

Kaleen Lawsure

Senior Project Scientist

Old Dominion University

Office of Enterprise Research and Innovation

Virginia Modeling, Analysis and Simulation Center

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Curriculum Vitae – Updated May 1, 2026

Education

- Bachelor of Science (Magna Cum Laude), Geography, Old Dominion University, 2007-2008
 - *Gamma Theta Upsilon International Geographic Honor Society*
 - *Geographic Information Systems/Science*
 - *Spatial Analysis of Coastal Environments (SpACE)*
- Associates of Art, Liberal Arts, Tidewater Community College, 2004-2006

Experience

- Virginia Modeling, Analysis and Simulation Center
 - *Senior Project Scientist | 2017-Present*
 - *Project Scientist | 2012-2017*
 - *Research Associate | 2009-2012*
 - *Student Intern | 2007-2009*

Student Mentoring

- Kevin O'Brien, (2023 – Present), Data Science (Geospatial) Master's Candidate
- Louise Salinas (2022-2025), Communications Master's Candidate
- Jennifer Lindgens (2020 – 2022), Mathematics

Journal Articles

- Juita-Elena (Wie) Yusuf, Whytlaw, J. L., Hutton, N., Lasisi, T. O., Giles, B., Lawsure, K., Behr, J., Diaz, R., & McLeod, G. (2023). Evacuation behavior of households facing compound hurricane-pandemic threats. *Public Administration Review*, 83(5), 1186–1201. (Impact Factor 6.1)
- Ezell, B., & Lawsure, K. (2019). Homeland security and emergency management grant allocation. *Journal of Leadership, Accountability and Ethics*, 16(4), 74–83. (h-index 20)
- Hester, P., Ezell, B., Collins, A., Horst, J., & Lawsure, K. (2017). A method for key performance indicator assessment and improvement in manufacturing organizations. *International Journal of Operations Research*, 14(4), 157–167. (Impact Factor 0.43)
- Tran, P., Weireter, L., Sokolowski, W., Lawsure, K., & Sokolowski, J. (2009). HAZUS modeling for hurricane effect on a healthcare campus: Implications for health care planning. *The American Surgeon*, 75(11), 1059–1064. (Impact Factor 1.06)

Conferences

1. Behr, J., Yusuf, W. Arul, M., **Lawsure, K.**, Chapman, L. (March 18, 2026). Journey from Butler County Mo. To Isle of Wight VA: Takeaways from the 2025 Virginia Tornado & Straight-Line

- Wind Summit. (March 18, 2026). Virginia Emergency Management Symposium, Norfolk, VA.
2. **Lawsure, K.** (March 18, 2026). Post-Disaster Loss Avoidance Studies in the Commonwealth of Virginia. (March 18, 2026). Virginia Emergency Management Symposium, Norfolk, VA.
 3. Behr, J., Yusuf, W. Arul, M., **Lawsure, K.**, Chapman, L. (November 8, 2025). Journey from Butler County Mo. To Isle of Wight VA: Takeaways from the 2025 Virginia Tornado & Straight-Line Wind Summit. Mid-Atlantic Severe Weather Conference, Richmond, VA.
 4. **Lawsure, K.** (2025, May 20, 2025). Post-Disaster Loss Avoidance Studies in the Commonwealth of Virginia. Association of State Floodplain Managers Annual Conference, New Orleans, LA.
 5. Behr, J., **Lawsure, K.**, Yusuf, W., & Chapman, L. (2024, October 24–25). The Practice of Hazard Mitigation Planning in Virginia: Where the Rubber Meets the Road. Virginia Floodplain Management Association Annual Conference, Richmond, VA.
 6. **Lawsure, K.**, & Ezell, B. (2019, March). Homeland security and emergency management grant allocation multi-objective benefit-cost methodology. MODSIM World Conference, Norfolk, VA.
 7. Ezell, B., & **Lawsure, K.** (2019, March). Homeland security and emergency management grant allocation. Society for Benefit Cost Analysis Conference, Washington, DC.
 8. **Lawsure, K.**, Ezell, B., Collins, A., Horst, J., & Hester, P. (2015, April). Web enabled selection method for key performance indicators for manufacturing. MODSIM World Conference, Virginia Beach, VA.
 9. **Lawsure, K.**, & Ezell, B. (2014, April). 2013 Virginia homeland security portfolio value model. MODSIM World Conference, Virginia Beach, VA.
 10. **Lawsure, K.**, & Ezell, B. (2013, May). 2012 Virginia homeland security portfolio value model. MODSIM World Conference, Virginia Beach, VA.
 11. Suchitra, M., Shen, Y., Garcia, H., & **Lawsure, K.** (2010, March). Virtual VMASC: A 3D game environment [Technical report]. NASA Technical Reports Server.
 12. Suchitra, M., Shen, Y., Garcia, H., & **Lawsure, K.** (2009, October). Virtual VMASC: A 3D game environment. MODSIM World Conference, Virginia Beach, VA.
 13. **Lawsure, K.**, & Sokolowski, W. (2009, April). Regional tertiary care center disaster response model. Military Academy Capstone Conference, West Point, NY.
 14. **Lawsure, K.**, & Sokolowski, W. (2008, September). Regional tertiary care center disaster response model. MODSIM World Conference, Virginia Beach, VA.

