M., R.E. Goodhue, and J.C. Williams. 2013. "Managing a Pest with Harvest Timing: Implications for Crop Quality and Price," *European Review of Agricultural Economics*, 40(5): 761-84.
- Mooney, S., D.L. Young, K.M. Cobourn, and S. Islam. 2013. "Multidisciplinary Research: Implications for Agricultural and Applied Economists," *Journal of Agricultural and Applied Economics*, 45(2): 187-202.

- Cobourn, K.M., H.J. Burrack, R.E. Goodhue, J.C. Williams, and F.G. Zalom. 2011. "Implications of Simultaneity in a Physical Damage Function," *Journal of Environmental Economics and Management*, 62(2): 278-289.
- Cobourn, K.M., and N.F. Crescenti. 2011. "The Implications of Surface-Ground Water Hydrology for Optimal Conjunctive Management," *Western Economics Forum*, 10(2): 50-63.

#### Book Chapters

- Cobourn, K.M., L. Elbakidze, and S. Ghosh<sup>o</sup>. 2016. "Conjunctive Water Management in Hydraulically Connected Regions in the Western U.S." in *Competition for Water Resources: Experiences and Management Approaches in the U.S. and Europe*, eds. J. Ziolkowska and J. Peterson.

#### Other Refereed Publications

- Scott, S.\*, K. Cobourn, J. Munsell, K. Stephenson, and B. Strahm. "Incorporating agroforestry into water quality trading: evaluating economic-environmental tradeoffs," in Proceedings of the XXV IUFRO World Congress, Curitiba, Brazil, September 29-October 5, 2019.
- Munsell, J., B. Addlestone, K. Cobourn, B. Strahm, K. Trozzo, S. Scott\*, A. Beck\*. "Agroforestry and phosphorus credit trading in the USA's Chesapeake Bay Watershed," in Proceedings of the 4<sup>th</sup> World Congress on Agroforestry, Montpellier, France, May 20-22, 2019.
- Garijo, D., D. Khider, V. Ratnakar, Y. Gil, K. Cobourn, E. Deelman, C. Duffy, R.F. da Silva, A. Kemanian, C. Knoblock, V. Kumar, S. Peckham, Y.Y. Chiang, A. Khandelwal, M. Pham, J. Pujara, M. Stoica, K. Tayal, B. Vu, D. Feldman, L. Shu, A. Dabrowski, D. Hardesty-Lewis, S. Pierce. "An intelligent interface for integrating climate, hydrology, agriculture, and socioeconomic models," in Intelligent User Interfaces 2019 Companion. Marina del Ray, CA, March 17-20, 2019.
- Gil, Y., K. Cobourn, E. Deelman, C. Duffy, R.F. da Silva, A. Kemanian, C. Knoblock, V. Kumar, S. Peckham, L. Carvalho, Y.Y. Chiang, D. Garijo, D. Khider, A. Khandelwal, M. Pahm, J. Pujara, V. Ratnakar, M. Stoica, and B. Vu. "MINT: model integration through knowledge-powered data and process composition," in 9<sup>th</sup> International Congress on Environmental Modelling and Software, eds. M. Arabi, O. David, J. Carlson, and D.P. Ames, Fort Collins, CO, June 24-28, 2018.
- Cobourn, K.M., G.S. Amacher, and R.G. Haight. "Cooperative management of invasive species: a dynamic Nash bargaining approach," in *Forest Economics and Policy in a Changing Environment: How Market, Policy, and Climate Transformations Affect Forests*, Proceedings of the 2016 Meeting of the International Society of Forest Resource Economics, Raleigh, NC, April 3-5, 2016.
- Cobourn, K.M. 2011. "Incentives for Individual and Cooperative Management of a Mobile Pest: An Application to the Olive Fruit Fly in California," *American Journal of Agricultural Economics* (proceedings), 93(2): 652.
- Cobourn, K.M. 2005. "Environmental Conservation on Agricultural Working Land: Assessing Policy Alternatives Using a Spatially Heterogeneous Land Allocation Model," *American Journal of Agricultural Economics* (proceedings), 87(5): 1337-1338.
- Cobourn, K.M. 2005. "Environmental Conservation on Agricultural Working Land: Assessing Policy Alternatives Using a Spatially Heterogeneous Land Allocation Model," *Agricultural and Resource Economics Review* (proceedings), 34(2): 289-290.

