

## David Newburn

Department of Agricultural and Resource Economics  
2200 Symons Hall  
College Park, MD 20742  
Email: [dnewburn@umd.edu](mailto:dnewburn@umd.edu)

### Academic Appointments at UMD

Associate Professor, Department of Agricultural and Resource Economics, University of Maryland, College Park, 2018-present.

Assistant Professor, Department of Agricultural and Resource Economics, University of Maryland, College Park, 2012-2018.

### Other Employment

Assistant Professor, Department of Agricultural Economics, Texas A&M University, 2006-2011.

Ciriacy-Wantrup Postdoctoral Fellow, Department of Agricultural and Resource Economics, University of California, Berkeley, 2003-2005.

### Educational Background

Ph.D. University of California, Berkeley. Environmental Science, Policy and Management, 2002.  
B.S. University of Maryland, College Park. Physics (high honors in physics), 1991.

## RESEARCH, SCHOLARLY, AND CREATIVE ACTIVITIES

### Referred Journal Articles

# mentored student

Groffman, P., A. Reisinger, R. Zhang, D. Locke, A. Rosenberg#, D. Newburn, J. Duncan, L. Band, M. Grove, A. Miller, and C. Towe. 2026. "[Sweet spots for nitrogen restoration in a coastal watershed.](#)" *Nature Sustainability*, in press.

Johnston, R., E. Zawojka, D. Newburn, and T. Ndebele. 2026. "[Public acceptance of lawncare policy instruments to reduce nonpoint source pollution.](#)" *Land Economics*, 102(2): 193-222.

Newburn, D., H. Wang#, R. Johnston, K. Chang#, and T. Ndebele. 2025. "[High-resolution spatial modeling of household lawn fertilizer behavior: Implications for targeting nitrogen-reduction programs.](#)" *Journal of Environmental Management*, 395, 127655.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2024. "[Payments and penalties in ecosystem services programs.](#)" *Journal of Environmental Economics and Management*, 126, 102988.

- Mockrin, M., D. Newburn, and J. Stanovick. 2024. "[Balancing development and forest conservation: The impact of Maryland's Forest Conservation Act on spatial configuration of forest and housing.](#)" *Journal of Environmental Planning and Management*, 67(6): 1280-1302.
- Johnston, R., T. Ndebele, and D. Newburn. 2023. "[Modeling transaction costs in household adoption of landscape conservation practices.](#)" *American Journal of Agricultural Economics*, 105(1): 341-367.
- Groffman, P., A. Suchy, D. Locke, R. Johnston, D. Newburn, A. Gold, L. Band, J. Duncan, J. Grove, J. Kao-Kniffin, H. Meltzer, T. Ndebele, J. O'Neil-Dunne, C. Polsky, G. Thompson, H. Wang#, E. Zawojka. 2023. "[Hydro-bio-geo-socio-chemical interactions and the sustainability of residential landscapes.](#)" *Proceedings of the National Academy of Sciences Nexus*, 2(10): 1-11.
- Newburn, D., C. Polsky, R. Johnston, H. Wang#, and T. Ndebele. 2023. "[Modeling multi-scale influences on household lawncare decisions: Formal and informal neighborhood conforming effects on fertilizer use.](#)" *Landscape and Urban Planning*, 240, 104869.
- Rosenberg, A., D. Newburn, and C. Towe. 2023. "[Household willingness to pay for stream restoration on private and public lands: Evidence from the Baltimore Metropolitan Region.](#)" *Journal of the American Water Resources Association*, 59(2): 376-395.
- Zhang, R. D. Newburn, A. Rosenberg#, L. Lin, P. Groffman, J. Duncan, and L. Band. 2022. "[Spatial asynchrony in environmental and economic benefits of stream restoration.](#)" *Environmental Research Letters*, 17(5), 054004.
- Fleming#, P., E. Lichtenberg, and D. Newburn. 2020. "[Water quality trading in the presence of conservation subsidies.](#)" *Land Economics*, 96(4): 552-572.
- Wrenn, D, A. Klaiber, and D. Newburn. 2019. "[Price-based policies for managing residential development and impacts to water quality.](#)" *Resource and Energy Economics*, 58: 101115.
- Fleming#, P., E. Lichtenberg, and D. Newburn. 2018. "[Evaluating impacts of agricultural cost sharing on water quality: additionality, crowding in, and slippage.](#)" *Journal of Environmental Economics and Management*, 92: 1-19.
- Newburn, D. and J. Ferris#. 2017. "[Additionality and forest conservation regulation for residential development.](#)" *American Journal of Agricultural Economics* 99(5): 1228-1245.
- Wrenn, D, A. Klaiber, and D. Newburn. 2017. "[Confronting price endogeneity in a duration model of residential subdivision development.](#)" *Journal of Applied Econometrics* 32:661-682.
- Ferris#, J. and D. Newburn. 2017. "[Wireless alerts for extreme weather and the impact on hazard mitigation behavior.](#)" *Journal of Environmental Economics and Management* 82: 239-255.
- Newburn, D. and A. Alberini. 2016. "[Household response to environmental incentives for rain garden adoption.](#)" *Water Resources Research*, 1345-1357.

- Newburn, D. and J. Ferris#. 2016. "[The effect of downzoning for managing residential development and density.](#)" *Land Economics* 92(2): 220-236.
- Woodward, R., D. Newburn, and M. Mezzatesta#. 2016. "[Additionality and reverse crowding out for pollution offsets in water quality trading.](#)" *Ecological Economics* 128: 224-231.
- Grantham, T., M. Mezzatesta#, D. Newburn, and A. Merenlender. 2014. "[Evaluating tradeoffs between environmental flow protections and agricultural water security.](#)" *River Research and Applications* 30: 315–328.
- Mezzatesta#, M., D. Newburn, and R. Woodward. 2013. "[Additionality and the adoption of farm conservation practices.](#)" *Land Economics* 89(4): 722-742.
- Newburn, D. and R. Woodward. 2012. "[An ex post assessment of the Great Miami River Water Quality Trading Program.](#)" *Journal of the American Water Resources Association* 48(1): 156-169.
- Grantham, T., D. Newburn, M. McCarthy, and A. Merenlender. 2012. "[The role of stream flow and land use on limiting oversummer survival of juvenile steelhead in California streams.](#)" *Transactions of the American Fisheries Society* 141: 585-598.
- Newburn, D. and P. Berck. 2011. "[Exurban development.](#)" *Journal of Environmental Economics and Management* 62: 323-336.
- Newburn, D., N. Brozovic, and M. Mezzatesta#. 2011. "[Agricultural water security and instream flows for endangered species.](#)" *American Journal of Agricultural Economics* 93(4): 1212-1228.
- Newburn, D. and P. Berck. 2011. "[Growth management policies for exurban and suburban development: Theory and an Application to Sonoma County, California.](#)" *Agricultural and Resource Economics Review* 40(3): 375-392.
- Irwin, E., K. Bell, N. Bockstael, D. Newburn, M. Partridge, and J. Wu. 2009. "[The economics of urban-rural space.](#)" *Annual Review of Resource Economics* 1: 435-459.
- Merenlender, A., D. Newburn, S. Reed, and A. Rissman. 2009. "[The importance of incorporating threat for efficient targeting and evaluation of conservation investments.](#)" *Conservation Letters* 2: 240-241.
- Lohse, K.A., D.A. Newburn, J.J. Opperman, and A.M. Merenlender. 2008. "[Forecasting relative impacts of land use on anadromous fish habitat to guide conservation planning.](#)" *Ecological Applications* 18(2): 467-482.
- Newburn, D.A., P. Berck and A.M. Merenlender. 2006. "[Habitat and open space at risk of land-use conversion: targeting strategies for land conservation.](#)" *American Journal of Agricultural Economics* 88(1): 28-42.

Newburn, D.A. and P. Berck. 2006. "[Modeling suburban and rural residential development beyond the urban fringe.](#)" *Land Economics* 82(4): 481-499.

Newburn, D., S. Reed, P. Berck, and A. Merenlender. 2005. "[Economics and land-use change in prioritizing private land conservation.](#)" *Conservation Biology* 19(5): 1411-1420.

Gong, P., S.A. Mahler, G.S. Biging and D.A. Newburn. 2003. "[Vineyard identification in an oak woodland landscape with airborne digital camera imagery.](#)" *International Journal of Remote Sensing* 24(6): 1303-1315.