Grants Awarded

1. Intrinsic Policy-Aware Provenance Infrastructure for Regulatory Compliance Verification, 2026-2027, OERI, \$95,000, PI – Chris Lynch, **Co-PI – Kaleen Lawsure**
2. AI Hazard Mitigation Planning Platform, 2026-2027, OERI, \$56,196, PI – Chris Lynch, **Co-PI – Kaleen Lawsure**
3. Decision analytic support for Virginia Department of Emergency Management, 2025-2026, \$180,000, **PI – Kaleen Lawsure**
4. Decision analytic support for Virginia Department of Emergency Management, 2012 – present, funded under multiple contracts > \$2.2M: **PI/Co-PI/Contributor - Kaleen Lawsure**, PI/Co-PI - Barry Ezell,
 - a) Flood Intelligence Unit (FIU) data integration into LAS, 2026 – present.
 - b) Post-mitigation Loss Avoidance Studies (LAS), 2021-present.
 - c) Hazard Mitigation Assistance (HMA) Mitigated Properties GIS and Data Repository, 2022 - present
 - d) Virginia Hazard Mitigation Plan (HMP) maintenance & mitigation activity tracking, 2023-2025.
 - e) Hazard Mitigation Assistance (HMA), 2016-2024

- f) Emergency Management Performance Grant, Port Security Grant Program, Non-Profit Security Grant Program (varies by year), 2013-2025
 - g) State Homeland Security Program, 2012-2025
5. Virginia Department of Education Student Performance Data Validation & Analysis, 2025 – 2025, \$24,711, PI- Chris Lynch, **Co-PI – Kaleen Lawsure**
 6. Cybersecurity & Infrastructure Security Agency (CISA) Infrastructure Resilience Planning Framework (IRPF) for Hazard Mitigation Planning in Coastal Virginia, 2024-2025, \$135,000, PI - Wei Yusuf, **Co-PI – Kaleen Lawsure**
 7. Commonwealth of Virginia Hazard Mitigation Plan Update and Enhanced Plan Status, 2024-2025, \$435,000, PI - Barry Ezell, **Co-PI - Kaleen Lawsure**
 8. Decision support for the Hampton Roads Urban Area Working Group (UAWG) Urban Area Security Initiative (UASI) grant allocation, 2019-2025, \$136,563, PI - Barry Ezell, **Co-PI - Kaleen Lawsure**
 9. All Hazards Advisory Committee support for updating Hampton Roads Threat Hazard Identification Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR), Hampton Roads Planning District Commission, 2017-2025, \$307,787, PI - Barry Ezell, **Contributor - Kaleen Lawsure**
 10. Virginia Hazard Mitigation Plan Update, 2022 – 2024, \$225,000, PI - Barry Ezell, **Co-PI - Kaleen Lawsure**
 11. Decision analytic support for Local Capabilities Assessment for Readiness (LCAR) for the Virginia Department of Emergency Management, 2020-2022, \$36,000 x 3 years (estimate) = \$108,000, PI - Barry Ezell, **Co-PI - Kaleen Lawsure**
 12. Decision analytic support for COVID-19 Recovery for the Virginia Department of Emergency Management, 2020-2022, \$10,000, PI - Barry Ezell, **Co-PI - Kaleen Lawsure**
 13. Modeling the Mobility and Coordination of Material Process development for the Virginia Department of Emergency Management pre-screening Public Non-Profit Public Assistance for COVID-19, VMASC, 2020-2022, internal support for VDEM response to COVID-19, **Contributor – Kaleen Lawsure**
 14. Modeling the Mobility and Coordination of Material, Labor, and Displaced Vulnerable Populations for Housing Recovery, Department of Housing and Urban Development, 2020-2022, \$375,000, PI – Rafael Diaz, **Contributor – Kaleen Lawsure**
 15. Advancing Real-Time Evacuation Model (RtePM), Virginia Department of Emergency Management, 10/15/2020-6/30/2022, \$175,000, PI – Mike Robinson, **Co-PI, Kaleen Lawsure**
 16. Survey instrument development for higher education institution capabilities for 3D printing of PPE in response to COVID-19, VMASC, 2020, internal support for COVID-19 response
 17. COVID-19 Evacuation and Sheltering Risk Perception Study, Virginia Department of Emergency Management, 2020-2021, \$180,000, PI – Joshua Behr, **Contributor – Kaleen Lawsure**
 18. Evacuation modeling support for Hurricane Florence After Action Review, Virginia Department of Emergency Management, 9/15/2019-1/30/2020, \$35,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
 19. Preliminary geospatial exploration of select opportunity zones in Norfolk, VA related to diversity and inclusivity in emergency management, Virginia Department of Emergency Management, 2019, internal support for VDEM mitigation activities, **Contributor – Kaleen Lawsure**
 20. GIS and hurricane modeling support for ODU post Hurricane Florence study, Old Dominion University, 2018-2019, internal support for post event analysis, **Contributor – Kaleen Lawsure**
 21. Database development and consulting for the Homeland Security Systems Engineering and Development Institute FEMA National Preparedness Directorate Return on Investment Study, MITRE Corporation, 2/1/2018-4/30/2018, \$11,250, PI – Barry Ezell, **Contributor – Kaleen**

