

Charles B. Sims

Howard H. Baker Jr. Center for Public Policy
Department of Economics
University of Tennessee - Knoxville
1640 Cumberland Ave
Knoxville, TN 37996

Phone: 865.974.3825
Fax: 865.974.8777
Email: cbsims@utk.edu

ACADEMIC POSITIONS AND PROFESSIONAL AFFILIATIONS

- 2023-Present Director, Center for Energy, Transportation & Environmental Policy,
Baker School of Public Policy and Public Affairs
- 2017-2023 Director, Energy and Environment Program, Howard H. Baker Jr. Center
for Public Policy
- 2013-2017 Faculty Fellow, Howard H. Baker Jr. Center for Public Policy
- 2017-Present Associate Professor of Economics, University of Tennessee
- 2013-2017 Assistant Professor of Economics, University of Tennessee
- 2009-2013 Assistant Professor of Applied Economics, Utah State University

EDUCATION

- PhD Economics University of Wyoming, 2009
- M.S. Forestry (Environmental Policy minor) University of Tennessee-Knoxville, 2004
- B.S. Forest Resource Management University of Tennessee-Knoxville, 2001

RESEARCH

* graduate student co-author, ** graduate student co-author for which I was a principal advisor, # post-doc co-author

Editorial Positions

Co-editor, *Resource and Energy Economics*, 2021-Present
Special Issue Guest Editor, *Journal of Economic Behavior & Organization*, 2016

Journal Articles

51. Palikhi, H. **, G. Schaur, and C. Sims. Environmental policy uncertainty. *Journal of the Association of Environmental and Resource Economists*, conditionally accepted.
50. Blachly, B. #, C. Sims, and T. Warziniack. Will ecosystem services attract investors? *Land Economics*, accepted.
49. Horan, R., C. Sims, and D. Finnoff. Endogenous Risk and Climate-Induced Habitat Loss: An Application to Seal Management after the November Rain. *Journal of the Association of Environmental and Resource Economists*, forthcoming.
48. Meadows, B. ** and C. Sims. 2023. Can we love invasive species to death?: Creating Efficient Markets for Invasive Species Harvests. *Environmental and Resource Economics*, 85: 443-477.
47. Sims, C., P. Armsworth, J. Blackwood, B. Fitzpatrick, D. Kling, S. Lenhart, M. Neubert, M. Papes, K. Shea, J. Sanchirico, and M. Springborn. 2023. Leveraging

- federalism for flexible and robust management of social-ecological systems. *People and Nature*, 5(2): 446-454.
46. Albers, Heidi J., K. Kroetz, C. Sims, D. Finnoff, R. Horan, R. Liu, E. Nelson, and J. Merkle. 2023. Integrating Economics and Ecology for Seasonal Migratory Species Conservation Planning: Functional Connectivity and Seasonality. *Review of Environmental Economics and Policy*, 17(1): 111-131.
45. Castonguay, F.* , J. Blackwood, E. Howerton, K. Shea, C. Sims, and J. Sanchirico. 2023. Optimal Spatial Evaluation of a Pro Rata Vaccine Distribution Rule for COVID-19. *Nature: Scientific Reports*, 13(1): 2194.
44. Ali, G. G.* , I. H. El-adaway, C. Sims, J. S. Holladay, C. Chen. 2023. Reducing the vulnerability of electric power infrastructure against natural disasters by promoting distributed generation. *Natural Hazards Review*, 24(2): 04044052.
43. Hochard, J., N. Abashidze, R. Bawa, R. Etheridge, Y. Li, A. Peralta, C. Sims, T. Vogel. 2023. Air temperature spikes increase bacteria presence in drinking water wells downstream of hog lagoons. *Science of The Total Environment*, 867: 161426.
42. Ali, G. G.* , I. H. El-adaway, C. Sims, J. S. Holladay, C. Chen. 2022. Policies and Incentives for Promoting Distributed Solar Generation: Impact on Electric Power Infrastructure. *Journal of Infrastructure Systems*, 28(4): 04022034.
41. Trevino-Martinez, S.* , R. Sawhney, C. Sims. 2022. Energy-carbon neutrality optimization in production scheduling via solar net metering. *Journal of Cleaner Production*, 380: 134627.
40. Thompson, B. K.* , C. Sims, T. Fisher, S. Brock* , Y. Dai* , S. Lenhart. 2022. A discrete-time bioeconomic model of free-roaming cat management: A case study of Knox County, Tennessee. *Ecological Economics*, 201, 107583.
39. Ali, G. G.* , I. H. El-adaway, C. Sims, J. S. Holladay, C. Chen. 2022. Studying Dynamic Pricing in Electrical Power Markets with Distributed Generation: Agent-based Modeling and Reinforcement Learning Approach. *Journal of Energy Engineering*, 148(5): 04022030.
38. Kang, N.* , C. Sims, and S. Cho. 2022. Spatial and taxonomic diversification for conservation investment under uncertainty. *Environmental Conservation*, 49(3): 172-179.
37. Welch, J. G., C. Sims, and M. L. McKinney 2022. Does an Urban Wilderness Promote Gentrification? A Case Study from Knoxville, Tennessee, USA. *Sustainability*, 14(2): 973.
36. Blackwood, J. C., J. Duan* , M. M. Malakhov* , J. J. Pellet* , I. Phadke* , S. Lenhart, C. Sims, and K. Shea. 2021. Governance structure affects transboundary disease management under alternative objectives. *BMC Public Health*, 21(1): 1-13.
35. Sims, C., S. Null, J. Medellin-Azuara, and A. Odame** . 2021. Hurry up or wait: Why private investments in climate change adaptation are delayed. *Climate Change Economics*, 12(4): 2150012.
34. Sanchirico, J., J. Blackwood, B. Fitzpatrick, D. Kling, S. Lenhart, M. Neubert, K. Shea, C. Sims, M. Springborn. 2021. Political Economy of Renewable Resource Federalism. *Ecological Applications*, 31(3): e02276.