### **Working Papers**

"Designing contracts for payments for ecosystem services programs: Insights from a stated preference survey." (with Young Kim#, Erik Lichtenberg and Haoluan Wang#)

"Emissions trading programs for afforestation: Interactions with federal agricultural conservation programs." (with Young Kim#, Erik Lichtenberg, Haoluan Wang#, and Derek Wietelman#)

"Coastal agricultural land use response to sea level rise and saltwater intrusion." (with Becky Epanchin-Niell, Alexandra Thompson, Xianru Han, Jessica Post, Jarrod Miller, Keryn Gedan and Kate Tully)

"Do households pollute where they recreate? Endogenous impacts of recreation on lawn fertilizer use." (with Jordan Burt, Robert Johnston, Tom Ndebele, and Haoluan Wang#)

"The bio-geo-socio-chemistry of residential yards in the Long Island Sound watershed." (with Peter Groffman, Robert Johnston, Tom Ndebele, Colin Polsky, Chistopher Ryan, Haoluan Wang#)

### **Book Chapters**

Newburn, D., L. Lynch, and H. Wang#. 2022. "Farmland and forest conservation: Evaluation of smart growth policies and tools." G. Knaap et al. (eds.), *Handbook of Smart Growth: Promise, Principles, and Prospects for Planning*. Northampton, MA: Edward Elgar Publishing.

Irwin, E.G., G. Buckley, M. Gnagey, N. Irwin, D. Newburn, E. Pierce, D. Wrenn and W. Zhang. 2019. "The role of regulations and norms in land use change." S. Pickett et al. (eds.), *Science for the Sustainable City: Empirical Insights from the Baltimore School of Urban Ecology*. New Haven: Yale University Press.

### **Published Conference Proceedings**

#### ***Refereed Conference Proceedings***

Berck, P. and D.A. Newburn. 2007. "The importance of sewer extension costs for determining

the value of future development on agricultural lands.” *Review of Agricultural Economics* 29(3): 510-517. (editor-reviewed) Presented at the Allied Social Sciences Associations Annual Meeting. Chicago, Illinois.

### **Conferences, Workshops, and Talks**

# mentored student

#### ***Invited Talks***

Newburn, D., Kim#, Y., E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. “Interacting incentives for agricultural conservation subsidies and trading programs: Implications for water quality and carbon sequestration benefits in the Chesapeake Bay Watershed.” Department of Applied Economics and Statistics, University of Delaware.

Newburn, D., Kim#, Y., E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. “Adoption of agricultural conservation practices: Experimental insights for policy design.” The Center for Behavioral & Experimental Agri-Environmental Research Seminar Series (virtual).

Newburn, D., Kim#, Y., E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. “Emissions trading programs for afforestation: Interactions with federal agricultural conservation programs.” Department of Agricultural Economics, Sociology, and Education, Pennsylvania State University.

Newburn, D., R. Johnston, C. Polsky, H. Wang#, and T. Ndebele. 2023. “Neighborhood effects on household lawn fertilizer behavior and barriers to rain garden adoption in the Baltimore Metropolitan Region.” Center for Urban Environmental Research and Education, University of Maryland Baltimore County, Baltimore, Maryland.

Newburn, D., R. Johnston, and T. Ndebele. 2022. “Modeling transaction costs in household adoption of landscape conservation practices.” Department of Agricultural and Resource Economics, North Carolina State University.

Newburn, D., P. Fleming#, and E. Lichtenberg. 2018. “Water quality trading in the presence of existing cost share programs: Implications for water quality management in the Chesapeake Bay.” George Perkins Marsh Institute, Clark University.

Newburn, D. 2015. “Additionality and forest conservation regulations for residential development.” Department of Agricultural Economics, Sociology and Education. Pennsylvania State University.

Newburn, D. and J. Ferris#. 2014. “Residential development and the effect of competing forest conservation policies.” Land Use and Ecosystem Service Provision Workshop, University of California, Santa Barbara, California.

Newburn, D. and J. Ferris#. 2014. “Maryland’s Forest Conservation Act and the impact on

residential development and forest cover change.” Department of Agricultural, Food, and Resource Economics, Rutgers University, New Brunswick, New Jersey.

Newburn, D. 2012. “Residential development in the Baltimore Region.” Center for Urban Environmental Research and Education. University of Maryland at Baltimore County, Baltimore, Maryland.

Newburn, D. 2011. “Agricultural water security and instream flows for endangered species.” Department of Natural Resource and Environmental Management. University of Hawaii, Honolulu, Hawaii.

Newburn, D., and P. Berck. 2009. “Spatial dynamic model of exurban development.” Environmental Protection Agency sponsored workshop on The Economics of Land-Use Change: Advancing the Frontiers, Washington, DC.

Newburn, D. 2009. “Leapfrog development in the urban-rural interface.” Department of Agricultural, Environmental, and Development Economics, Ohio State University, Columbus, Ohio.

Newburn, D. 2008. “Spatial modeling of exurban development.” Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, Colorado.

Newburn D. 2006. “Spatial targeting strategies for land conservation.” Department of Agricultural Economics. Texas A&M University, College Station, Texas.

Newburn D. 2006. “Habitat and open space at risk of land-use conversion.” Department of Agricultural and Resource Economics. Oregon State University, Corvallis, Oregon.

Newburn, D. and P. Berck. 2005. “Habitat and open space at risk of land-use conversion.” Association of Environmental and Resource Economics Summer Workshop: Natural Resources at Risk. Grand Tetons, WY.

Newburn, D. 2001. “Spatial economic models of deforestation.” VIII Interamerican Congress on the Environment. Talca, Chile.

### ***Refereed Presentations***

Kim#, Y., D. Newburn, E. Lichtenberg, D. Wietelman#, and H. Wang#. 2026. “Emissions trading programs for afforestation: Interactions with agricultural conservation subsidy programs.” World Congress of Environmental and Resource Economists. Lisbon, Portugal. (scheduled)

Kim#, Y., D. Newburn, E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. “Emissions trading programs for afforestation: Interactions with federal agricultural conservation programs.” Association of Environmental and Resource Economics Conference. Santa Ana Pueblo, NM.

Kim#, Y., D. Newburn, E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. "Emissions trading programs for afforestation: Interactions with federal agricultural conservation programs." Agricultural and Applied Economics Association Conference. Denver, CO.

Kim#, Y., E. Lichtenberg, D. Newburn, H. Wang#, and D. Wietelman#. 2024. "Carbon trading programs for afforestation: Interactions with federal agricultural conservation programs." Association of Environmental and Resource Economics Conference. Washington, DC.

Newburn, D., H. Wang#, R. Lei-Parent, R. Johnston, J. Vaudrey, D. Dickson, T. Ndebele, and D. Wietelman#. 2024. "Spatial modeling of household fertilizer behavior: Implications for nonpoint nutrient-reduction programs and coastal water quality." Association of Environmental and Resource Economics Conference. Washington, DC.

Kim#, Y., E. Lichtenberg, D. Newburn, H. Wang#, and D. Wietelman#. 2024. "Carbon trading programs for afforestation: Interactions with federal agricultural conservation programs." Northeastern Agricultural and Resource Economics Association. Rehoboth, DE.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2023. "Carrots, sticks, and beyond: Design and impact of payments for ecosystem services." Agricultural and Applied Economics Association Conference. Washington, DC.

Newburn, D., C. Polsky, R. Johnston, H. Wang#, and T. Ndebele. 2023. "Understanding neighborhood conforming peer effects on household lawncare practices: Implications for nonpoint nutrient reductions." Agricultural and Applied Economics Association Conference. Washington, DC.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2023. "Penalties, targeting, and performance in payment for ecosystem services programs." Northeastern Agricultural and Resource Economics Association. Annapolis, Maryland.

Newburn, D., C. Polsky, R. Johnston, H. Wang#, and T. Ndebele. 2023. "Understanding neighborhood effects on household lawncare practices: Implications for nonpoint nutrient reductions." Association of Environmental and Resource Economics Conference. Portland, Maine.

Ryan, C., P. Groffman, R. Johnston, D. Newburn, C. Polsky, T. Ndebele, and H. Wang#. 2023. "Homeowner survey responses and yard soil biogeochemistry within the Long Island Sound watershed." European Geosciences Union. Vienna, Austria.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2022. "Payments and penalties in ecosystem services programs." Agricultural and Applied Economics Association Conference. Anaheim, California.

Lichtenberg, E., D. Newburn, and H. Wang#. 2022. "Time and risk preferences in payments for ecosystem services contracts." Association of Environmental and Resource Economics Conference. Miami, Florida.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2022. "Payments and penalties in ecosystem services programs." Association of Environmental and Resource Economics Conference. Miami, Florida.

Zhang, R, D. Newburn, A. Rosenberg#, P. Groffman, L. Lin, J. Duncan, L. Band. 2021. "Spatial asynchrony in environmental and socioeconomic benefits of stream restoration." American Geophysical Union. New Orleans, Louisiana.