Lawsure

22. Decision support and strategic planning for the Commonwealth of Virginia Critical Infrastructure Working Group, 9/1/2017-12/31/2017. \$10,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**. Note: Continued support through 2019.
23. Decision analytic support, modeling methodology development, database development, workshop organization, and GIS support for the Office of Public Safety and Homeland Security Hampton Roads Maritime Area critical assets assessment and dependency tool, 8/16/2017-1/15/2018. [Funded \$35,000 (assessment); \$475,000 (dependency tool), PI – Barry Ezell, **Contributor – Kaleen Lawsure**
24. Performance Metrics Executive Dashboard prototype development for the Virginia Department of Emergency Management, 2017-2018, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
25. Hurricane scenario development, vulnerable population mapping, and analysis for U.S. Housing and Urban Development Housing Stock Recovery, 2015-2017, PI – Joshua Behr, **Contributor – Kaleen Lawsure**
26. GIS support and preliminary analysis for mosquito monitoring in York County, VA, 2016-2017, internal support for Dr. Bridget Giles, funding status unknown, **Contributor – Kaleen Lawsure**
27. GIS support and analysis for vulnerable populations, “Adaptation Response to Recurrent Flooding,” in Portsmouth, VA, 2015, PI – Joshua Behr, **Contributor – Kaleen Lawsure**
28. Modeling and methodology support, and database development for National Institute of Standards and Technology Key Performance Indicators Effectiveness (KPI-E) for Manufacturing, National institute for Standards and Technology, 10/1/2014-9/30/2016, \$408,304, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
29. GIS support for qualifying Hampton Roads localities for funding through the National Disaster Resiliency Competition, 2015, internal support for Dr. Joshua Behr, funding status unknown
30. Database update support for troop force database for ARCIC, 1/1/2014-9/30/2014. [Funded \$1,110,860, PI – Christopher Lynch, **Contributor – Kaleen Lawsure**
31. Social network mapping and workshop support for “FallingWater” J6 cyber security and critical infrastructure protection workshop, 2014, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
32. GIS support, database development, and prototype testing and evaluation for Hurricane Evacuation Encouragement Demonstrator (HEED), 2011-2014. [Funded \$50,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
33. Evacuation modeling for “Transportation Analysis for Evacuation of Mobile and Baldwin Counties” in Alabama, 2014, PI – Mike Robinson, **Contributor – Kaleen Lawsure**
34. GIS support for asthma case study mapping for “Air Pollution, Vehicle Traffic, and Self-Reported Asthma: Assessing the Public Health Risks of Congestion in an Urban Environment,” Perry Foundation, 2014, \$124,000, PI - Joshua Behr, **Contributor – Kaleen Lawsure**
35. GIS support for shelter resources, shelter of last resort, and vulnerable population mapping, and anthrax/Improvised Explosive Devise scenario development and impact analysis for the Hampton Roads Regional Catastrophic Planning Team, Virginia Department of Emergency Management, 2012-2013, \$538,161, PI – Joshua Behr, **Contributor – Kaleen Lawsure**
36. GIS support, software testing, evaluation, and documentation, and stakeholder training for the Real-Time Evacuation Planning Model (RtePM). Scenario development for a National Capital Region “dirty bomb” event, and Baltimore, MD Running Festival terrorism event, Virginia Department of Emergency Management, 7/1/2012-2/1/2013, \$900,000, PI – Mike Robinson, **Contributor – Kaleen Lawsure**
37. Decision analytic support for the Hampton Roads Urban Area Security Initiative (UASI), 2009-2012, 6/1/2011-9/30/2013 - \$20,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
38. GIS support for the ODU International Alumni Association in mapping global distribution of international graduated students, Old Dominion University, 2012, internal support for ODU,