#### Other Publications

- Henson, V.R., K.M. Cobourn, C.C. Carey, K.J. Boyle, M.G. Sorice, N.K. Ward, and K.C. Weathers. 2019. "Closing the human-nature feedback loop: understanding people's responses to changing lakes," *LakeLine* 39(3): 35-38.
- Cobourn, K.M., E.C. Knoesen<sup>†</sup>, H.J. Burrack, R.E. Goodhue, J.C. Williams, and F.G. Zalom. 2014. "Olive fruit fly: timing the harvest to manage the pest," *ARE Update*, 17(6): 5-8. University of California Giannini Foundation of Agricultural Economics.
- Cobourn, K.M. 2012. Book Review of *The Economics and Politics of Climate Change*, eds. D. Helm and C. Hepburn, *Journal of Natural Resources Policy Research*, 4(4): 293-294.

## SPONSORED RESEARCH

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- Stephenson, S.K., E.M. Bock, K.M. Cobourn, Z.M. Easton. USDA National Institute of Food and Agriculture. "Development and evaluation of market-like pay-for-performance programs to address legacy nutrients." Award period: 2019-2022. Total: \$499,627.
- Gil, Y., K.M. Cobourn, E. Deelman, C. Duffy, A. Kemanian, C. Knoblock, V. Kumar, S. Peckham. DARPA World Modelers Program. "MINT: Model INTEgration through Knowledge-rich Data and Process Composition." Award period: 2017-2021. Total: \$13,000,000.
- Cobourn, K.M., K. Boyle, C. Carey, C. Duffy, and P. Hanson. National Science Foundation, Dynamics of Coupled Natural and Human Systems, "CNH-L: Linking Land-Use Decision Making, Water Quality, and Lake Associations to Understand Human-Natural Feedbacks in Lake Catchments." Award period: 2016-2020. Total: \$1,799,931.
- Maneta, M., K.M. Cobourn, S. Ewing, W.P. Gardner, K. Jencso, J. Kimball, B. Maxwell. USDA National Institute of Food and Agriculture. "Understanding the Hydrologic and Socioeconomic Impacts of Water Use and Resource Allocation in Agricultural Regions under Different Climate and Policy Scenarios." Award period: 2016-2020. Total: \$497,894.
- Wynne, R., V. Thomas, G.S. Amacher, K.M. Cobourn. NASA ROSES Land-Cover Land-Use Change Program. "Spatiotemporal Drivers of Fine-scale Forest Plantation Establishment in Village-based Economies of Andhra Pradesh." Award period: 2017-2020. Total: \$599,997.
- Cobourn, K.M. "Community partnerships to address a harmful algal bloom in Lake Anna, Virginia." + Policy Research Supplement (Fellowship), Policy Destination Area, Virginia Tech. Award period: 2019-2020. Total: \$8,000.
- Cobourn, K.M., and A. Flores. NASA ROSES Land-Cover Land-Use Change Program for Early Career Scientists. "Water Institutions and Agricultural Land-Use Change across the Western US." Award period: 2013-2017. Total: \$239,000.
- Boyle, K.J., K.M. Cobourn, A. McCoy, and E. Wiseman. "A national study of the effects of tree canopy, diversity and health on property values." USDA Forest Service. Award period: 2014-2017. Total: \$84,593.
- Cobourn, K.M. and V.A. Thomas. "Identifying the effects of climate change on irrigated agriculture using remote sensing and geospatial water rights data." Institute of Critical Technology and Applied Science, Junior Faculty Collaboration Program. Award period: 2014-2016. Total: \$60,000.
- Amacher, G.S. and K.M. Cobourn. "Biological invasions in a management mosaic: the cost of coordination failure and the value of information." USDA Forest Service Northern Research Station. Award period: 2013-2015. Total: \$24,987.
- Walsh, D.B., L.C. Lavine, F.G. Zalom, and K.M. Cobourn. "Costs and benefits of managing spider mite resistance on western us perennial specialty crops." USDA National Institute of Food and Agriculture, Pest Management Alternatives Program. Award period: 2013-2015. Total: \$199,293.
- Cobourn, K.M. "Agricultural land-use decisions in response to uncertain water availability and institutional constraints." National Aeronautics and Space Administration, Idaho Space Grant Consortium, Research Seed Grant Program. Award period: 2012-2014. Total: \$79,738.
- Cobourn, K.M. "Modeling dynamic feedback between surface and groundwater systems: implications for the economics of conjunctive management." US Geologic Survey, Idaho Water Resources Research Institute, 104(b) Program. Award period: 2010-2012. Total: \$30,375.