Ndebele, T., R. Johnston, and D. Newburn. 2021. "Modeling transaction costs within household adoption behaviors: A case study of landscape best management practices." Association of Environmental and Resource Economics Conference (virtual).

R. Johnston, T. Ndebele, and D. Newburn. 2021. "Modeling transaction costs within household adoption behaviors: A case study of landscape best management practices." Annual Conference of the European Association of Environmental and Resource Economists (virtual).

Ndebele, T., R. Johnston, and D. Newburn. 2020. "Transaction costs and household adoption of stormwater management practices." Agricultural and Applied Economics Association Conference. Kansas City, Missouri (virtual).

Fleming#, P., E. Lichtenberg, and D. Newburn. 2018. "Evaluating impacts of agricultural cost sharing on water quality: Additionality, crowding in, and slippage." World Congress of Environmental and Resource Economists. Gothenburg, Sweden.

Wrenn, D., H.A. Klaiber, and D. Newburn. 2018. "Price-based policies for managing residential development and impacts to water quality." Agricultural and Applied Economics Association Conference. Washington, DC.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2018. "Water quality trading program design with heterogeneous behavioral responses." Agricultural and Applied Economics Association Conference. Washington, DC.

Rosenberg#, A., D. Newburn, and C. Towe. 2018. "Household willingness to pay for stream restoration on private and public lands: Evidence from the Baltimore Metropolitan Region." Agricultural and Applied Economics Association Conference. Washington, DC.

Lichtenberg, E., H. Wang# and D. Newburn. 2018. "Uptake and additionality in a green payment program: A panel data study of the Maryland cover crop program." Agricultural and Applied Economics Association Conference. Washington, DC.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2018. "Water quality trading program design with heterogeneous behavioral responses." Northeast Agricultural and Resource Economics Association. Philadelphia, Pennsylvania.

Wrenn, D., H.A. Klaiber, and D. Newburn. 2017. "Price-based policies for managing residential

development and impacts to water quality.” Agricultural and Applied Economics Association Conference. Chicago, Illinois.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2017. “Targeting agricultural cost share payments for nutrient abatement in the Chesapeake Bay Watershed.” Association of Environmental and Resource Economics Conference. Pittsburg, Pennsylvania.

Wrenn, D., H.A. Klaiber, and D. Newburn. 2017. “Price-based policies for residential development patterns and impacts to water quality in the Chesapeake Bay.” Association of Environmental and Resource Economics Conference. Pittsburg, Pennsylvania.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2017. “Targeting agricultural cost share payments for nutrient abatement in the Chesapeake Bay Watershed.” Northeast Agricultural and Resource Economics Association, Arlington, Virginia.

Ferris#, J. and D. Newburn. 2016. “Additionality and forest conservation regulation for residential development.” Association of Environmental and Resource Economics Conference. Breckinridge, Colorado.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2016. “Behavioral response to agricultural cost sharing and implications for water quality in the Chesapeake Bay.” Association of Environmental and Resource Economics Conference. Breckinridge, Colorado.

Bou-Zeid, E., Y. Ryu, J. Smith, and D. Newburn. 2015. “The hydrometeorological implications of zoning laws: Can land use regulations of urban density and sprawl improve a city’s resilience?” American Geophysical Union. San Francisco, California.

Gnagey, M., E. Irwin, H.A. Klaiber, and D. Newburn. 2015. “Smart growth, development moratoria, and land use patterns.” Southern Economic Association. New Orleans, Louisiana.

Newburn D. and J. Ferris#. 2015. “Downzoning for managing exurban development.” Association of Environmental and Resource Economics Conference. San Diego, California.

Fleming#, P., E. Lichtenberg, and D. Newburn. 2015. “Agricultural cost sharing and conservation practices for nutrient reduction in the Chesapeake Bay Watershed.” Agricultural and Applied Economics Association Conference. San Francisco, California.

Wrenn, D., H.A. Klaiber, and D. Newburn. 2015. “Confronting endogeneity in a duration model of residential subdivision development.” Agricultural and Applied Economics Association Conference. San Francisco, California.

Newburn D. and J. Ferris#. 2014. “Zoning and residential development.” North American Regional Science Conference. Washington, DC.

Wrenn, D., H.A. Klaiber, D. Newburn, and E. Irwin. 2014. “An equilibrium model of household sorting and residential land development.” North American Regional Science Conference.

Washington, DC.

Ferris#, J. and D. Newburn. 2014. "Residential development and the effect of competing forest conservation policies." Agricultural and Applied Economics Association Conference. Minneapolis, Minnesota.

Newburn D. and J. Ferris#. 2014. "The effect of downzoning on spatial development patterns." Agricultural and Applied Economics Association Conference. Minneapolis, Minnesota.

Woodward, R., M. Mezzatesta#, and D. Newburn. 2014. "Additionality, reverse crowding out, and pollution offsets". World Congress of Environmental and Resource Economists. Istanbul, Turkey.

Irwin, E., D. Wrenn, and D. Newburn. 2013. "The structural effects of zoning on residential land markets." North American Regional Science Conference. Atlanta, Georgia.

Wrenn, D, E. Irwin, and D. Newburn. 2013. "The structural effects of zoning on residential land markets." Association of Environmental and Resource Economics Conference. Banff, Canada.

Mezzatesta# M., D. Newburn, and R. Woodward. 2012. "Additionality and the adoption of farm conservation practices." Association of Environmental and Resource Economics Conference. Asheville, North Carolina.

Newburn, D., and P. Berck. 2011. "Exurban development." North American Regional Science Conference. Miami, Florida.

Mezzatesta# M., D. Newburn, and R. Woodward. 2011. "Additionality and the adoption of farm conservation practices." Agricultural and Applied Economics Association Conference. Pittsburg, Pennsylvania.

Towe, C., A. Klaiber, D. Wrenn, D. Newburn, and E. Irwin. 2011. "Exploiting spatial and temporal variations in residential subdivision development to identify urban growth spillovers." Agricultural and Applied Economics Association Conference. Pittsburg, Pennsylvania.

Newburn D., N. Brozovic, and M. Mezzatesta#. 2011. "Agricultural water security and instream flows for endangered species." Association of Environmental and Resource Economics Conference. Seattle, Washington.

Newburn, D., and P. Berck. 2011. "A spatial dynamic model of exurban development." Association of Environmental and Resource Economics Conference. Seattle, Washington.

Towe, C., A. Klaiber, D. Wrenn, D. Newburn, and E. Irwin. 2011. "Exploiting spatial and temporal variations in residential subdivision development to identify urban growth spillovers." Association of Environmental and Resource Economics Conference. Seattle, Washington.

Mezzatesta# M., D. Newburn, and N. Brozovic. 2010. "Agricultural water security and instream

flows for endangered species.” Fifth World Congress of Environmental and Resource Economists. Montreal, Canada.

Newburn, D., and N. Brozovic. 2009. “Environmental compliance, instream flows, and endangered species.” Association of Environmental and Resource Economics sessions at the Agricultural and Applied Economics Association Annual Meeting. Milwaukee, Wisconsin.

Grantham, T., A. Merenlender, D. Newburn. 2008. “Effects of summer flow variability on juvenile salmonid survival in coastal California streams.” American Fisheries Society Annual Meeting, Ottawa, Canada.

Berck, P. and D. Newburn. 2008. “On exurban development.” European Association of Environmental and Resource Economists. Gothenburg, Sweden.

Newburn, D. and P. Berck. 2007. “Exurban leapfrog development and housing production technologies.” American Agricultural Economics Association Annual Meeting. Portland, OR.

Newburn, D. and P. Berck. 2007. “The importance of sewer extension costs for the value of future development on agricultural land.” Allied Social Science Association Meeting. Chicago, IL.

Newburn, D. and A. Merenlender. 2007. “Spatially explicit models demonstrate the importance of preventing rural residential development and inform land conservation planning on private-land.” 103<sup>rd</sup> American Association of Geographers Meeting, San Francisco, California.

Berck, P. and D. Newburn. 2007. “Residential development under coordinated and unilateral growth management policies.” 14<sup>th</sup> Ulvon Conference on Environmental Economics. Ulvon, Sweden.

Newburn, D. and P. Berck. 2006. “Modeling suburban and rural residential development beyond the urban fringe.” American Agricultural Economics Association Annual Meeting. Long Beach, CA.

Lohse, K., D. Newburn, J. Opperman, C. Brooks, and A. Merenlender. 2005. “Towards sustaining water resources and aquatic ecosystems: forecasting watershed risks to current and future land use change. Joint Session of the American Geophysical Union and the North American Benthological Society, New Orleans, Louisiana.