Contributor – Kaleen Lawsure

39. Hampton Roads Emergency Preparedness Exercise Series, Virginia Department of Emergency Management, 7/1/2010-8/31/2011, \$160,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
 - a. Workshop and planning support
 - b. GIS and hurricane scenario modeling for Common Operating Picture (COP) and Spatially Integrated Incidence Maps (SIIMS) development
40. “Identifying Factors that Influence Terrorist Decisions and Target Selection,” Battelle National Biodefense, 7/15/2010-5/31/2011, \$50,000, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
41. Research support for Hampton Roads Bridge Tunnel risk assessment for cyber-attack targeting Supervisory Control and Data Acquisition Systems, and Vehicle Borne Improvised Explosive Device scenarios, Virginia Department of Transportation, 3/15/2010-9/15/2011, \$299,127, PI – Barry Ezell, **Contributor – Kaleen Lawsure**
42. Modeling support for 3D modeling of VMASC building, VMASC, 2009-2010, internal support for VMASC, **Contributor – Kaleen Lawsure**
43. GIS support for insurgency modeling in Afghanistan, VMASC, 2009-2010, internal support for Dr. John Sokolowski, funding status unknown, **Contributor – Kaleen Lawsure**
44. Vector borne disease research for climate change impacts on human health, VMASC, 2009, internal support for Dr. John Sokolowski, funding status unknown, **Contributor – Kaleen Lawsure**
45. Spatial analysis of hurricane flood hazards and 3D modeling of “Disaster Response Model: Regional Tertiary Care Center of Southeastern Virginia,” VMASC, 2008-2009, internal support for Dr. John Sokolowski, funding status unknown, **Contributor – Kaleen Lawsure**
46. GIS data management for “Critical Infrastructure Resilience for the Hampton Roads Region,” VMASC, 2007-2008, PI - John Sokolowski, **Contributor Kaleen Lawsure**

Technical Reports and Patents

1. Lynch, C., **Lawsure, K.**, Frydenlund, E. VDOE Student Performance Data Validation Analysis Report, 2025.
2. Yusuf, W., Arul, M., Behr, J., **Lawsure, K.**, Huy Pham, A., Attivor, H. 2025. Improving Understanding and Connections for Preparedness, Mitigation, Response, and Recovery for Tornado and Straight-line Wind Events in Virginia: Summary of the Inaugural Virginia Tornado and Straight-line Wind Summit, 2025.
3. **Lawsure, K.** Hazard Mitigation Post-Event Loss Avoidance Study, Giles County, 2025.
4. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2024.
5. **Lawsure, K.** Hazard Mitigation Post-Event Loss Avoidance Study, Henry County, 2024.
6. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2024.
7. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2023.
8. **Lawsure, K.** Hazard Mitigation Post-Event Loss Avoidance Study, Town of Bluefield, 2023.
9. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2023.
10. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2022.
11. **Lawsure, K.** Hazard Mitigation Post-Event Loss Avoidance Study, City of Chesapeake, 2022.
12. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2022.
13. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2021.
14. **Lawsure, K.** Hazard Mitigation Post-Event Loss Avoidance Study, Town of Cleveland, 2021.
15. Barry Ezell, Erika Frydelund, **Kaleen Lawsure**, and Jennifer Lindgens, VDEM Building Resilient