33. Sims, C. and D. Finnoff. 2020. Uncertainty, hysteresis, and lockdowns. *Covid Economics* 54: 29-62.
32. Maloney, M., J. Merkle, D. Aadland, D. Peck, R.D. Horan, K. Monteith, T. Winslow, J. Logan, D. Finnoff, C. Sims, and B. Schumaker. 2020. Chronic Wasting Disease Undermines Efforts to Control the Spread of Brucellosis in the Greater Yellowstone Ecosystem. *Ecological Applications* 30(6): e02129.
31. Greene, D, C. Sims, M. Muratori. 2020. Two Trillion Gallons: Fuel Savings from Fuel Economy Improvements to US Light-duty Vehicles, 1975-2018. *Energy Policy* 142: 111517.
30. Sims, C., D. Aadland, D. Finnoff, J. Hochard. 2020. What are the benefits of delisting endangered species and who receives them?: Lessons from the gray wolf recovery in Greater Yellowstone. *Ecological Economics* 174: 106656.
29. El-adaway, I., C. Sims, M. Eid*, Y. Liu**, G. Ali*. 2020. Preliminary attempt toward better understanding the impact of distributed energy generation: An agent-based computational economics approach. *Journal of Infrastructure Systems* 26(1): 04020002.
28. Davis, R.** and C. Sims. 2019. Frack to the future: What enticed small firms to enter the natural gas market during the hydraulic fracturing boom? *Energy Economics*. 81: 960-973.
27. Sims, C. and H. Palikhe**. 2019. Proposed changes would increase the cost and decrease the benefit of listing species as endangered. *Choices*. 34(2): 1-10.
26. Warziniack, T., C. Sims, and J. Haas. 2019. Fire and the joint production of ecosystem services: A spatial-dynamic optimization approach. *Forest Policy and Economics*. 107: 101926.
25. Sims, C. and S. Null. 2019. Climate forecasts and flood mitigation. *Southern Economic Journal*. 85(4): 1083-1107.
24. Markel, E.** , C. Sims, B. C. English. 2018. Policy uncertainty and the optimal investment decisions of second-generation biofuel producers. *Energy Economics* 76: 89-100.
23. Sims, C., R. Horan, B. Meadows**. 2018. Come on feel the noise: ecological foundations in stochastic bioeconomic models. *Natural Resource Modeling* 31(4): e12191.
22. Sims, C., D. Finnoff, J. Shogren. 2018. Taking One For the Team: Is collective action more responsive to ecological change? *Environmental and Resource Economics* 70(3): 589-615.
21. Heines, B.* , S. Lenhart, C. Sims. 2018. Assessing the economic tradeoffs between prevention and suppression of forest fires. *Natural Resource Modeling* 31(1): e12159.
20. LaRiviere, J., D. Kling, J. Sanchirico, C. Sims, M. Springborn. 2018. Characterizing Uncertainty and Learning in the Economics of Resource and Environmental Management. *Review of Environmental Economics and Policy* 12(1): 92-112.
19. Sims, C., D. Finnoff, A. Hastings, J. Hochard. 2017. Listing and delisting thresholds under the Endangered Species Act. *American Journal of Agricultural Economics* 99(3): 549-570.

18. Sims, C., D. Finnoff, C. F. Mason. 2016. Thresholds, tipping points, and random events in dynamic economic systems. *Journal of Economic Behavior & Organization* 132(B): 1-4.
17. Sims, C., D. Finnoff, S. O'Regan[#]. 2016. Public control of rational and unpredictable epidemics. *Journal of Economic Behavior & Organization* 132(B): 161-176.
16. Sims, C., D. Finnoff. 2016. Opposing irreversibilities and tipping point uncertainty. *Journal of the Association of Environmental and Resource Economists* 3(4): 985-1022.
15. Burton, M., C. Sims. 2016 Understanding Railroad Investment Behaviors, Regulatory Processes, and Related Implications for Efficient Industry Oversight. *Review of Industrial Organization* 49(2): 263-288.
14. Liu, Y.^{**}, C. Sims. 2016. Spatial-dynamic externalities and coordination in invasive species control. *Resource and Energy Economics* 44: 23-38.
13. Sims, C., D. Finnoff, J. Shogren. 2016. Bioeconomics of Invasive Species: Using Real Options Theory to Integrate Ecology, Economics, and Risk Management. *Food Security* 8(1): 61-70.
12. Aadland, D., C. Sims, D. Finnoff. 2015. Spatial Dynamics of Optimal Management in Bioeconomic Systems. *Computational Economics* 45(4): 545-577.
11. Sims, C., D. Aadland, J. Powell, D. Finnoff, and B. Crabb^{*}. 2014. Complementarity in the provision of ecosystem services reduces the cost of mitigating amplified natural disturbance events. *Proceedings of the National Academy of Sciences* 111(47): 16718-16723.
10. Caplan, A. J., C. Sims, E. Anderson^{*}. 2014. Measuring the Environmental Cost of Hypocrisy, *Ecological Economics* 108: 124-135.
9. Sims, C., D. Finnoff. 2013. When is a "wait and see" approach to invasive species justified? *Resource and Energy Economics* 35(3): 235-255.
8. Sims, C. 2013. Influencing natural forest disturbance through timber harvesting: Tradeoffs among disturbance processes, forest values, and timber condition. *American Journal of Agricultural Economics* 95(4): 992-1008.
7. Sims, C., D. Aadland, D. Finnoff, J. Powell. 2013. How Ecosystem Service Provision Can Increase Forest Mortality from Insect Outbreaks. *Land Economics*. 89(1): 154-176.
6. Sims, C. 2013. Hypothetical Market Familiarity and the Disconnect Between Stated and Observed Values for Green Energy. *International Journal of Energy Economics and Policy*. 3(1): 10-19.
5. Sims, C., D. Finnoff. 2012. The role of spatial scale in the timing of uncertain environmental policy. *Journal of Economic Dynamics and Control*. 36(3): 369-382.
4. Sims, C. 2011. Optimal timing of salvage harvest in response to a stochastic infestation. *Natural Resource Modeling* 24(3): 383-408.
3. Sims, C., D. Aadland, D. Finnoff. 2010. A Dynamic Bioeconomic Analysis of Mountain Pine Beetle Epidemics. *Journal of Economic Dynamics and Control* 34(12): 2407-2419.