Newburn, D., P. Berck, and A. Merenlender. 2005. “The importance of economics and land use change in reserve site selection.” Annual Meeting of the American Agricultural Economics Association, Providence, Rhode Island.

Newburn, D. 2005. “A clean break: Modeling urban and exurban residential development patterns” 46<sup>th</sup> Annual Conference of the Association of Collegiate Schools of Planning. Kansas City, MO.

Merenlender, A., J. Opperman, K. Lohse, D. Newburn, and C. Brooks. 2005. "Consequences of current and future land use for anadromous fish habitat in a Mediterranean climate basin, California." European International Association for Landscape Ecology Congress, Faro, Portugal.

Newburn, D. 2004. "Spatial targeting strategies for land conservation." American Agricultural Economics Association Annual Meeting. Denver, CO.

Newburn, D., S. Reed, P. Berck and A. Merenlender. 2004. "Maximizing the benefits of incentive-based conservation on private lands." Annual Meeting of the American Association of Geographers. Philadelphia, PA.

Newburn, D. 2003. "Land conservation strategies for habitat and open space protection". Annual Meeting of the American Association of Geographers. New Orleans, LA.

Newburn, D. 2002. "Spatial estimation of conservation easement values." Second World Congress of Environmental and Resource Economists. Monterey, CA.

### ***Non-Refereed Presentations***

Berck, P. and D. Newburn. 2008. "Some thoughts on land use." Resources for the Future. Washington, DC.

Newburn, D. 2007. "The effects of exurban and suburban development on agricultural land values." Department of Agricultural Economics, Texas A&M University.

Berck, P. and D. Newburn. 2007. "Some thoughts on land use." Environment for Development Initiative. Cape Town, South Africa.

Newburn, D. 2006. "Targeting payments for environmental services." Center for Conservation Biology. Stanford University, Palo Alto, California.

Newburn, D. 2005. "A Clean Break: Spatial models of urban and exurban residential development patterns." University of Illinois, Urbana-Champaign, Department of Agricultural and Consumer Economics. Urbana, IL.

Newburn, D. 2003. "The importance of economics and land use change in reserve site selection." University of California, Berkeley. Department of Agricultural and Resource Economics. Berkeley, California.

Merenlender, A., D. Newburn, and E. Heaton. 2001. "Mapping and forecasting vineyard development in Sonoma County." Enometrics VIII. St. Helena, California.

### ***Workshops***

Kim#, Y., D. Newburn, E. Lichtenberg, D. Wietelman#, and H. Wang#. 2025. "Interacting

incentives for agricultural conservation subsidies and trading programs: Implications for water quality and carbon sequestration benefits in the Chesapeake Bay Watershed.” W5133 Annual Meeting on the Economic Valuation and Management of Natural Resources on Public and Private Lands. Burlington, VT.

Kim#, Y., D. Newburn, E. Lichtenberg, D. Wietelman#, and H. Wang#. 2024. “Interacting incentives for agricultural conservation subsidies and trading programs: An integrated assessment model for water quality and carbon sequestration benefits in the Chesapeake Bay Watershed.” Social Cost of Water Pollution Workshop. Washington, DC.

Newburn, D., H. Wang#, R. Lei-Parent, R. Johnston, J. Vaudrey, D. Dickson, T. Ndebele, K. Chang#, and D. Wietelman#. 2024. “Integrated assessment modeling of household fertilizer behavior: Implications for nonpoint nutrient-reduction programs and coastal water quality.” Social Cost of Water Pollution Workshop. Washington, DC.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2024. “Payments and penalties for ecosystem services programs.” W5133 Annual Meeting on the Economic Valuation and Management of Natural Resources on Public and Private Lands. Fort Collins, CO.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2023. “Penalties, targeting, and performance in payment for ecosystem services programs.” Social Cost of Water Pollution Workshop. Washington, DC.

Newburn, D, C. Polsky, R. Johnston, H. Wang#, and T. Ndebele. 2023. “Modeling spatial conforming effects on household lawncare practices: Implications for fertilizer use and nonpoint-source pollution emissions.” Social Cost of Water Pollution Workshop. Washington, DC.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2022. “Payments and penalties in ecosystem services programs.” Heartland Workshop on Environmental and Resource Economics, Urbana-Champaign, Illinois.

R. Johnston, E. Zawojka, D. Newburn, and T. Ndebele. 2022. “Understanding household preferences for price versus quantity instruments on lawncare practices: Implications for nonpoint nutrient reductions.” Social Cost of Water Pollution Workshop. Washington, DC.

Kim#, Y., E. Lichtenberg, and D. Newburn. 2022. “Payments and penalties in ecosystem services programs.” Social Cost of Water Pollution Workshop. Washington, DC.

R. Johnston, T. Ndebele, and D. Newburn. 2021. “Transaction costs and household adoption of stormwater management practices: Evidence from revealed/stated discrete choice experiments.” Social Costs of Water Pollution Workshop (virtual).

Fleming#, P., E. Lichtenberg, and D. Newburn. 2019. “Water quality trading in the presence of existing cost share programs.” Integrated Assessment Models and the Social Costs of Water Pollution Workshop. Cornell University, Ithaca, New York.

Fleming#, P., E. Lichtenberg, D. Newburn, and H. Wang. 2018. “Costs of agricultural nonpoint pollution abatement in the Chesapeake Bay watershed.” Integrated Assessment Models and the Social Costs of Water Pollution Workshop, Iowa State University, Ames, Iowa.

Woodward, R., M. Mezzatesta#, and D. Newburn. 2013. “Additionality, reverse crowding out, and pollution offsets in water quality trading.” Heartland Workshop in Environmental and Resource Economics, University of Illinois, Urbana, Illinois.

Newburn, D., N. Brozovic, and M. Mezzatesta#. 2009. “Agricultural water security, compliance, and instream flows.” Heartland Workshop in Environmental and Resource Economics, University of Illinois, Urbana, Illinois.

Woodward, R. and D. Newburn. 2009. “The Great Miami River Watershed Water Quality Credit Trading Program.” Environmental Protection Agency sponsored workshop on Market Mechanisms and Incentives. Washington, DC.

Newburn, D. and P. Berck. 2008. “On exurban development.” 10<sup>th</sup> Occasional California Workshop on Environmental and Resource Economics. Bren School of Environmental Science and Management, University of California, Santa Barbara, California.

### **Professional and Extension Publications**

# mentored student

#### ***Extension Publications***

Palm-Forster, L., Wainger, L., Kuwayama, Y., Stephenson, D. Newburn, K., Brownson, M. Cole, J. Beckett, S. Knoche, and E. Campbell. 2026. “Advancing market-based approaches in the agricultural sector to support Chesapeake Bay watershed restoration.” Chesapeake Bay Program Scientific Technical Advisory Committee STAC Publication Number 26-004, pp. 73.

Dickson, D., Q. Lei-Parent, J. Vaudrey, R. Johnston, D. Newburn, H. Wang#, T. Ndebele, K. Chang#, and D. Wietelman#. 2025. “Targeting lawn fertilizer reduction programs: Using social science & geospatial analysis to reduce nitrogen loads from residential lawns to Long Island Sound.” Available at: <http://s.uconn.edu/nfert>.

Newburn, D., E. Lichtenberg, Y. Kim#, D. Wietelman#, and H. Wang#. 2024. “Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration.” Harry R. Hughes Center for Agro-ecology, pp. 24. Available at: <http://hdl.handle.net/1903/33888>.

Newburn, D., R. Johnston, H. Wang#, T. Ndebele, H. Kim#, and C. Polsky. 2021. “Lawn care and fertilizer use survey of Long Island Sound Watershed households.” Long Island Sound Study, pp. 23.

Lewis, R., D. Newburn, K. Zlevor, and G. Knaap. 2017. “Conservation land-use policy toolkit.”

Chesapeake Bay Trust and National Center for Smart Growth, pp. 103.  
Available at: <http://drum.lib.umd.edu/handle/1903/19228>.

Friedrichs, C., T. Dillaha, J. Gray, R. Hirsch, A. Miller, D. Newburn, J. Pizzuto, L. Sanford, J. Testa, G. Van Houtven, and P. Wilcock. 2014. "Review of the Lower Susquehanna River Watershed Assessment." Chesapeake Bay Program Scientific and Technical Advisory Committee Report. No. 14-006, Edgewater, MD, pp. 40.

Newburn, D., A. Alberini, A. Rockler, and A. Karp#. 2013. "Adoption of household stormwater best management practices." University of Maryland Extension, Extension Bulletin EB-413, pp. 21. Available at: <http://drum.lib.umd.edu/handle/1903/14974>.