- Infrastructure Communities Equity Workshop Series Report, October 2021.
16. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2021.
 17. **Lawsure, K.**, Commonwealth of Virginia Hazard Mitigation Assistance Analytic Results, 2020.
 18. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2020.
 19. Behr, Joshua G., Rafael Diaz, Wie Yusuf, Bridget Giles, **Kaleen Lawsure**, and George McLeod. COVID-19 Evacuation and Sheltering Risk Perception Study. 2020.
 20. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2020.
 21. **Lawsure, K.**, Commonwealth of Virginia Hazard Mitigation Assistance Analytic Results, 2019.
 22. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2019.
 23. **Lawsure, K.**, Commonwealth of Virginia Hazard Mitigation Assistance Analytic Results, 2018.
 24. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2018.
 25. **Lawsure, K.**, Commonwealth of Virginia Hazard Mitigation Assistance Analytic Results, 2017.
 26. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2017.
 27. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2016.
 28. **Lawsure, K.** and Ezell, B., Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2015.
 29. Ezell, B., and **Lawsure, K.**, Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2014.
 30. Frydelund, E., **Lawsure, K.** Transportation Analysis for Evacuation of Mobile and Baldwin Counties: Hurricane Evacuation Projection with I-65 Northbound Bridge Closures, 2024.
 31. Behr, J., Diaz, R., Liu, H., **Lawsure, K.** Giles, B., Bakhari, Z., Hovland, E., Sherfey, S., Toba, L., Flanagan, D., Meyr, D., Hampton Roads Housing Study Report, 2013.
 32. Behr, J., Diaz, R., Sherfey, S., **Lawsure, K.** Giles, B., Bakhari, Z., Hovland, E., Toba, L., Flanagan, D., Meyr, D., Hampton Roads Refuge of Last Resort Study Report, 2013.
 33. Ezell, B., and **Lawsure, K.**, Commonwealth of Virginia State Homeland Security Program Local Competitive Analytic Results, 2013.
 34. **Lawsure, K.**, Frydelund, E. RealTime Evacuation Planning Model User's Guide, Version 2.0, 2013
 35. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, Hampton Roads Planning District Commission, 2012.
 36. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2011.
 37. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2010.
 38. Ezell, B., and **Lawsure, K.**, Urban Areas Security Initiative Analytic Results, 2009.
 39. **Lawsure, K.**, & Sokolowski, W. Regional tertiary care center disaster response model results, Eastern Virginia Medical School, 2008.

Honors, Awards, and Prizes

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Membership in Professional Societies

- Association of American Geographers

Professional Certifications/Certificates

- Texas A&M Engineering Extension Infrastructure Disaster Management
- Federal Emergency Management Agency Basic Academy
- Federal Emergency Management Agency Hazus Practitioner/Professional
- Federal Emergency Management Agency Emergency Management Institute, completion of various independent study and residential programs.

University Service

- Old Dominion University Women’s Caucus, member, 2025 – present.
- Old Dominion University Hazard Mitigation Advisory Board, 2025 - present

Professional Service

- Virginia Tornado and Straight-Lin Wind Summit Organizing Committee, 2025 – present
- Hampton Roads Adaptation Forum 2026 – present.
- Hampton Roads Planning District Commission (HRPDC, sponsored research, 2009 – present.
- Reviewer for various conferences and grant program’s (e.g. Winter Sim, Building Resilient Infrastructure and Communities, Non-profit Security Grant Program).

Community Service

- Community Emergency response Team volunteer, 2025 - present
- Virginia State Parks volunteer, 2025 – present
- American Red Cross & The Blood Connection donor, 2025 - present
- Tidewater Appalachian Trail Club volunteer, 2025 – present
- Chesapeake Parks, and Recreation volunteer, 2023 – present
- Foodbank of Southeastern Virginia donor, 2014 - present
- Great Suffolk Cleanup volunteer, 2022 - present