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RESEARCH INTERESTS

I am a data scientist who specializes in development and application of computational methods to understand the mechanisms underpinning pressing cybersecurity, societal, and environmental problems. I use data science to solve vexing software-quality assurance challenges.

TEACHING PHILOSOPHY

I cultivate an educational environment wherein the development of students' critical thinking skills becomes an emergent property of engaging assignments and collaborative classroom activities.

CURRENT AND PAST POSITIONS

2024 – present	**Joint Appointment**. Pacific Northwest National Laboratory, Richland, WA.
2022 – present	**Assistant Professor and Co-Director of the Software Engineering and Cybersecurity Lab**. Gianforte School of Computing, Montana State University, Bozeman, MT.
2019 – 2022	**Assistant Research Professor**. Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT.
2016 – 2022	**Faculty Affiliate**. Gianforte School of Computing (formerly the Department of Computer Science), Montana State University, Bozeman, MT.
2016 – 2019	**Research Scientist**. Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT.
2014 – 2016	**Postdoctoral Research Associate**. Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT.
2015 – 2015	**Instructor**. Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT.
2009 – 2014	**Graduate Research Assistant**. Department of Ecology, Montana State University, Bozeman, MT.
2007 – 2007	**Teaching Assistant**. Department of Biology, Duke University, Durham, NC.
2006 – 2008	**Graduate Research Assistant**. Developmental Biology Training Program and Department of Cell Biology, Duke University, Durham, NC.
2003 – 2004	**Undergraduate Research Assistant**. Department of Integrative Physiology, University of Colorado, Boulder, CO.
2003 – 2003	**Undergraduate Teaching Assistant**. Department of Environmental, Population, and Organismic Biology, University of Colorado, Boulder, CO.

EDUCATION

Ph.D. Ecology and Environmental Sciences
Montana State University, December 2014
Advisors: Dr. Alexander V. Zale and Dr. Robert G. Bramblett

M.S. **Cell Biology**
Certificate in Developmental Biology
Duke University, December 2008
Advisor: Dr. Margaret L. Kirby

B.A. **Environmental, Population, and Organismic Biology**
Summa cum laude
University of Colorado at Boulder, May 2004
Advisor: Dr. David O. Norris

GRANTS & CONTRACTS

— Awarded (Total $15.6 M)—

(18) **Reinhold, A.M.**, and C. Izurieta. 2025. Secure Research. RTX, $282,152 (Awarded) $800,000 (Pending Signatures).

(17) **Reinhold, A.M.** 2024. Measuring software quality and sophistication for reverse engineering binaries. Sandia National Laboratory, $54,573.

(16) Izurieta, C., and **A.M. Reinhold.** 2025. SMS Quality Assurance. United States Army Construction Engineering Research Laboratory (ARMY CERL), $600,000.

(15) Cusker, B. **A.M. Reinhold**, and C. Izurieta. 2024. TechLink/SECL TSEAL. Wright Patterson Air Force Base (WRIPAT), $360,000.

(14) **Reinhold, A.M.** and C. Izurieta. 2024. Cyber Attack Mitigation for Specialized Systems. IAA #70RSAT24KPM000022. Department of Homeland Security Science and Technology, $4,000,000.

(13) **Reinhold, A.M.** and T. Gedeon. 2024. DOVE Program. BlackSky Geospatial Solutions, Inc., $263,991.

(12) Izurieta, C., Reimanis, D. K., **Reinhold, A. M.**, and Whitaker, B. 2022. LRBAA 18-01-SEC CYB 06-01-0023 Type III Research Area: Securing Cyberspace SEC CYB 06-01. Department of Homeland Security Science and Technology, $4,469,998.

(11) Ewing, S.A., S. Warnat, **A.M. Reinhold,** and R.A. Payn. 2020. SitS: Coupling high frequency soil solute signals and scalable simulations to quantify biogeochemical mechanisms governing water quality. National Science Foundation, $948,426.