2. Finnoff, D., C. McIntosh, J. Shogren, C. Sims, T. Warziniack. 2010. Invasive Species and Endogenous Risk. *Annual Review of Resource Economics* 2: 77-100.
1. Sims C. B., D. G. Hodges, J. M. Fly, B. Stephens. 2005. Modeling acceptance of a shuttle system in the Great Smoky Mountains National Park. *Journal of Park and Recreation Administration* 23:25–44.

Book Chapters

5. Davis, R. *, J. S. Holladay, C. Sims. “Coal-Fired Power Plant Retirements in the U.S.”, in Kotchen, M., Deryugina, T., Stock, J. (Eds.), *Environmental and Energy Policy and the Economy*, volume 3, National Bureau of Economic Research, University of Chicago Press 2022.
4. Penchoff, D. A., C. Sims, T. L. Windus. “Rare Earth Elements and Critical Materials: Uses and Availability”, in Penchoff, D. A., Windus, T. L. , Peterson, C. C. (Eds.), *Rare Earth Elements and Actinides: Progress in Computational Science Applications*, ACS Publications 2021.
3. Heines, B. *, S. Lenhart, C. Sims. “Balancing Prevention and Suppression of Forest Fires with Fuel Management as a Stock”, in Yin G., Zhang Q. (Eds.), *Modeling, Stochastic Control, Optimization, and Applications. The IMA Volumes in Mathematics and its Applications*, vol. 164. Springer, Cham 2019.
2. Bossenbroek, J., A. Croskey, D. Finnoff, L. Iverson, S. McDermott, A. Prasad, C. Sims, D. Sydnor. “Evaluating the Economic Costs and Benefits of Slowing the Spread of Emerald Ash Borer in Ohio and Michigan”, in Keller, R., Cadotte, M., Sandiford, G. (Eds.), *Invasive Species in a Globalized World*. University of Chicago Press 2014.
1. Finnoff, D., R. Horan, S. McDermott, C. Sims, J. Shogren. Economic Control of Invasive Species, in Levin, S (Ed.), *Encyclopedia of Biodiversity 2nd Ed.* Elsevier/Academic Press 2013.

Working Papers

- Yang, D. ** and C. Sims. Climate change adaptation with deep uncertainty
- Xu, X. *, C. Chen, J. S. Holladay, G. Jones Jr *, T. Roberson#, and C. Sims. When Do Incentive Programs Increase Solar Adoption Among Low-income Households?
- Sims, C. B. Blachly#, T. Warziniack. Natural capital externalities: Theory and application.
- Blachly, B.#, C. Sims, and T. Warziniack. The welfare gains from diversified environmental policies
- Davis, R. **, J. S. Holladay, and C. Sims. “Drivers of Coal Generator Retirements and their Impact on the Shifting Electricity Generation Portfolio in the U.S.”
- Shah, P., and C. Sims. “Multidimensional risk diversification for invasive species management: A quasi-dynamic portfolio theory approach”
- Conte, M., M. Gordon*, and C. Sims. “Quarantine fatigue thins fat-tailed coronavirus impacts in U.S. cities by making epidemics inevitable”

Hochard, J., R. Etheridge, M. Gomez*, Y. Li, A. Peralta, C. Sims, and T. Vogel “Casing out contaminants: Avoidance behavior along the hydrologic gradient”

Hochard, J, C. Sims, R. Etheridge, M. Gomez*, Y. Li, A. Peralta, and T. Vogel. “Prioritizing public and conservation investments to support human health at the urban-rural fringe”

Bostick, O.** , C. Chen, I. H. El-adaway, J. S. Holladay, and C. Sims “Behavioral Effects on the Demand for Solar Energy”

Sims, C., J. Mingie, S. Cho, P. Armsworth, X. Giam, M. Papes “Does more uncertainty incentivize risk diversification in conservation?”

Sims, C., Shing-I Yang, J. Welch. “Climate change is raising the opportunity cost of forest conservation in a biodiversity hotspot”

Roberson, T.# and C. Sims. “Will subsidies for distributed solar crowd out investment in large-scale solar farms?”

Meadows, B., C. Sims, J. S. Holladay. “Batteries, Transmission Lines, and Wind: How Multi-Regional Spatial and Temporal Power Sharing Could Work”

Warziniack, T., K. Bagstad, M. Knowles, C. Mihiar, A. Nehra, C. Rhoades, L. Sanchez, C. Sichko, C. Sims. “Natural capital accounting on forested lands in the United States: An application to the Colorado River Basin”

Bostick, O.** and C. Sims. “Policy Inconsistency and the Rise of Stranded Asses in the Oil Industry”

Sims, C., G. Ali*, J. S. Holladay, T. Roberson#, C. Chen, I. El-adaway. “The equity implications of pecuniary externalities on an electric grid”

Armsworth, P., B. Dilkina, R. Fovargue, X. Giam, C. Nolte, M. Papes. “Hierarchies in conservation”

Conference and Workshop Presentations

The welfare gains from diversified environmental policies. Association of Environmental and Resource Economists (AERE) Summer Conference: Portland, ME, May 31 - June 2, 2023.