## PRESENTATIONS

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Total of 71 conference presentations and 58 invited seminars delivered by myself, graduate/postdoc mentees, and coauthors. International activities include 10 conference and 4 invited presentations.

Conference presentations: 26 as presenter; 27 by graduate/postdoc mentees; 18 as coauthor

Invited seminars: 47 as presenter; 7 by graduate/postdoc mentees; 4 as coauthor

Selected invitations: Agricultural and Applied Economic Association; Allied Social Science Association; American Geophysical Union; Arizona State University; Michigan State University; National Academy of Sciences; Resources for the Future; Universities Council on Water Resources; University of Florida; University of Montana; University of Nebraska, Lincoln; University of Southern California; University of Tennessee

Selected international activities: XXV IUFRO World Congress (Curitiba, Brazil); NASA LCLUC Southeast Asia Research Initiative (New Delhi, India); New Frontiers of Forest Economics (Vancouver, Canada); World Congress of Environmental and Resource Economists (Istanbul, Turkey); International Water Resource Economics Consortium (Stockholm, Sweden); Canadian Agricultural Economics Society (Victoria, Canada)

## **ADVISING/MENTORING**

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Directly mentored 36 scientists ranging from undergraduate to postdoctoral researchers in diverse disciplines, including economics, mathematics, geosciences, and communications.

Mentored and supported 4 postdoctoral fellows

Chair/co-chair for 12 graduate students: 3 current (2 Ph.D. and 1 M.S.); 9 completed (3 Ph.D. and 6 M.S.)

Committee member for 9 graduate students: 3 current (Ph.D.); 6 completed (4 Ph.D. and 2 M.S.)

Mentored and supported 1 project manager/science communicator for 2.5 years

Advised 10 undergraduate research students/projects including Honors theses

Serve as advisor to undergraduate majors in Environmental Resource Management and Water: Resources, Policy, and Management

## **TEACHING**

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Taught 33 courses to more than 850 students at three institutions (Virginia Tech, Boise State University, and New Mexico State University). Past teaching experience includes Econometrics (undergraduate and graduate), Quantitative Methods in Economics (undergraduate and graduate), and Interdisciplinary Modeling in Water and Climate (graduate). Current teaching includes:

FREC 4434: Natural Resource Policy (3 credits, Spring)

AAEC/FREC/WATR 4464: Water Resources Policy and Economics (3 credits, Fall)

FREC 5014: Research Ethics and Integrity (1 credit, Fall)

FREC 5884: Advanced Natural Resource Economics (3 credits, Fall odd years)

## **PROFESSIONAL SERVICE AND LEADERSHIP**

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President-elect, Universities Council on Water Resources, 2020-2021

Selected Presentations Committee, Natural Resource Economics Topic Lead and Reviewer, Agricultural and Applied Economics Association, 2011-present

External Advisory Panel, American Association for the Advancement of Science, 2015-present

Board of Directors, Universities Council on Water Resources, 2016-present

Editorial Council, Journal of Agricultural and Resource Economics, 2018-present

Officer (chair and chair-elect), Land, Water, and Environmental Economics Section, Agricultural and Applied Economics Association, 2018-present

Technical Program Chair, Universities Council on Water Resources/National Institutes for Water Resources 2020 Water Resources Conference, 2019-present

Chair, Outstanding Dissertation Award Committee, Agricultural and Applied Economics Association, 2016-2018

Officer (chair, chair-elect, and secretary/treasurer), Committee on Women in Agricultural Economics, 2010-2015