(10) Izurieta, C., **Reinhold, A.M.**, E.A. Shanahan, T.W. Peters, V. Strnadová-Neeley, M.P. Wittie, and D.W. Opitz. 2020. Cyber QR Ops: Improving the quality and resiliency of critical computing infrastructure, United States Department of Homeland Security Science and Technology, $3,100,000.

(9) **Reinhold, A.M.**, and G.C. Poole. 2019. Determining the importance of flood dynamics on Russian Olive invasions. United States Department of Agriculture Agricultural Research Service, $20,000.

(8) **Reinhold, A.M.** 2018. Investigating potential hydrogeomorphic influences on Russian Olive invasions on the Yellowstone River floodplain. United States Department of Agriculture Agricultural Research Service, $4,022.

(7) Poole, G.C. and **A.M. Reinhold**. 2018. Multi-Scale hyporheic exchange and regional water temperature project. Confederated Tribes of the Umatilla Indian Reservation, $33,169.

(6) **Reinhold, A.M.** 2017. Developing a database to determine the influence of microtopography on Russian Olive invasion. United States Department of Agriculture Agricultural Research Service, $10,000.

(5) Shanahan, E.A., E. Raile, J. McEvoy, C. Izurieta, G.C. Poole, and **A.M. Reinhold**. 2016. The impacts of narratives-based risk communication on hazard preparedness. The National Science Foundation, $549,983.

(4) Zale, A.V., R.G. Bramblett, M.B. Duncan, and **A.M. Reinhold**. 2012. Assessment of population and assemblage level effects of the Exxon oil spill on Yellowstone River fishes. The Natural Resource Damage Program, $33,400.
(3) Duncan, M.B., A.V. Zale, R.G. Bramblett, and **A.M. Reinhold**. 2012. Yellowstone River oil spill assessment. Montana Chapter of the American Fisheries Society, $2,000.
(2) Bramblett, R.G., A.V. Zale, and **A.M. Reinhold**. 2011. Anthropogenic habitat change effects on the fish assemblages of the Yellowstone River (supplementary funding). United States Army Corps of Engineers, $112,288.
(1) **Scholl, A.M.,** A.M. Vajda, and D.O. Norris. 2003. Investigation of tyrosine hydroxylase immunoreactive neurons in the brain of the developing Tiger Salamander, *Ambystoma tigrinum*. Howard Hughes Undergraduate Research Opportunities Program Fellowship, $1,400.

AWARDS & HONORS

2025 Honored as the MVP "Most Valuable Professor" at MSU's Football Game against UC-Davis
2024 Honored as the MVP "Most Valuable Professor" at the Brawl of the Wild Cat-Griz Football Game
2023 Recipient IEEE-Cyber Security & Resilience Best Paper Award from Woman-Led Research Team
2023 Recipient of "Everyday Hero of Research" Award, Montana State University Office of Research and Economic Development
2021 Elected to the Society for Freshwater Science's Board of Directors as the Early Career Representative
2020 Recipient, 2019 Editors' Citation for Excellence in Refereeing for *Geophysical Research Letters*
2010 Best Student Poster Award, Montana Section of the American Water Resources Association Annual Conference
2004 Summa cum laude
2004 Graduation with Distinction (GPA > 3.75)
2004 Phi Beta Kappa National Honor Society
2003 Golden Key National Honor Society
2002 Phi Sigma Theta National Honor Society
2001 National Society for Collegiate Scholars

PRODUCTS & PUBLICATIONS

— Peer Reviewed Publications (47 in total) —
(Students Underlined)