Does an Urban Wilderness Promote Gentrification? A Case Study from Knoxville, Tennessee. Association for University Business and Economic Research Annual Conference: Boulder, Colorado, February 26-March 1, 2022.

Endogenous Risk and Habitat Loss: An Application to Seal Management After the November Rain. BIOECON Annual Conference: Jackson Hole, Wyoming, September 17-19, 2021

Drivers of Coal Generator Retirements and their Impact on the Shifting Electricity Generation Portfolio in the U.S. Association of Environmental and Resource Economists (AERE) Virtual Summer Conference: June 23-25, 2020.

Drivers of Coal Generator Retirements and their Impact on the Shifting Electricity Generation Portfolio in the U.S. Southeastern Energy and Environmental Economics Workshop: Atlanta, GA, October 24-25, 2019.

Managing Harp Seals After the Cold November Rain: Accounting for Arctic Warming and Population Stochasticity Rooted in Ecological Foundations. Southern Economic Association Annual Meeting: Fort Lauderdale, FL, November 23-25, 2019.

Multidimensional risk diversification for invasive species management: A quasi-dynamic portfolio theory approach. Association of Environmental and Resource Economists (AERE) Summer Conference: Incline Village, NV, May 30-31, 2019.

Is risk diversification a justification for providing multiple ecosystem services. Applications and Potential of Ecosystem Services Valuation within USDA – Advancing the Science. Washington, D.C. April 23-24, 2019.

How downscaled climate dynamics influence investments in FEW infrastructure. 12th Annual US-China Eco-Environmental Symposium. Yixing, Jiangsu Province, China. October 2018

Hurry up or wait: The effect of climate change and variability on the timing of private adaptation. World Congress of Environmental and Resource Economists: Gothenburg, Sweden, June 25-29, 2018.

Hurry up or wait: The effect of climate change and variability on the timing of private adaptation. Southern Economic Association Annual Meeting: Tampa, FL, November 17-19, 2017.

Rules of thumb for diversifying risk in invasive species control programs. International Union of Forest Research Organizations Congress: Freiburg, Germany, September 18-22, 2017.

Hurry up or wait: The effect of climate change and variability on the timing of private adaptation. Agricultural and Applied Economics Association (AAEA) Annual Meeting: Chicago, IL, July 30-August 1, 2017.

Understanding the impact of distributed generation: An agent-based computational economics approach to investigating dynamic human behavior of electric utility customers. Agent-Based Modeling 17: San Diego, CA, April 20-22, 2017.

The burden of success: Who should manage species removed from the endangered species list? Southern Economic Association Annual Meeting: Washington, DC, November 19-21, 2016.

Public control of rational and unpredictable epidemics. Association of Environmental and Resource Economists (AERE) Summer Conference: Breckenridge, CO, June 9-11, 2016.

Motivations for energy efficiency programs. Energy Efficiency, Conservation & Low-Income Households Workshop: Knoxville, TN, March 31, 2016.

Assessing the economic tradeoffs between prevention and suppression of forest fires. Southern Economic Association Annual Meeting: New Orleans, LA, November 21-23, 2015.

Taking one for the team: Is collective action more responsive to ecological change? BIOECON Annual Conference: Cambridge, UK, September 13-15, 2015.

Rational and unpredictable epidemics. Thresholds and Tipping Points in Dynamic Economic Systems Workshop: Knoxville, TN, July 27-28, 2015.

Rational stochastic epidemics and the optimal timing of public health interventions. Association of Environmental and Resource Economists (AERE) Summer Conference: San Diego, CA, June 3-5, 2015.

Opposing irreversibilities in environmental policy: Avoiding the point of no return or delaying the inevitable. Southern Economic Association Annual Meeting: Atlanta, GA, November 22-24, 2014.

Taking one for the team: Is collective action more responsive to ecological change?. Fifth World Congress of Environmental and Resource Economists, Istanbul, Turkey, June 28-July 2, 2014.

Linking listing and delisting decisions under the Endangered Species Act: A case study of gray wolves in the Northern Rocky Mountains. Fifth World Congress of Environmental and Resource Economists, Istanbul, Turkey, June 28-July 2, 2014.

Linking listing and delisting decisions for endangered species: A case study of gray wolves in the Northern Rocky Mountains. Western Agricultural Economics Association Conference: Colorado Springs, CO, June 22-24, 2014.

Water-saving infrastructure investment under hydrologic uncertainty. University of Tennessee Watershed Symposium: Knoxville, TN, February 18, 2014.

How Ecosystem Service Provision Can Increase Forest Mortality from Insect Outbreaks. China-US Joint Research Center for Ecosystem and Environmental Change: Gatlinburg, TN, Nov 18-19, 2013.

Opposing irreversibilities in environmental policy: Avoiding the point of no return or delaying the inevitable. Association of Environmental and Resource Economists (AERE) Summer Conference: Banff, Alberta, Canada, June 6-8, 2013.

Spatial dynamics of mountain pine beetle outbreaks with optimal forest management. BESTNet Workshop: Princeton, NJ, April 25-26, 2013.

How Ecosystem Service Provision Can Increase Forest Mortality from Insect Outbreaks. Ecosystem Services Partnership Conference: Portland, OR, July 31-August 4, 2012.