### ***Policy Briefs***

Newburn, D. 2017. "Maryland's Forest Conservation Act and the impact on residential development and forest cover change in rural Baltimore County." Department of Agricultural and Resource Economics. Available at: <http://hdl.handle.net/1903/19628>.

Newburn, D. 2017. "Downzoning for the preservation of agricultural and forest lands." Department of Agricultural and Resource Economics. Available at: <http://hdl.handle.net/1903/19627>.

### **Sponsored Research**

#### ***Grants***

Long Island Sound Study Research Grant Program, Connecticut Sea Grant and New York Sea Grant. "Reducing Non-Point Source Nitrogen Loads from Residential Septic Systems: Identifying Barriers and Opportunities for Large-Scale Water Quality Improvements." \$812,255. 1/2025-12/2026. Principal Investigator: Jamie Vaudrey, Co-PIs: David Dickson, Robert Johnston, Quan Lei-Parent, David Newburn, Haoluan Wang. (Newburn co-PI amount, \$226,992)

Harry R. Hughes Center for Agro-Ecology. "Evaluating the Effectiveness of Economic Incentives to Enhance Riparian Buffer Adoption and Environmental Benefits for Water Quality and Carbon Sequestration." \$65,514. 5/2023-7/2024. Principal Investigator: David Newburn, Co-PI: Erik Lichtenberg. (Newburn PI amount, \$32,757)

Long Island Sound Study Research Grant Program, Connecticut Sea Grant and New York Sea Grant. "Coupled Prediction of Residential Fertilizer Use and Nitrogen Loads to Long Island Sound: An Integrated Targeting Tool for Nitrogen-Reduction Behavior Change Campaigns." \$405,630. 3/2023-2/2025. Principal Investigator: Robert Johnston, Co-PIs: David Dickson, Quan Lei-Parent, David Newburn, Jamie Vaudrey, Haoluan Wang. (Newburn co-PI amount, \$136,952)

United States Department of Agriculture, McIntire-Stennis Grant Program. "Economic Incentives for Enhancing Riparian Forest Buffer Adoption." \$60,000. 7/2020-6/2022. Principal Investigator: David Newburn.

Maryland Agricultural Experiment Station Competitive Grant Program. “Evaluating the Effectiveness of Subsidies for Agricultural Conservation Practices and Water Quality in the Chesapeake Bay.” \$30,000. 1/2019-6/2020. Principal Investigator: David Newburn, Co-PI: Erik Lichtenberg. (Newburn PI amount, \$15,000)

Chesapeake Bay Trust. “Evaluation of Land Use Policy Options, Incentives and Planning Tools to Reduce the Rate of Conversion of Agricultural Lands, Forest and Wetlands.” \$66,077. 4/2016-1/2017. Principal Investigator: Gerritt Knaap, Co-PI: David Newburn. (Newburn co-PI amount, \$33,038)

National Science Foundation, Coastal SEES Collaborative Research Program. “Restoration, Redevelopment, Revitalization and Nitrogen in a Coastal Watershed.” \$1.5 million. 9/2014-8/2017. Principal Investigator: Peter Groffman, Co-PI’s: Larry Band, Ed Doheny, Morgan Grove, Sujay Kaushal, Shannon LaDeau, Andy Miller, David Newburn, Emma Rosi-Marshall, Charles, Towe, Claire Welty. (Newburn co-PI amount, \$113,057)

National Science Foundation, Water and Sustainable Climate Program. “Linkages and Feedbacks between Regional Climate Variability and Patterns of Urban Development: Impacts on the Urban Water Cycle and Nutrient Export.” \$5.0 million. 1/2011-12/2015. Principal Investigator: Claire Welty, Co-PI’s: Elie Bou-Zeid, Ed Doheny, Peter Groffman, Art Gold, Morgan Grove, Elena Irwin, Allen Klaiber, Sujay Kushal, Andy Miller, Michael McGuire, David Newburn, Jim Smith, Charles Towe. (Newburn co-PI amount, \$20,561)

United States Department of Agriculture under the Agriculture and Food Research Institute (AFRI) Competitive Grants Program. “Agricultural Water Security and Instream Flows for Endangered Salmonids in Coastal California’s Watersheds.” \$110,352. 12/2009-12/2011. Principal Investigator: David Newburn, Co-PI’s: Nicholas Brozovic, Ximing Cai, and Adina Merenlender. (Newburn PI amount, \$81,806)

Environmental Protection Agency Science to Achieve Results (EPASTAR) Program: Market Mechanisms and Incentives. “Efficiency and Design Lessons from the Great Miami Watershed Water Quality Credit Trading Program.” \$185,796. 9/2007-3/2009. Principal Investigator: Richard Woodward, Co-PI: David Newburn. (Newburn co-PI amount, \$92,898)

### ***Contracts***

Cooperative Agreement with Ohio State University Research Foundation and United States Forest Service. “Modeling Spatial Patterns of Urban Development and Impacts to Nutrient Export in the Baltimore Metropolitan Region.” \$41,587. 7/2013-6/2016. Principal Investigator: David Newburn.

Cooperative Agreement with Ohio State University Research Foundation and United States Forest Service. “Spatial Analysis of Residential Development in Baltimore County.” \$40,000. 1/2011-9/2012. Principal Investigator: David Newburn.

Cooperative Agreement with Economic Research Service United States Department of

Agriculture. “Additionality and the Adoption of Farm Conservation Practices.” \$32,716. 8/2010-8/2011. Principal Investigator: Richard Woodward, Co-PI: David Newburn. (Newburn co-PI amount, \$16,358)

### **Research Fellowships, Prizes, and Awards**

Maryland Research Excellence Celebration Honoree, University of Maryland, 2023.  
Integrated Research & Extension Excellence Award for the College of Agriculture and Natural Resources, 2017.  
Ciriacy-Wantrup Postdoctoral Fellowship in Natural Resource Economics, 2003-2005.  
Lincoln Institute for Land Policy Dissertation Fellowship, 2001-2002.  
University of California Graduate Fellowship, 1998-1999.  
University of Maryland Honors Scholarship, 1987-1991.  
Phi Beta Kappa, 1991.

### **TEACHING, MENTORING AND ADVISING**

#### **Courses Taught**

AREC 455: Economics of Land Use (17-75 students), taught in Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024, Fall 2025.

AGEC 350: Environmental and Natural Resource Economics (36-40 students), taught in Fall 2008, Fall 2010

AGEC 422: Land Economics (63-81 students), taught in Spring 2008, Spring 2010, Spring 2011

AGEC 603: Land Economics (39-50 students), taught in Spring 2008, Spring 2009, Spring 2010, Spring 2011

AGEC 677: Frontiers in Spatial Modeling for Resource Economics (6 students), taught in Spring 2010

#### **Teaching Innovations**

##### ***Course or Curriculum Development***

Chesapeake Project Teaching Workshop: Integrating Sustainability across the Curriculum, May 2012.

#### **Advising: Research or Clinical**

##### ***Undergraduate***

Tieyue Zhang, 2020, Agricultural and Resource Economics (Advisor, Experimental Learning)  
Placement: Cornell University, MS & PhD program

Jason Wong, 2013, Agricultural and Resource Economics (Committee Member)  
Placement: Columbia University, MS & PhD program

### ***Master's***

Hyoseul Kim, 2023, Agricultural and Resource Economics (Committee Member)

Kushal Gurung, 2011-2012, Rangeland Ecology and Management, Texas A&M University  
(Committee Co-Chair)

Alexander Griffin, 2010-2011, Agricultural Economics, Texas A&M University (Committee  
Chair)

Denise Martinka, 2010-2011, Agricultural Economics, Texas A&M University (Committee  
Member)

Vinh Nguyen, 2010-2011, Land Development, Texas A&M University (Committee Member)

Dan Galindo, 2008-2009, Urban Planning, Texas A&M University (Committee Member)

### ***Doctoral***

Kaichao Chang, 2025-present, Agricultural and Resource Economics (Chair)

Tommaso Penati, 2026-present, Agricultural and Resource Economics (Committee Member)

Laura Palarz, 2025-present, Agricultural and Resource Economics (Committee Member)

Derek Wietelman, 2023-present, Agricultural and Resource Economics (Co-chair)

Sam Williamson, 2022-2026, Agricultural and Resource Economics (Chair) Placement: First  
American Financial Corporation, Senior Economist.

Young Kim, 2020-2024, Agricultural and Resource Economics (Co-chair) Placement: University  
of Florida, Assistant Professor; Oxford University, Postdoctoral Fellowship (1 year).  
Awards: AERE Wallace E. Oates Outstanding Doctoral Dissertation & AAEA Outstanding  
Doctoral Dissertation Award.

Haoluan Wang, 2018-2022, Agricultural and Resource Economics (Co-chair), Placement:  
University of Miami, Assistant Professor.