— Journal Articles —

(26) Lynch, C.J., E. Jensen, R. Gore, V. Zamponi, K. O'Brien, B. Feldhaus, K. Smith, J. Martínez, M.H. Munro, T.E. Ozkose, T.B. Gundogdu, **A.M. Reinhold**, H. Kavak, and B. Ezell. 2025. AI-Generated Messaging for Life Events Using Structured Prompts: A Comparative Study of GPT With Human Experts and Machine Learning. IEEE Access, 13: 147002-147033. DOI: 10.1109/ACCESS.2025.3600146
(25) Mayernik, C.M., S.A. Ewing, M.D. DeGrandpre, T.N.B. Koffman, M.J. Foster, J.L. Dixon, C.A. Jones, **A.M. Reinhold**, and R.A. Payn. 2025. Riparian Processes in Semi-Arid Landscapes: Understanding Controls on Nitrate Loss and Sulfate Production in Agricultural Stream Corridors. Journal of Geophysical Research: Biogeosciences, 130(7): e2024JG008559. DOI: 10.1029/2024JG008559
(24) **Reinhold, A.M.**, R. Gore, B. Ezell, C. Izurieta, and E.A. Shanahan. 2025. From Cyclones to Cybersecurity: A Call for Convergence in Risk and Crisis Communications Research. Journal of Homeland Security and Emergency Management. DOI: 10.1515/jhsem-2023-0067

(23) Harms, T.K., H. Lowman, J. Blaszczak, A. Cale, X. Dong, S. Earl, L. Gaines-Sewell, J. Grabow, E. Hanan, M. Lauck, J. Melack, **A.M. Reinhold**, B.M. Summers, A.J. Webster, and N.B. Grimm. 2025. Fire influence on land–water interactions in aridland catchments, BioScience, 75(1):30–46. DOI: 10.1093/biosci/biae120

(22) Izurieta, C., Reimanis, D., O'Donoghue, E., Liyanage, K., Manzi Muneza, A.R., Whitaker, B., and **Reinhold, A.M.** 2024. A Generalized approach to the operationalization of Software Quality Models. PeerJ Computer Science, 10:e2357. DOI: 10.7717/peerj-cs.2357

(21) Munro, M.H., R.J. Gore, C.J. Lynch, Y.D. Hastings, and **A.M. Reinhold**. 2024. Enhancing Risk and Crisis Communication with Computational Methods: A Systematic Literature Review. Risk Analysis. DOI: 10.1111/risa.17690

(20) Lowman, H., J. Blaszczak, A. Cale, X. Dong, S. Earl, J. Grabow, N.B. Grimm, T.K. Harms, J. Melack, **A.M. Reinhold**, B. Summers, and A.J. Webster. 2024. Persistent and lagged effects of fire on stream solutes linked to intermittent precipitation in arid lands. Biogeochemistry 167: 777–791. DOI: 10.1007/s10533-024-01154-y

(19) **Reinhold, A.M.**, B. Boles, A.R. Manzi Muneza, T. McElroy, and C. Izurieta. 2024. Surmounting Challenges in Aggregating Static-Analysis Tool Results. Journal of Military Cyber Affairs 7(1). Web: https://digitalcommons.usf.edu/mca/vol7/iss1/6

(18) **Reinhold, A.M.**, M.H. Munro, E.A. Shanahan, R.J. Gore, B.C. Ezell, and C. Izurieta. 2023. Embedding Software Engineering in Mixed Methods Research: Computationally Enhanced Risk Communication. International Journal of Multiple Research Approaches 15(2): 67-72. DOI: 10.29034/ijmra.v15n2a2

(17) Izurieta, C., N. Woods, and **A.M. Reinhold**. 2023. A Brief of Distributed Data Processing. Works in Progress in Embedded Computing Journal 9(2). Web: http://www.wipiec.digitalheritage.me/index.php/wipiecjournal/article/view/40/35

(16) Hastings, Y., and **A.M. Reinhold**. 2023. Applying Software Quality in Use Standards to Improve Scientific Software Selection. Works in Progress in Embedded Computing Journal. Web: http://wipiec.digitalheritage.me/index.php/wipiecjournal/article/view/42/37

(15) Fogg, S.K., **A.M. Reinhold**, G.C. Poole, and S.J. O'Daniel. 2023. Thermal insulation versus capacitance: A simulation experiment comparing effects of shade and hyporheic exchange on daily and seasonal stream temperature cycles. Hydrological Processes 37(9): e14973. DOI: 10.1002/hyp.14973