Spatial dynamics of optimal management in a predator-prey system: An application to mountain pine beetle epidemics. Association of Environmental and Resource Economists (AERE) Summer Conference: Asheville, NC, June 3-5, 2012.

Salvage harvesting following natural forest disturbance: The importance of disturbance characteristics in gauging management response. Association of Environmental and Resource Economists (AERE) Summer Conference: Asheville, NC, June 3-5, 2012.

Optimal Timing of Salvage Harvest in Response to Stochastic Infestation. 86th Annual Conference of the Western Economics Association: San Diego, CA, June 29-July 3, 2011.

The Role of Spatial Scale in the Timing of Uncertain Environmental Policy. American Economic Association Annual Meeting: Denver, CO, January 7-9, 2011.

The Role of Environmental and Economic Uncertainty in Invasive Species Control

- Decisions. Fourth World Congress of Environmental and Resource Economists: Montreal, Canada, June 28-July 2, 2010.
- Optimal Control of a Bounded Invasive Species Diffusion Process: An Application to the Emerald Ash Borer. Fourth World Congress of Environmental and Resource Economists: Montreal, Canada, June 28-July 2, 2010.
- Optimal Stochastic Environmental Policies: Implications for Invasive Species Management. 52nd Annual Conference on Great Lakes Research: Toledo, OH, May 18-22, 2009.
- The Disconnect Between Hypothetical and Observed Values for green energy in Tennessee. Int. Symposium on Society and Resource Management: Park City, UT. June 17-21, 2007.
- Assessing the Role of Outdoor Recreation in Rural Economic Development: A Case Study for the Obed Wild and Scenic River, TN. Int. Symposium on Society and Resource Management: Keystone, CO, June 2-6, 2004.
- Linking outdoor recreation and economic development: A feasibility assessment of the Obed Wild and Scenic River, Tennessee. Social Aspects and Recreation Research Symposium: San Francisco, CA, Feb 4-6, 2004.
- Travel cost modeling of the demand for rock climbing: An application to the Obed Wild and Scenic River. Annual Southern Forest Economics Workshop: St. Augustine. March 14-16, 2004.
- Modeling the demand for and value of OHV recreation in Tennessee. Southern Forest Economics Workers Annual Meeting: New Orleans, LA, March 17-18, 2003
- Demand and value of off-highway vehicle recreation in Tennessee. Annual Southern Forest Economics Workshop: New Orleans, LA, March 17-18, 2003.

Invited Presentations and Seminars

- The equity implications of pecuniary externalities on an electric grid. Colorado School of Mines, April 2023.
- Manufacturing Valuable Coal-Derived Products in Southern Appalachia. Southern States Energy Board, March 2022.
- Agent-based Model of Distributed Solar Adoption. Tennessee Valley Authority, February 2022.
- Manufacturing Valuable Coal-Derived Products in Southern Appalachia. University of Wyoming, Laramie, WY, October 2021.
- Combining mathematical epidemiological models with economic models to determine when and where to enact public social distancing mandates. University of California-Davis, Davis, CA, December 2020.
- How climate forecasts influence infrastructure investments. University of California-Davis, Davis, CA, July 2019.
- Uncertainty and irreversibility in human-environment systems. University of Toronto, Toronto, ON, March 2018.
- Hurry up or wait: The effect of climate change and variability on the timing of private

adaptation. Mississippi State University: Starkville, MS, October 2017.

Do climate change forecasts encourage private adaptation?: Water-saving irrigation investments under uncertainty. East Carolina University: Greenville, NC, February 2017.

The burden of success: Who should manage species removed from the endangered species list? Yale University: New Haven, CT, November 2016.

Opposing irreversibilities and tipping point uncertainty. Michigan State University: East Lansing, MI, January 2016.

Economic Potential of South Knoxville's Urban Wilderness. Great Smoky Mountains Regional Greenways Council: Knoxville, TN, January 2016.

Linking listing and delisting decisions under the Endangered Species Act: A case study of gray wolves in the Northern Rocky Mountains. Appalachian State University: Boone, NC, February 2015.

A Transitioning Energy Landscape in Tennessee. Tennessee Gas Association Conference: Knoxville, TN, October 2014.

Taking one for the team: Is collective action more responsive to ecological change?. Environmental Protection Agency: Washington, D.C., September 17, 2014.

Complementarity in the provision of ecosystem services reduces the cost of mitigating amplified natural disturbance events. Virginia Tech: Blacksburg, VA, May 2014.

Complementarity in the provision of ecosystem services reduces the cost of mitigating amplified natural disturbance events. Environmental Sciences Division, ORNL: Oak Ridge, TN, April 2014.

How ecosystem service provision can increase forest mortality from insect outbreaks. USDA Forest Service: Asheville, NC, November 2013.

When is a "wait and see" approach to invasive species justified? University of Tennessee: Knoxville, TN, January 2013

Spatial dynamics of mountain pine beetle epidemics with optimal forest management. Colorado State University: Fort Collins, CO, January 2013.

Regional Economic Impacts of Coal Bed Methane Water Management in the Powder River Basin of Wyoming. Utah State University: Logan, UT, November, 2010.

A Dynamic Economic Analysis of the Mountain Pine Beetle Epidemic. University of Tennessee Natural Resource Policy Center Seminar Series: Knoxville, TN, August, 2008.

White Papers, Reports and Popular Press

C. Sims, J. G. Welch, and B. Rushing. 2022. Economic Potential of the Tennessee RiverLine Water Trail, The Howard H. Baker Jr. Center for Public Policy, White Paper.

Meadows, B. ** and C. Sims. 2018. When Fish Grow Like Weeds: Options and Strategies for Managing Impacts of Invasive Asian Carp in Tennessee. The Howard H. Baker Jr. Center for Public Policy, Baker Policy Brief 10:18.