Andrew Rosenberg, 2016-2019, Agricultural and Resource Economics (Co-chair), Placement:  
USDA Economic Research Service, Research Agricultural Economist.

Youpei Yan, 2016-2019, Agricultural and Resource Economics (Committee Member), Placement: Yale University, Postdoctoral Researcher.

Zhi Li, 2015-2016, Urban and Regional Planning and Design (Committee Member)

Yoanna Kraus Elsin, 2013-2019, Agricultural and Resource Economics (Committee Member)

Patrick Fleming, 2013-2016, Agricultural and Resource Economics (Co-chair), Placement: Franklin & Marshall College, Assistant Professor.

Jeffrey Ferris, 2012-2015, Agricultural and Resource Economics (Chair), Placement: Amazon.

Siyi Feng, 2008-2012, Agricultural Economics, Texas A&M University (Committee Member)

Mariano Mezzatesta, 2007-2012, Agricultural Economics, Texas A&M University (Co-chair), Placement: Federal Energy Regulatory Commission.

## **Mentorship**

### ***Junior Faculty***

Xuan Wei, 2025-present, University of Maryland Extension

Rebecca Epanchin-Niell, 2020-2024, Agricultural and Resource Economics

Mary Zaki, 2018-2019, Agricultural and Resource Economics

## **Teaching Awards**

Graduate Faculty Mentor of the Year Award, University of Maryland, 2026.

## **Professional and Extension Education**

### ***Major Extension Programs***

#### ***Extension Presentations on Agricultural Conservation Practices and Water Quality in the Chesapeake Bay***

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration in Maryland.” Maryland Department of Agriculture, April 2026, Annapolis, MD.

“Pay-for-performance programs and interactions with cost-share programs for agricultural best management practices.” Virginia Department of Environmental Quality, April 2026. (virtual)

“Effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration in Maryland.” Agricultural and Environmental Law Conference, November 2025, Annapolis, MD.

“Incentives for forest buffers and water quality in the Chesapeake Bay Watershed.” Chesapeake Bay Program Forestry Workgroup, October 2025. (virtual)

“Effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration in Maryland.” Environmental Policy Innovation Center, September 2025, College Park, MD.

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration in Maryland.” Maryland League of Conservation Voters, July 2025, Stevensville, MD.

“Incentives and barriers for riparian buffer adoption.” Alliance for the Chesapeake Bay, March 2025. (virtual)

“Agricultural conservation practices and carbon sequestration.” University of Maryland AGNR Climate Adaptation and Mitigation Workshop. College Park, Maryland, March 2025.

“Economic incentives for riparian buffers and water quality in the Chesapeake Bay Watershed.” Choose Clean Water Coalition. Annapolis, Maryland, February, 2025.

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration.” Agriculture and Food Systems In-Service Meeting, University of Maryland Extension. College Park, Maryland, February, 2025.

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration.” Maryland Stream ReLeaf Coordinating Committee. Annapolis, Maryland, November, 2024.

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration.” Hughes Center for Agroecology. September, 2024. (virtual)

“Effectiveness of economic incentives to enhance riparian buffer adoption and water quality in the Chesapeake Bay.” University of Maryland AGNR Cornerstone Event: Advancing Innovative, Profitable, and Sustainable Agricultural Production Systems. College Park, Maryland, October, 2023.

“Evaluating the effectiveness of economic incentives to enhance riparian buffer adoption and environmental benefits for water quality and carbon sequestration.” Hughes Center for Agroecology. Queenstown, Maryland. January, 2023. (virtual)

“Water quality trading in the presence of existing cost share programs: Implications for water quality management in the Chesapeake Bay.” AGNR Cornerstone Event: Ensure a Clean & Healthy Chesapeake Bay. College Park, Maryland, October, 2019.

“Water quality trading and the Maryland Agricultural Cost Share program: Implications for cover crop adoption and water quality in the Chesapeake Bay.” Maryland Department of Agriculture. Annapolis, Maryland, March, 2019.

“Water quality trading in the presence of existing cost share programs: Implications for water quality management in the Chesapeake Bay.” Agricultural Outlook and Policy Conference. Annapolis, Maryland, January, 2019.

“Effectiveness of Maryland’s cover crop program for the nitrogen abatement in the Chesapeake Bay.” Poster presented at the AGNR Global Challenges: Building Healthy Food Systems Conference. College Park, Maryland, October, 2018.

“Water quality trading in the presence of existing agricultural cost-share programs: Implications for nitrogen abatement in the Chesapeake Bay.” Chesapeake Bay Commission, Annapolis, Maryland, October, 2018.

“Cost sharing for agricultural conservation practices and water quality impacts in the Chesapeake Bay Watershed.” Chesapeake Bay Foundation, Annapolis, Maryland, May, 2017.

“Effectiveness of Maryland’s cover crop program for the nutrient abatement in the Chesapeake Bay.” Maryland Department of Agriculture. Annapolis, Maryland, February, 2017.

“Cost sharing for agricultural conservation practices and water quality impacts in the Chesapeake Bay Watershed.” United States Geological Survey, Maryland-Delaware-District of Columbia Water Science Center, Baltimore, Maryland, February, 2017.

“Opportunities for agricultural producers in Maryland’s nutrient trading program.” Maryland Farm Bureau Convention. Ocean City, Maryland, December, 2016.

“Behavioral response to agricultural cost sharing and implications for water quality in the Chesapeake Bay Watershed.” Agricultural Outlook and Policy Conference. Annapolis, Maryland, December, 2016.

“Economic fundamentals of nutrient trading.” Agricultural and Environmental Law Conference. Annapolis, Maryland, November, 2016.

“Agricultural cost sharing and water quality in the Chesapeake Bay.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2016.

“Incentives for agricultural and urban stormwater management practices: Implications for water quality in the Chesapeake Bay.” Environmental Finance Center. College Park, Maryland, April 2016.

“Fundamentals of nutrient trading.” Nutrient Trading Symposium sponsored by Maryland Department of Agriculture, Maryland Department of Environment and Harry Hughes Center for Agroecology, Wye Mills, Maryland, January, 2016.

“Agricultural best management practices and cost sharing.” Agricultural Outlook and Policy Conference. Annapolis, Maryland, December, 2014.

“Nutrient trading in Maryland for the Chesapeake Bay TMDL.” Maryland Department of the Environment. Baltimore, Maryland, January, 2014.

“Additionality and the adoption of agricultural conservation practices.” United States Department of Agriculture/Farm Foundation. Washington, DC, August, 2013.

“Additionality and the adoption of conservation practices.” Economic Research Service United States Department of Agriculture. Washington, DC, October, 2010.

“Agricultural water security and instream flows for endangered species.” Sonoma Ecology Center. Sonoma, California, December, 2009.

“Efficiency and design lessons from the Great Miami River Watershed Water Quality Credit Trading Program.” Miami Conservancy District. Dayton, Ohio, September, 2009.

“Spatial estimation of water demand and supply for salmon recovery.” Salmon Coalition. Windsor, California, July, 2006.

“Agricultural and urban water management.” Sonoma County Water Agency. Ukiah, California, October, 2005.

***Extension Presentations on Urban Stormwater Management and Lawn Fertilizer Impacts in the Chesapeake Bay and Other Regions***

“Incentives and barriers to household adoption of advanced septic systems and urban stormwater management practices.” University of Maryland Extension, Environmental and Natural Resources In-Service Training, April 2026, College Park, MD.

“Focusing on fertilizer: A new tool to target lawn fertilizer outreach.” University of Connecticut, Center for Land Use Education and Research, February 2026. (virtual)

“Spatial modeling of household fertilizer behavior: Implications for nonpoint nutrient-reduction programs.” New York State Department of Environmental Conservation. June, 2024. (virtual)

“Integrating spatial modeling of household fertilizer behavior with nitrogen transport models to inform nonpoint nutrient-reduction programs.” Long Island Sound Research Conference, Science Serving the Sound. Port Jefferson, New York, May, 2024.

“Tackling local nitrogen pollution: Reducing fertilizer in communities.” Long Island Sound Coastal Watershed Network. January, 2024. (virtual)

“Hydro-bio-geo-socio-chemical interactions and the sustainability of residential landscapes.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2023.

“Household adoption of lawn conversion best management practices and lawn fertilizer behaviors.” University of Maryland Extension, Home & Garden Information Center, and Maryland Master Gardeners. Ellicott City, Maryland. November, 2022. (virtual)

“Modeling multi-scale influences on household lawncare decisions: Formal and informal neighborhood effects on fertilizer use in the Baltimore Metro Region.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2022.