(14) **Reinhold, A.M.**, E.D. Raile, C. Izurieta, J. McEvoy, H. King, G.C. Poole, R.C. Ready, N.T. Bergmann, and E.A. Shanahan. 2023. Persuasion with Precision: A Mixed Methods Procedure for Improving Validity in Risk Communication Treatment Conditions. Journal of Mixed Methods Research. DOI: 10.1177/15586898221096934

(13) Poole, G.C., S.K. Fogg, S.J. O'Daniel, B. Amerson, **A.M. Reinhold**, S. Carlson, E.J. Mohr, and H.C. Oakland. 2022. Hyporheic hydraulic geometry: Conceptualizing relationships among hyporheic exchange, storage, and water age. PLoS ONE. DOI: 10.1371/journal.pone.0262080

(12) Raile, E.D., E.A. Shanahan, J. McEvoy, C. Izurieta, N.T. Bergmann, R. Ready, **A.M. Reinhold**, and G.C. Poole. 2022. Narrative Risk Communication as a Lingua Franca for Natural Environmental Hazard Preparation. Environmental Communication. DOI: 10.1080/17524032.2021.1966818.

(11) West, N.M., and **A.M. Reinhold** (*co-first authors*), G.C. Poole, and E.K. Espeland. 2020. Flood dynamics dictate distributions of Russian olive *Elaeagnus angustifolia* L. on riverine floodplains. Biological Invasions. DOI: 10.1007/s10530-020-02352-z

(10) Fogg, S.K., S.J. O'Daniel, G.C. Poole, **A.M. Reinhold**, and A. Hyman. 2020. A simple, reliable method for long-term, in-stream data logger installation using rock climbing hardware. Methods in Ecology and Evolution. DOI: 10.1111/2041-210X.13367

(9) Bergmann, N., J. McEvoy, E.A. Shanahan, E. Raile, **A.M. Reinhold**, G.C. Poole, and C. Izurieta. 2020. Thinking through levees: How political agency extends beyond the human mind. Annals of the American Association of Geographers. DOI: 10.1080/24694452.2019.1655387

(8) Shanahan, E.A., **A.M. Reinhold,** E.D. Raile, G.C. Poole, R. Ready (*co-first authors*), J. McEvoy, N. Bergmann, C. Izurieta, and H. King. 2019. Characters matter: How narratives shape affective responses to risk communication. PLoS ONE. 14(12):e0225968. DOI: 10.1371/journal.pone.0225968

(7) **Reinhold, A.M.**, G.C. Poole, C. Izurieta, A.M. Helton, and E.S. Bernhardt. 2019. Constraint-based simulation of multiple interactive elemental cycles in biogeochemical systems. Ecological Informatics. 50:102-121. DOI: 10.1016/j.ecoinf.2018.12.008

(6) Tornabene, B.J., M.E. Jaeger, R.G. Bramblett, M. Nelson, N. McClenning, T. Watson, A. Ankrum, K. Frazer, **A.M. Reinhold**, and A.V. Zale. 2019. Riverine turtles select habitats maintained by natural discharge regimes in an unimpounded large river. River Research and Applications. 35:1489-1498. DOI: https://doi.org/10.1002/rra.3496

(5) **Reinhold, A.M.**, G.C. Poole, R.G. Bramblett, A.V. Zale, and D.W. Roberts. 2018. Landscape assessment of side-channel plugs and associated cumulative side-channel attrition across a large river floodplain. Environmental Monitoring and Assessment. 190:305. DOI: 10.1007/s10661-018-6673-8

(4) **Reinhold, A.M.**, R.G. Bramblett, A.V. Zale, G.C. Poole, and D.W. Roberts. 2017. Spatially-dependent responses of a large river fish assemblage to bank stabilization and side channels. Transactions of the American Fisheries Society 146:967-982. DOI: 10.1080/00028487.2017.1290682

(3) **Reinhold, A.M.**, R.G. Bramblett, A.V. Zale, D.W. Roberts, and G.C. Poole. 2016. Comparative use of side and main channels by small-bodied fish in a large, unimpounded river. Freshwater Biology 61:1611-1626. DOI: 10.1111/fwb.12796