Sims, C., J. Welch, R.J. Davis **, Yinan Liu **, D. Yan **, C. Quistorff, M. Murray. 2018. The economic value of open space in the Cumberland Region. Final Report submitted to Cumberland Region Tomorrow.

- Bowen, E., Christiadi, R.J. Davis**, J. Deskins, C. Sims. 2018. The Economic Impacts and Risks Associated with Electric Power Generation in Appalachia. Final Report submitted to the Appalachian Regional Commission.
- Sims, C., Islam El-adaway, Mohamed S. Eid, Yinan Liu**. 2018. Using agent-based computational economics to understand the evolution of the electric grid in response to increased penetration of distributed solar generation. The Howard H. Baker Jr. Center for Public Policy, Baker White Paper 1:18.
- Sims, C. 2018. Reconciling Methods for Measuring U.S. Oil Dependence Costs. The Howard H. Baker Jr. Center for Public Policy, Baker White Paper 2:18.
- Kim, Bongkyun** and C. Sims. 2016. Why is Energy Efficiency Such a Hard Sell? The Howard H. Baker Jr. Center for Public Policy, Baker White Paper 1:16.
- Sims, C. Bongkyun Kim**, and Matthew Murray. 2016. The Economic Impact of Open Space on Residential Property Values in Tennessee. The Howard H. Baker Jr. Center for Public Policy, Baker Reports 6:16
- Sims, C., Bongkyun Kim**, and Jean Peretz. 2016. An Energy Scorecard for the American States: States ranked according to energy, economy, and environment. The Howard H. Baker Jr. Center for Public Policy, Baker Reports 3.16
- Sims, C. 2016. The Paris Climate Change Talks: What Did the President Promise and When Did He Promise It? The Howard H. Baker Jr. Center for Public Policy, Policy Brief 1.16.
- Sims, C. 2015. The Second Coming of the U.S. as an Oil Powerhouse. *Oil and Gas Monitor*, November 15, 2015.
- Sims, C. 2015. How Did Tennessee Fare in the Final Clean Power Plan? The Howard H. Baker Jr. Center for Public Policy, On Point 3:15.
- Sims, C., Rebecca Davis**, Bongkyun Kim**. 2015. Economic Potential of South Knoxville's Urban Wilderness. The Howard H. Baker Jr. Center for Public Policy, White Paper 2:15.
- Murray, M. C. Sims, Rebecca Davis**, Bongkyun Kim**. 2015. Coal Mining and Tourism as Engines of Economics Development for Campbell County and Claiborne County, Tennessee. The Howard H. Baker Jr. Center for Public Policy, Project Report 2:15
- Murray, M., C. Sims, B. Tonn, J. Peretz, J. Wallace, R. Hansen, L. Alvarado. 2014. A Profile of the Energy Sector in Tennessee. The Howard H. Baker Jr. Center for Public Policy, Project Report 2:14.
- Sims, C. 2014. What Are the Benefits of Federal Carbon Policies and How Well Do We Know Them? The Howard H. Baker Jr. Center for Public Policy, Policy Brief 3.14
- Sims, C. 2013. Modeling the coupled nature of forest management and forest disturbance regimes impacted by climate change. Final Report submitted to Utah Agricultural Experiment Station.
- Jackson-Smith, D. et al. 2012. WSC Category 1 – Hydrologic and Ecological Impacts of

- Changes in Human Water Resources Management in Response to Climate Change and Urbanization. Final Report submitted to the National Science Foundation.
- Coupal, R., D. Finnoff, C. Sims. 2008. Regional Economic Impacts of Coal Bed Methane Water Management. Final Report submitted to the Department of Energy.
- Hodges, D. G., C. B. Sims, and A. R. Wells. 2008. Incorporating non-timber objectives in forest management planning on private lands: A case study of the Cumberland Plateau, Tennessee, USA. In: Managerial Economics and Accounting in an Evolving Paradigm of Forest Management, Proceedings of International Symposium organized by IUFRO Group 4.05.00, S. Kant, W. Tzschukpe, J-L Peyron, and H. A. Jobstl, eds. Schriftenreihe der Hochschule für Forstwirtschaft Rottenburg, Band Nr. 22. Pp. 174-185.
- Sims, C. B. and D. G. Hodges. 2004. Use, Demographics, and Economic Impacts of Rock Climbing in the Obed Wild and Scenic River Area. Final Report submitted to National Park Service.

Funded Grants and Contracts

- “NSF Engines: Type-1: Greening the Southeast: Converting carbon neutral crops to sustainable consumer goods while building a diverse agriscience workforce and reviving rural economies” National Science Foundation: \$999,995, Duration: 6/01/2023 - 5/31/2027
- “Dynamic Portfolios of Spatial and Temporal Forest-based Biodiversity Conservation” USDA-AFRI: \$403,664, Duration: 3/1/2022-2/28/2025
- “SRS RN: Connecting Rural and Urban Environments for Equitable Access to Transportation, Telecommunications and Energy (CREEATTE)” National Science Foundation: \$149,573, Duration: 11/2021-11/2022
- “To Conduct an Examination of the Economic Impact of the Proposed Tennessee RiverLine, TN RiverLine” \$25,000, Duration: 10/2021-12/2021
- “Manufacturing Valuable Coal-Derived Products in Southern Appalachia” Department of Energy: \$1,499,000, Duration: 7/2021-6/2023
- “CNH2-S: Scrambled responsibilities - species conservation and collaborative governance in an era of global change” National Science Foundation: \$702,356, Duration: 4/2021-7/2024
- “Alleviating Electric Grid Congestion: Infrastructure Investment Portfolio for Promoting Distributed Energy Technology Adoption” National Science Foundation: \$223,736, Duration: 1/2019-12/2021