“Barriers and transaction costs in household adoption of rain gardens: Evidence from the Baltimore Metro Region” University of Maryland AGNR Cornerstone Event: Optimize Urban Environments Through Design, Green Technology, and Community Engagement. College Park, Maryland, October, 2022.

“Residential lawn fertilizer use and nitrogen loading intensity across the Long Island Sound Watershed.” Long Island Sound Research Conference. Bridgeport, Connecticut. May 2022.

“Residential lawn fertilizer use and nitrogen loading intensity across the Long Island Sound Watershed.” Long Island Sound Coastal Watershed Network. May 2022. (virtual)

“Best management practices for urban stormwater management and rebate incentive programs.” Virtual Forum for Behavior Change in Stewardship Practices, Chesapeake Bay Trust, February, 2022.

“Rain garden and conservation landscaping rebate programs.” Environmental Protection Agency Baltimore Urban Waters Partnership. Catonsville, Maryland, December, 2021.

“Barriers for household adoption of lawn conversion practices.” Howard County Office of Community Sustainability. Columbia, Maryland, November, 2021.

“Residential lawn fertilizer management in the Long Island Sound Watershed.” Long Island Sound Study, Scientific Technical Advisory Committee. November 2021.

“Barriers and transaction costs for rain garden adoption.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2021.

“Residential lawn and landscape practices across the Long Island Sound Watershed.” Environmental Protection Agency, New York Sea Grant, Connecticut Sea Grant, and Long Island Sound Study. September 2021.

“Lawn fertilizer behavior in the Baltimore Metropolitan Region.” Environmental Protection

Agency Baltimore Urban Waters Partnership. Catonsville, Maryland, March, 2021.

“Adoption of household stormwater management practices and lawn fertilizer behavior.” Maryland Sea Grant Extension Watershed Specialist Group. December, 2020.

“Lawn fertilizer management in the Baltimore Metropolitan Region.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2020.

“Residential lawn fertilizer management decisions.” Long Island Sound Study and Connecticut Sea Grant, April, 2020.

“Household willingness to pay for stream restoration on private and public land: Evidence from the Baltimore Metropolitan Region.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2018.

“Price-based policies for managing residential development and impacts to water quality in the Baltimore Region.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2017.

“Household response to environmental incentives for rain garden adoption.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2015.

“Stormwater and land-use planning in the Upper Western Shore.” Upper Western Shore Tributary Team. Forest Hill, Maryland, August 2014.

“Adoption of household stormwater best management practices.” Montgomery County Clean Water Summit. Silver Spring, Maryland, March, 2014.

“Stormwater remediation fees and incentives for rain garden adoption.” Baltimore Urban Waters Partnership. Catonsville, Maryland, March, 2014.

“Incentives and barriers for rain gardens”. Columbia Association, Howard County Office on Environmental Sustainability, and Alliance for the Chesapeake Bay. Columbia, Maryland, March, 2014.

“Nutrient trading in Maryland for the Chesapeake Bay TMDL.” Maryland Department of the Environment. Baltimore, Maryland, January, 2014.

“Stormwater management practices.” AGNR Extension In-Service Workshop. Annapolis, Maryland, January, 2014.

“Adoption of household stormwater management practices.” Maryland Sea Grant Extension Watershed Specialist Group. College Park, Maryland, July, 2013.

“Development trends and the impact of OSDS tier regulations on reservoir water supply in the Baltimore Metropolitan Region.” Baltimore Metropolitan Council Reservoir Technical Group.

Baltimore, Maryland, May, 2013.

“Water quality implications from the septic bill regulations.” Baltimore County Commission on Environmental Quality. Towson, Maryland, February, 2013.

***Extension Presentations on Land-Use Policies for Farmland and Forest Conservation***

“Smart growth from here: Towards a sustainable and equitable Maryland for agriculture, the environment and natural resources.” National Center for Smart Growth. Annapolis, Maryland, May, 2024.

“Adaptation of agricultural land use to sea level rise and saltwater intrusion.” University of Maryland AGNR Cornerstone Event: Advancing Innovative, Profitable, and Sustainable Agricultural Production Systems. College Park, Maryland, October, 2023.

“Farmland and forest conservation: Evaluating successes and failures for Smart Growth in Maryland and the United States.” Maryland Land Conservation Conference. Kent Island, Maryland. June 2022.

“Farmland and forest conservation: Evaluation of smart growth policies and tools.” Smart Growth Network, Maryland Department of Planning and National Center for Smart Growth, July, 2021 (virtual).

“Smart growth 20 years later: Impact on farm and forest conservation.” AGNR Cornerstone Event: Ensure a Clean & Healthy Chesapeake Bay. College Park, Maryland, October, 2019.

“Maryland’s Forest Conservation Act and the impact on residential development and forest cover change.” Maryland Land Conservation Conference. Linthicum Heights, Maryland, May 2019.

“The effectiveness of zoning and the Forest Conservation Act for land preservation.” Cecil County Department of Land Use & Development Services. Elkton, Maryland, October 2018.

“Land conservation approaches for the Chesapeake Bay watershed.” Chesapeake Conservation Partnership. Annapolis, Maryland, August 2018.

“Maryland’s Forest Conservation Act and the impact on residential development and forest cover change.” Baltimore Urban Waters Partnership Meeting. Catonsville, Maryland, December, 2017.

“Evaluation of land-use policy options, incentives and planning tools in the Chesapeake Bay Watershed.” Chesapeake Bay Program Maintain Healthy Watersheds Goal Implementation Team and Land Use Work Group. Annapolis, Maryland, May 2017.

“Growth management policies for residential development.” Chesapeake Environmental Protection Association. Edgewater, Maryland, May 2015.

“Synergies between the Forest Conservation Act and land preservation programs.” Forest

Service Statewide Programs, Maryland Department of Natural Resources. Annapolis, Maryland, April, 2015.

“Forest Conservation Act and residential development.” Sustainable Forestry Council, Maryland Department of Natural Resources. Annapolis, Maryland, March, 2015.

“Maryland’s Forest Conservation Act and the impact on residential development and forest cover change.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2014.

“Modeling the effect of downzoning on spatial development patterns in Baltimore County: A pioneer in smart growth.” National Center for Smart Growth, University of Maryland, College Park, Maryland, September, 2014.

“Forecasting exurban development for transportation and infrastructure planning.” Baltimore County Department of Planning. Towson, Maryland, February, 2014.

“Maryland’s Forest Conservation Act and the impact on residential development and forest cover change.” Baltimore County Department of Environmental Protection and Sustainability. Towson, Maryland, February, 2014.

“The effect of rural downzoning on residential development.” Baltimore Ecosystem Study Annual Meeting. Baltimore, Maryland, October, 2013.

“Modeling residential development in the Baltimore Metropolitan Region.” Maryland Department of Planning. Baltimore, Maryland, October, 2013.

“Mapping and modeling low-density residential development in the Chesapeake Bay Watershed.” Chesapeake Bay Program Land Use Work Group. Annapolis, Maryland, June, 2013.

“The effect of the septic bill (SB 236) in Maryland.” Agricultural Outlook and Policy Conference. Annapolis, Maryland, March, 2013.

“Land-use and environmental policies impacts on residential development.” Baltimore County Department of Environmental Protection and Sustainability. Towson, Maryland, February, 2013.

“Urban sprawl and forest conservation.” United States Forest Service. Catonsville, Maryland, January, 2013.

“Residential development, septic bill regulations, and rural-urban zoning.” Baltimore County Department of Environmental Protection and Sustainability. Towson, Maryland, July, 2012.

“Land conservation strategies for habitat and open space protection.” The Nature Conservancy. San Francisco, California, July, 2003.

“Land conservation strategies for habitat and open space protection.” Sonoma County

Agricultural Preservation and Open Space District. Santa Rosa, California, March, 2003.

“Spatial estimation of conservation easement values.” Sonoma County Agricultural Preservation and Open Space District. Santa Rosa, California, April, 2002.

“Spatial economic models of deforestation.” Mexican Ministry of the Environment and Natural Resources (SEMARNAT). Mexico City, Mexico, February, 2002.

## **SERVICE AND OUTREACH**

### **Editorships, Editorial Boards, and Reviewing Activities**

#### ***Reviewing Activities for Journals and Presses***

Journal Reviewer and Referee for:

*Journal of the Association of Environmental and Resource Economists; Journal of Environmental Economics and Management; American Journal of Agricultural Economics; Proceedings of the National Academy of Sciences; Nature Communications; Land Economics; Environmental and Resource Economics; Resources and Energy Economics; Energy Economics; Natural Resource Modeling; Applied Economic Perspectives and Policy; Journal of Economic Geography; Journal of Environmental Management; Journal of Agricultural and Resource Economics; Western Economic Forum; Journal of Soil and Water Conservation; International Journal of Remote Sensing; Conservation Biology; Ecological Applications; Journal of the American Water Resources Association; Water Resources Research*

#### ***Reviewing Activities for Agencies and Foundations***

National Science Foundation, Decision, Risk, and Management Sciences Grant Program, 2023.