(2) Sato, A., **A.M Scholl** (*co-first authors*), E.N. Kuhn, H.A. Stadt, J.R. Decker, K. Pegram, M.R. Hutson, and M.L. Kirby. 2011. FGF8 signaling is chemotactic for cardiac neural crest cells. Developmental Biology 354:18-30. DOI: 10.1016/j.ydbio.2011.03.010

(1) **Scholl, A.M.**, and M.L. Kirby. 2009. Signals controlling neural crest contributions to the heart. Wiley Interdisciplinary Reviews: Systems Biology and Medicine 1:220-227. DOI: 10.1002/wsbm.8

— Conference Proceedings & Papers —

(21) Ortiz, E., A. Duskin, N. Hassett, C. Izurieta, and **A.M. Reinhold**. 2025. Integrating Vulnerability Assessments with Security Control Compliance. Proceedings of the Conference on Cybersecurity Education, Research, and Practice (CCERP 2025).

(20) Ortiz, E., C. Izurieta, and **A.M. Reinhold**. 2025. An eBPF-Based Scheduler for the AFL++ Fuzzer. Proceedings of the IEEE 5th Cyber Awareness and Research Symposium (CARS '25).

(19) Perkins G., T. Running Crane, A. Hezekiah, B. Macht, C. Major, **A.M. Reinhold**, C. Izurieta, and B. LaMeres. 2025. Cybershield: Secure Boot for Obfuscated Instruction Codes. Proceedings of the IEEE SMC-IT/SCC 2025. Preprint URL: https://www.cs.montana.edu/izurieta/pubs/Cybershield_SMC-IT_SCC_2025.pdf

(18) Munro, M., M. Ruiz-Aravena, E.A. Shanahan, S. Washburn, and **A.M. Reinhold**. 2025. Integrating Computational Text Analysis into Risk and Crisis Communication Development. Proceedings of the 26th IEEE International Conference on Information Reuse and Integration for Data Science. DOI: 10.1109/IRI66576.2025.00075

(17) Boles B., C. Izurieta, and **A.M. Reinhold**. 2025. Connecting the Dots: An Integrated Vulnerability Knowledge Graph for Security Practitioners. Proceedings of the 26th IEEE International Conference on Information Reuse and Integration for Data Science. DOI: 10.1109/IRI66576.2025.00050 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/IRI_2025.pdf

(16) Sheppard E., Z. Wadhams, D. Arford, C. Izurieta, and **A.M. Reinhold**. 2025. Wicked Problem, Parsimonious Solution: Securing Electric Vehicle Charging Station Software. Proceedings of the IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). DOI:

10.1109/CSR64739.2025.11130101 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/Sheppard_CSR_2025.pdf

(15) Rahman K., **A.M. Reinhold**, and C. Izurieta. 2025. Metamorphic Relation Prediction for Security Vulnerability Testing of Online Banking Applications. Proceedings of the IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). DOI: 10.1109/CSR64739.2025.11130068 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/Rahman_CSR_2025.pdf

(14) Shu Fuhnwi G., **A.M. Reinhold**, and C. Izurieta. 2025. Reducing Human-Induced Label Bias in SMS Spam with Context-Enhanced Clustering (CEC). Proceedings of the IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). DOI: 10.1109/CSR64739.2025.11130032 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/Gerard_CSR_2025.pdf

(13) Perkins, G., B. Macht, L. Ritzdorf, T. Running Crane, **A.M. Reinhold**, C. Izurieta, and B. LaMeres. 2025. SoK: Trusted Execution in SoC-FPGAs. Proceedings of the IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC). DOI: 10.1109/IETC64455.2025.11039468 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/iETC_Perkins_2025.pdf