“Planning Grant: Engineering Research Center for Protecting and Advancing Water-Energy-Environment and Sustainability (PAWES)” National Science Foundation: \$100,000, Duration: 9/2019-8/2020

“Efficient integration of distributed generation onto an electric grid” Tennessee Valley Authority: \$113,000, Duration: 10/2019-11/2022

“Using the transmission network, consumer behavior, and market structure to maximize the value of solar generation” Alfred P. Sloan Foundation: \$237,415, Duration: 2/2019-2/2021

“FEWESTERN: US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network” NSF EAGER: \$300,000, Duration: 5/15/2017-5/14/2019

“Urban resilience: Promoting environmental and social sustainability with urban wilderness” ORE Research Seed Program: \$15,000

“Optimal spatial targeting of payments for forest-based ecosystem services under climate and market risks” USDA-AFRI: \$336,474, Duration: 1/1/2018-12/31/2020

“Integrating Human Health and Well-Being with Ecosystem Services” EPA-STAR: \$399,226, Duration: 10/17-9/20

“To Quantify the Economic Value of Protected Open Space in the Cumberland Region” Cumberland Region Tomorrow: \$79,121, Duration: 4/1/17-12/31/17

“An Economic Analysis of Appalachian Coal Industry Ecosystems” Appalachian Regional Commission: \$349,999, Duration: 10/16-6/17

“Complementarities and tradeoffs between ecosystem service provision and wildfire in the Northern Rockies” USDA Forest Service Rocky Mountain Research Station: \$209,408, Duration: 10/16-9/19

“Reconciling Methods for Measuring U.S. Oil Dependence” Oak Ridge National Laboratory: \$24,998, Duration: 6/16-12/16

“Toward a practical application of a real options approach in the regulated evaluation of railroad capital costs” The Association of American Railroads: \$60,000, Duration: 4/16-12/16

“A Hedonic Analysis of the Economic Value of Open Space in Tennessee” Tennessee Advisory Commission on Intergovernmental Relations: \$49,854, Duration: 3/15-8/16

“UCOR Economic Impact Study” URS | CH2M Oak Ridge: \$20,962, Duration: 4/15-8/15

“2015-2016 Energy and Environment Forum” Institute for Secure and Sustainable Environment: \$4,000, Duration: 8/15-5/16

“Understanding the impact of distributed generation on TVA” Tennessee Valley Authority: \$25,000, Duration: 9/15-11/16

“DOE Economic Impact Study” Department of Energy: \$15,000, Duration: 8/14-4/15

“TN State Energy Plan” TN State Budget: \$19,000, Duration: 5/14-11/14

“Coal versus Tourism as Engines of Growth for Tennessee Counties” TN Department of Environment and Conservation: \$60,000, Duration: 6/14-11/14

“Energy and Environment Indicator Series” Tennessee Valley Authority: \$10,000

“iUTAH – innovative Urban Transitions and Aridregion Hydro-sustainability” National Science Foundation: \$20,000,000, Duration: 8/1/12-8/1/17

“Managing Interacting Disturbances to Achieve Multiple Environmental Objectives” USDA Forest Service, Western Wildlands Environmental Threat Assessment Center: \$43,270, Duration: 9/1/12-8/30/14

“Measuring the Environmental Cost of Hypocrisy” Utah Agricultural Experiment Station Competitive Grants Program: \$19,761, Duration: 6/1/12-6/30/14

“Modeling the Coupled Nature of Forest Management and Forest Disturbance Regimes Impacted by Climate Change” Utah Agricultural Experiment Station Competitive Grants Program: \$19,040, Duration: 6/1/11-6/30/13

“Hydrologic and Ecological Impacts of Changes in Human Water Resource Management in Response to Climate Change and Urbanization” National Science Foundation Water Sustainability and Climate Program: \$149,943, Duration: 9/1/10 - 9/1/11

“Use, Demographics, and Economic Impacts of Rock Climbing in the Obed Wild and Scenic River Area” National Park Service: \$12,465, Duration: 9/01/02 – 8/31/04

Other Funded Research

“The Role of Forest Management Objectives in Mountain Pine Beetle Outbreaks” Utah Agricultural Experiment Station, Amount Awarded: \$14,000, Duration: 11/1/09-11/1/14

TEACHING AND ADVISING

Graduate Courses Taught

ECON 512 Microeconomic Theory II (Univ. of TN); ECON 677 Environmental and Natural Resource Economics (Univ. of TN); ECON 693 Interdisciplinary Environmental Economics (Univ. of TN); APEC 6500 Natural Resource Economics (Utah State); APEC 6510 Environmental Economics (Utah State); APEC 7500 Natural Resource Economics (Utah State); APEC 7360 Mathematical Economics II (Utah State)

Undergraduate Courses Taught

ECON 463 Environmental Economics (Univ. of TN); ECON 362 Environmental and Natural Resource Policy (Univ. of TN); APEC 5560 Natural Resource and Environmental Economics (Utah State); ECON 440 Environmental Economics (Univ. of Wyoming)

Graduate Students Supervised as Major Advisor and Current Employment

Odysseus Bostick (PhD Economics – Tennessee), expected 2023, Deloitte
Ben Meadows (PhD Economics – Tennessee), 2019, Asst. Prof. – UA - Birmingham
Rebecca Davis (PhD Economics – Tennessee), 2018, Asst. Prof. – Stephen F. Austin U.
Augustina Odame (PhD Economics – Utah State), 2015, CEO – Ghana Chamber of Tech
Yanxu Liu (PhD Economics – Utah State), 2013, Assistant Professor – Bethel College
Abhinav Pathak (MS Applied Economics – Utah State), 2011, Chase Bank