United States Department of Agriculture, Economic Research Service, “Major Uses of Land in the United States”, 2023.

Chesapeake Bay Trust, Outreach and Restoration Grant Program, review panel member, 2022 & 2023.

Chesapeake Bay Program, “The Chesapeake Bay Land Change Model: A Stochastic Model for Simulating Regional Patterns of Residential and Commercial Development”, 2016.

Maryland Department of Planning and American Farmland Trust, “The Future of Sustainable Farming and Forestry in Maryland”, 2016.

United States Geological Survey, “Bridging Connections between Models and Decisions Impacting Healthy Watersheds”, 2014.

United States Department of Agriculture, Economic Research Service, “Additionality in US Agricultural Conservation and Offset Programs”, 2013.

Eastern Shore Land Conservancy and Maryland Center for Agroecology, “Downzoning in Maryland”, 2012.

## **Committees, Professional & Campus Service**

### ***Campus Service - Department***

Faculty Advisory Committee (chair), 2025-present.  
Faculty Annual Review & Merit Pay Committee, 2025-present  
Faculty Advisory Committee, 2023-2025.  
Library/Outreach Committee, 2023-present.  
Extension Committee, 2014-2015 & 2021-present.  
Faculty Search Committee, 2017-2018, 2019-2020 & 2023-2024.  
Ad hoc Committee on Incentives for Departmental Funding (chair), 2023  
Director of Financial Services Search Committee (chair), 2022  
APT Committee, 2020  
Qualifying Paper Committee, 2019-2022.  
Faculty Search Committee (chair), 2018-2019.  
Extension Committee (chair), 2017-2020.  
Graduate Committee, 2014-2017.  
Undergraduate Committee, 2015-2018.  
Departmental Seminar Committee, 2012-2013.  
Commons Committee. 2006-2011.  
Community Economics Faculty Search Committee, 2007.  
Computer Information Technology Committee, 2007-2011.  
Departmental Seminar Committee, 2007-2011.  
Secretary for Faculty Meetings, 2007- 2008.  
Curriculum Committee for the Master’s Certificate in Land Economics and Rural Real Estate, 2008-2009.  
Graduate Advisory Committee, 2008-2011.  
Resource Economics Prelim Examination Committee, 2009-2011.  
Resource Economics Work Group Leader, 2009-2011.

### ***Campus Service - College***

AGNR Advancing Our Strategic Initiatives Fearlessly Forward, Competitive Grant Program, review panel member 2024.  
AGNR Strategic Initiative Implementation Team, Chesapeake Bay, 2019-2021 (co-chair).  
Maryland Agricultural Experimental Station, Competitive Grant Program, review panel member 2021, 2024 & 2025.  
AGNR Strategic Initiative Implementation Team, Chesapeake Bay, 2018-2019 & 2022-2024 member.  
Faculty Marshal Winter Commencement, 2016.  
Agricultural and Natural Resource Policy Internship Program, Selection Committee, 2009.

### ***Campus Service - University***

University Senate Committee, 2013-2015.

***Other Non-University Committees, Memberships, Panels, etc.***

Agricultural and Applied Economics Association, Mentoring Award Committee, 2025-present.

Northeastern Agricultural and Resource Economics Association, Mentor in Scholar's Circle, 2024-2025 (Water quality scholar's circle) & 2025-present (Agriculture scholar's circle). (virtual)

Maryland Department of Natural Resources, Maryland Stream ReLeaf Coordinating Committee, Annapolis, Maryland, 2015-present.

National Center for Smart Growth, College Park, Maryland, 2015-present.

Baltimore Ecosystem Study, Catonsville, Maryland, 2014-present.

Baltimore Urban Waters Federal Partnership, Baltimore, Maryland, 2013-present.

Chesapeake Bay Program, Land Use Work Group, Annapolis, Maryland, 2012-2018.

National Research Council Workshop on Needs and Research for Land Change Modeling, Chapel Hill, North Carolina, 2012.

Environmental Law Institute, Conservation Thresholds Working Group, Washington, DC, 2008-2010.

**PUBLIC ENGAGEMENT, SCHOLARSHIP AND PRACTICE**

**Media Appearances and Interviews**

***Riparian buffers***

Lancaster Farming, "[Study Finds Most Farmers Want Upfront Pay for Buffer Projects, Not Pay-for-Success](#)", By Matt Enright, November 14, 2025. [Feature article on research]

Hughes Center for Agro-Ecology, "[Evaluating Riparian Buffer Incentive Programs](#)", By Josh Bollinger, September 2024. [Press release on research]

***Lawn fertilizer***

Long Island Sound Partnership, "[Study on Residential Fertilizer Use Helps to Identify Nitrogen 'Hot Spots'](#)", By Robert Burg, May 22, 2024. [Feature article on research]

Public Radio WSHU, "[Will Long Island Sound residents make changes to help protect it?](#)", By Molly Ingram, April 7, 2025. [Research covered]

### ***Maryland's Forest Conservation Act***

The Chesapeake Bay Journal, "[MD's Forest Conservation Act need to be revisited](#)", Op-ed By Ben Alexandro, Maryland League of Conservation Voters, March 2, 2018; updated Jul 10, 2020. [Research covered]

Baltimore Sun, "[Anne Arundel, Howard take steps to preserve trees as researchers develop a map of forest loss across Maryland](#)", By Scott Dance, December 17, 2019. [Interviewed and quoted]

Capital Gazette, "[Chesapeake Bay Foundation trying to strengthen state forest law](#)", By Chase Cook, March 1, 2018; updated June 25, 2019. [Interviewed and research covered]

Capital Gazette, "[Environmentalists push to improve Maryland conservation law: 'The most forested areas are the least protected'](#)", By Scott Dance, February 18, 2018; updated June 29, 2019. [Interviewed and research covered]

Capital Gazette, "[Legislation can help preserve forests](#)", Op-ed By Alison Prost, Maryland Executive Director, Chesapeake Bay Foundation, February 7, 2018; updated June 23, 2019. [Research covered]

### ***Urban stormwater management***

Maryland Today, "[Why Homeowners Say 'No Thanks' to Cost-Sharing](#)", By Kimbra Cutlip, June 09, 2022 [Press release on research]

Maryland Today, "[Paddling Against the Current on Stream Restoration](#)", By Kimbra Cutlip, April 26, 2022. [Press release on research]

## **Legislative Involvement**

### ***Riparian buffers***

"Nutrient Management - Tidal Buffer - Vegetative Buffers and Restrictions on Fertilizer Application." Written and Oral Testimony on Senate Bill 898 to Maryland Senate Education, Energy, and Environment Committee, Annapolis, Maryland, 2025.

"Nutrient Management - Tidal Buffer - Vegetative Buffers and Restrictions on Fertilizer Application." Written and Oral Testimony on House Bill 1175 to Maryland House of Delegates Environment and Transportation Committee, Annapolis, Maryland, 2025.

### ***Maryland's Forest Conservation Act***

"Maryland's Forest Conservation Act and the Impact on Residential Development and Forest Cover Change." Chesapeake Bay Commission & Select Members of Maryland Senate and House of Delegates, Greenbelt, Maryland, 2018.

"Forest Conservation Act - Exemption, Reforestation Rate, and Forest Conservation Fund – Alterations." Oral Testimony with Research Presentation on House Bill 599 to Maryland House

Environmental and Transportation Committee, Annapolis, Maryland, 2017.

“Forest Conservation Regulations in Maryland.” Chesapeake Bay Foundation, Annapolis, Maryland, 2017.

**Advisory Involvement with Public and Non-profit Agencies**

Maryland Department of Agriculture, Advisory Committee for the Leaders in Environmentally Engaged Farming (LEEF) Program, Annapolis, Maryland, 2026-present.

Chesapeake Bay Program, Scientific and Technical Advisory Committee, Steering Committee for Workshop on Advancing Market-Based Approaches in the Agricultural Sector to Support Chesapeake Bay Watershed Restoration, Annapolis, Maryland, 2025-present.

Chesapeake Bay Program, Scientific and Technical Advisory Committee, Social Science Workgroup, Annapolis, Maryland, 2025-present.

Chesapeake Bay Program, Scientific and Technical Advisory Committee, Annapolis, Maryland, 2014-2018.

Cecil County Green Infrastructure Plan Steering Committee, Elkton, Maryland, 2018-2019.