(12) Liyanage K., E.L. Gerard, D. Reimanis, **A.M. Reinhold**, C. Izurieta, B. LaMeres, and B. Whitaker. 2025. Unsupervised Mapping of Quantitative Measures to Qualitative Characteristics in Hierarchical Software Quality Assurance. Proceedings of the IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC). DOI: 10.1109/IETC64455.2025.11039495 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/iETC_Kaveen_2025.pdf

(11) Johnson C., **A.M. Reinhold**, C, Izurieta, B. Whitaker, and B. LaMeres. 2025. Verification Tool for Securing RISC-V FPGA-Based Process Control System. Proceedings of the IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC). DOI: 10.1109/IETC64455.2025.11039336 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/iETC_Johnson_2025.pdf

(10) **Reinhold, A.M.**, S.A. Ewing, R.A. Payn, G.C. Poole, and H.M. Valett. 2025. Simulating Streams as Biogeochemical Reactors. Proceedings of the 12th IEEE Conference on Technologies for Sustainability (IEEE SusTech). DOI: 10.1109/SusTech63138.2025.11025744 Preprint URL: https://tinyurl.com/SusTech2025

(9) Manzi Muneza A.R., A. Keefe, E. O'Donoghue, C. Izurieta, and **A.M. Reinhold.** 2025. SBOM Generation Tools and Formats Affect Compliance with US Standard. Proceedings of the 3rd International Workshop on Mining Software Repositories for Privacy and Security, MSR4P&S, SANER 2025. DOI: 10.1109/SANER-C66551.2025.00019 Preprint URL: https://www.cs.montana.edu/izurieta/pubs/MSR4PS_2025.pdf

(8) Wadhams, Z., C. Izurieta, and **A.M. Reinhold**. 2024. Barriers to Using Static Application Security Testing (SAST) Tools: A Literature Review. Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering Workshop on Human-Centric Software Engineering & Cyber Security (HCSE&CS-2024). DOI: 10.1145/3691621.3694947

(7) Boles, B., E. O'Donoghue, A.R. Manzi Muneza, G. Perkins, C. Izurieta, and **A.M. Reinhold**. 2024. Deciphering Discrepancies: A Comparative Analysis of Docker Image Security. Proceedings of the 24th IEEE International Conference on Source Code Analysis and Manipulation (SCAM). DOI: 10.1109/SCAM63643.2024.00034

(6) O'Donoghue, E., B. Boles, C. Izurieta, and **A.M. Reinhold**. 2024. Impacts of Software Bill of Materials (SBOM) Generation on Vulnerability Detection. Proceedings of the 2024 ACM Workshop on Software Supply Chain Offensive Research and Ecosystem Defenses (SCORED). DOI: 10.1145/3689944.3696164

(5) Wadhams, Z., **A.M. Reinhold**, and C. Izurieta. 2024. Automating Static Code Analysis Through CI/CD Pipeline Integration. Proceedings of the 2024 International Workshop on Mining Software Repositories Applications for Privacy and Security. DOI: 10.1109/SANER-C62648.2024.00021

(4) O'Donoghue, E., **A.M. Reinhold**, and C. Izurieta. 2024. Assessing Security Risks of Software Supply Chains Using Software Bill of Materials. Proceedings of the 2024 International Workshop on Mining Software Repositories Applications for Privacy and Security. DOI: 10.1109/SANER-C62648.2024.00023

(3) Gore, R., B. Ezell, C.J. Lynch, J. O'Brien, V. Zamponi, E. Jensen, C. Izurieta, M.H. Munro, E.A. Shanahan, and **A.M. Reinhold**. 2024. Building a domain agnostic framework for efficient and effective risk communication messages. Proceedings of MODSIM World 2024. URL: https://modsimworld.org/papers/2024/MODSIM_2024_paper_26.pdf

(2) **Reinhold, A.M.**, T. Weber, C. Lemak, D. Reimanis, and C. Izurieta. 2023. New version, new answer: Investigating cybersecurity static-analysis tool outputs. Proceedings of the 2023 IEEE International Conference on Cyber Security and Resilience. DOI: 10.1109/CSR57506.2023.10224930