Outside Member of Dissertation Committee

Gasser G. Ali (PhD Engineering – Missouri University of Science and Technology),
Hyun-Seok Yoon (PhD Ecology and Evolutionary Biology – Tennessee), Amanda
Hyman (PhD Ecology and Evolutionary Biology - Tennessee), Samuel Martinez (PhD
Industrial and Systems Engineering - Tennessee), Ibrahim Abotaleb (PhD Civil and
Environmental Engineering – Tennessee), Binod Chapagain (PhD Forestry, Wildlife &
Fisheries – Tennessee), Mohamed Eid (PhD Civil and Environmental Engineering –
Tennessee), Betsy Heines (PhD Mathematics – Tennessee), Evan Markel (PhD
Agricultural and Resource Economics – Tennessee), Andrea Armstrong (PhD Sociology
– Utah State), Lassina Coulibaly (PhD Economics – Utah State)

Thesis Committee Member

Katherine Barkley (MS Agricultural Economics – Mississippi State University); Anvar
Suyundikov (MS Applied Economics – Utah State); Jarod Dunn (MS Applied Economics
– Utah State); Elliot Anderson (MS Applied Economics – Utah State)

Undergraduate

Christina Gore (Economics), Cassidy Quistorff (Environmental and Soil Science), Hazen Page (Finance and Supply Chain Management), Matthew Eades (Geology), Simon Jolly (Economics), Alec Apostoaei (Economics), Brielle Kwarta (Mathematics), Katherine Koonce (Economics), Ellen Oakes (Economics), Shiv Brahmhatt (Finance)

Post-doctoral Researchers Supervised and Current Employment

Alecia Evans (PhD Purdue), 2022-Present

Ben Blachly (PhD Rhode Island), 2020-2021, Industrial Economics

Tim Roberson (PhD Arizona), 2019, 2020-2022, New England ISO

SERVICE

Professional Service

Journal Referee

Economics: Journal of Economic Theory, European Economic Review, Journal of Public Economics, Journal of the Association of Environmental and Resource Economists, Journal of Economic Behavior and Organization, Journal of Economic Dynamics and Control, Economic Inquiry, Land Economics, Journal of Environmental Economics and Management, American Journal of Agricultural Economics, Ecological Economics, Resource and Energy Economics, Western Economics Forum, Environmental and Resource Economics, Journal of Agricultural and Resource Economics, Canadian Journal of Agricultural Economics, Forest Policy and Economics, Futures, Water Economics and Policy, Society and Natural Resources, Journal of Bioeconomics

Ecology and Forestry: Ecology Letters, Ecological Modelling, Forest Science

Mathematical Biology: Journal of Theoretical Biology, Natural Resource Modeling

General Interest Science: Proceedings of the National Academy of Sciences, Nature Sustainability

Other: European Journal of Operational Research

Reviewer: National Science Foundation (US), Biotechnology and Biological Sciences Research Council (UK), USDA

Departmental and College Service

Macroeconomics search committee; 2nd year paper committee (Univ of TN); Graduate policies committee (Univ. of TN); Microeconomics qualifier committee (Univ. of TN); Search committee (Univ. of TN); Graduate admissions committee (Utah State); ENR degree planning committee (Utah State); Search committee (Utah State)

University Service

Hiring committee: Joint position between Baker Center and Department of AREC, Univ of TN, 2023.

Hiring committee: Joint position between Baker Center and Department of AREC, Univ of TN, 2019-2020.

Program Reviewer: Program review committee member for Bredesen Center, Univ of TN, 2019.

Co-organizer: NIMBioS Working group on ecosystem federalism, Univ of TN, 2017-2018.

Independent study course on learning in economic models for Bredesen Center students

Organizing committee: Energy Efficiency, Conservation & Low-Income Households Workshop, Univ. of TN, 2016

Organizing committee: Workshop on Threshold and Tipping Points, Univ. of TN, 2015

Judge: Baker Center Policy Challenge, Univ. of TN, 2015

Judge: Cynthia B. Peterson Poster Competition, Univ. of TN, 2015

Panelist: Journalist Workshop on Clear Air Policies, Univ. of TN, 2014

Organizing committee: Energy and Environment Forum, Univ. of TN, 2014-current

Assistant Professor Panelist: New Faculty Orientation, Univ. of TN, 2014

Panelist: 3rd Year Review Panel, Utah State, 2012

Graduate Student Poster Judge: Spring Runoff Conference, Utah State, 2012

Search committee: Department of Sociology, Social Work, and Anthropology, Utah State

Assistant Professor Panelist: New Faculty Teaching Academy, Utah State, 2011

HONORS AND AWARDS

University of Tennessee Excellence in Interdisciplinary Research Award, 2022

U. of Tennessee Dept. of Economics John and Shirley Moore Scholar, 2021-2023

Resource Modeling Association Rollie Lamberson Research Award Medal, 2019

U. of Tennessee Dept. of Economics Robert Bohm Faculty Research Fellow, 2018-2020

U. of Tennessee Dept. of Economics Summer Research Award, 2016

U. of Tennessee Quest Scholar of the Week, October 9, 2105

U. of Tennessee Center for Transportation Research Fellow, 2015

Utah State University Ecology Center Fellow, 2011

U. of Wyoming Best Economics PhD Graduate Student Award, 2009

U. of Wyoming William E. Morgan Graduate Award, 2008

U. of Wyoming Environment and Natural Resources Plummer Scholarship, 2005-2008

AFFILIATIONS AND MEMBERSHIPS

American Economic Association

Association of Environmental and Resource Economists

Southern Economics Association