(1) Raile, E.D., H. King, E.A. Shanahan, J. McEvoy, C. Izurieta, N. Bergmann, K. French, R. Ready, **A.M. Reinhold**, and G.C. Poole. 2018. Narrative-based risk communication: a *lingua franca* for natural hazard messages? Conference Paper of the Midwest Political Science Association 2018 Annual Meeting. URL: https://www.cs.montana.edu/izurieta/pubs/mpsa2018.pdf

— Book Chapter —

(1) Valett, H.M., and **A.M. Reinhold**. 2022. Groundwater and Surface Water Interaction. *Encyclopedia of Inland Waters* (2nd Edition ed., vol. 3, pp. 348-362). Elsevier. DOI: 10.1016/B978-0-12-819166-8.00146-8.

— Theses & Dissertation —

Reinhold, A.M. 2014. Responses of fish assemblages to bank stabilization in a large river. Doctoral dissertation, Montana State University, Bozeman, Montana.

Scholl, A.M. 2008. The role of FGF8 signaling in cardiac neural crest development. Master's thesis, Duke University, Durham, North Carolina.

Scholl, A.M. 2004. The effects of gonadal steroids on tyrosine hydroxylase immunoreactive neurons in the brain of the developing tiger salamander, *Ambystoma tigrinum*. Undergraduate honors thesis, University of Colorado, Boulder, Colorado.

—Software —

(2) **Reinhold, A.M.**, R.A. Payn, and S.A. Ewing. 2022. systERS v1.0: System for Environmental Reactor Simulation. https://github.com/ReinholdLab/systERS

(1) Poole, G.C., and **A.M. Reinhold**. 2018. gangsta v1.0: Generalized algorithm for nutrient, growth, stoichiometric, and thermodynamic analysis. https://github.com/FluvialLandscapeLab/gangsta

— Software Vignettes —

(1) **Reinhold, A.M.** 2018. Using gangsta v1.0. https://github.com/FluvialLandscapeLab/gangstaBuiltPackage

— Research Datasets and Pre-Analysis Plans —

(5) **Reinhold, A.M.**, T. Weber, C. Lemak, D. Reimanis, and C. Izurieta. 2023. Reproducible data science pipeline and code for: New Version, New Answer: Investigating Cybersecurity Static-Analysis Tool Findings. https://github.com/MSUSEL/tool-evolution

(4) **Reinhold, A. M.**, S.A. Ewing, R.A. Payn, G.C. Poole, and H.M. Valett. 2022. Sensitivity analysis protocol and code for Simulating stream corridors as biogeochemical reactors: A Damköhler perspective on environmental solute transport and processing. https://reinholdlab.github.io/systERS numExpt WRR/

(3) Poole, G., S. K. Fogg, S.J. O'Daniel, **A.M. Reinhold**, S. Carlson, E.J. Mohr, and H. Oakland. 2022. Conceptualizing relationships among hyporheic exchange, storage, and water age: Data represented in published figures. DRYAD. DOI: 10.5061/dryad.m905qfv2q

(2) Shanahan, E.A., **A.M. Reinhold,** E.D. Raile, G.C. Poole, R. Ready, J. McEvoy, N. Bergmann, C. Izurieta, and H. King. 2019. Dataset for Characters matter: How narratives shape affective responses to risk communication. Dryad. DOI: 10.5061/dryad.b8gtht784

(1) Raile, E.D., E.A. Shanahan, J. McEvoy, C. Izurieta, N.T. Bergmann, R. Ready, **A.M. Reinhold**, and G.C. Poole. 2019. Pre-Analysis Plan for Narrative Risk Communication as a Lingua Franca for Natural Environmental Hazard Preparation. Pre-analysis plan ID# 20190729AA. DOI: 10.17605/OSF.IO/P3D64

TEACHING, OUTREACH, & SERVICE

— Teaching —

- Instructor for CSCI 491, Data Science Capstone, Montana State University, Spring 2026.
- Instructor for CSCI 491, Data Science Capstone, Montana State University, Spring 2025.
- Instructor for CSCI 590, Investigation of Malware Quality (3-Credit Independent Study for A. Porcella), Montana State University, Spring 2025.
- Instructor for CSCI 215, Social and Ethical Issues in Computing, Montana State University, Fall 2024.
- Instructor for CSCI 591, Data Storytelling, Montana State University, Spring 2024.
- Instructor for CSCI 127, The Joy & Beauty of Data, Montana State University, Fall 2023.
- Instructor for CSCI 491, Data Science Capstone, Montana State University, Spring 2023.
- Instructor for CSCI 492, Applied Research in Databasing and Software Development (3-Credit Independent Study for M. Munro), Montana State University, Spring 2023.
- Instructor for CSCI 215, Social and Ethical Issues in Computing, Montana State University, Fall 2022.
- Instructor for LRES 592, Approaches for Quantifying Water Movement Through Soil (1-Credit Independent Study for E.S. Rhodes), Montana State University, Spring 2022.
- Instructor for upper-level course Stream Restoration Ecology, Montana State University, Fall 2015.
- Visiting Instructor for Stream Restoration Ecology, Montana State University, Fall 2014.
- Teaching Assistant for Cell and Developmental Biology, Duke University, 2007.
- Undergraduate Teaching Assistant for Human Physiology, University of Colorado, 2003.

— Mentoring —

- Primary advisor for the following:
    - Ph.D. students:
        - Emma Sheppard, Ph.D. student in Computer Science, 2024-present
        - Zach Wadhams, Ph. Ph.D. student in Computer Science, 2024-present
        - Yvette Hastings, Ph.D. student in Computer Science, 2023-present
        - A. Redempta Manzi Muneza, Ph.D. student in Computer Science, 2023-present
    - M.S. students:
        - Bryan Portillo, M.S. student in Computer Science, 2024-present
        - Angelo Porcella, M.S. student in Computer Science, 2024-2025
        - Mark Braun, M.S. student in Statistics, 2024-2025
        - Madie Munro, M.S. student in Computer Science, 2023-2025
        - Brittany Boles, M.S. student in Cybersecurity, 2023-2025
- Graduate committee member for the following graduate students:
    - Ph.D. in Gianforte School of Computing at Montana State University:
        - Ernesto Ortiz Rey, Ph.D., 2023-present
        - Tom McElroy, Ph.D., 2024-2025
        - Eric O'Donoghue, Ph.D., 2024-2025

        - Gideon Olasunbo Popoola, Ph.D., 2023-2025
        - Gerard Shu Fuhnwi, Ph.D., 2022-2024
        - Nishu Nath, Ph.D., 2023-2024
        - Apostolos Kalatzis, Ph.D., 2022-2023
        - Giorgio Luigi Morales Luna, Ph.D., 2022-2023
        - Xuying Swift, Ph.D., 2022-2023
    - M.S. in Gianforte School of Computing at Montana State University:
        - Zachary Wadhams, M.S., 2024-2025
        - Garrett Perkins, M.S., 2023-2025
        - Christine Johnson, M.S., 2023-2025
        - Eric O'Donoghue, M.S., 2023-2024
        - Christine Johnson, M.S. 2022-2024
        - Payton Harrison, M.S. 2021-2022
        - Susan McCartney, M.S. 2021-2022
    - Ph.D. in Electrical Engineering at Montana State University:
        - Kaveen Liyanage, 2024-2024
    - Ph.D. in Ecology and Environmental Sciences at Montana State University:
        - Caitlin Mitchell Mayernik, Ph.D. student, 2021-2024
        - S. Katie Fogg, Ph.D. student, 2019-2024
- NSF REU mentor for:
    - Sabrina Hendricks and Gabe Cowley (Cybersecurity algorithms), summer 2023
    - Travis Weber and Collen Lemak (Cybersecurity algorithms), summer 2022
- Guided and supported the research of fifteen students from the undergraduate to Ph.D. level, 2014-2022
- Graduate student mentor for E.N. Kuhn, an undergraduate Howard Hughes Research Fellow, at Duke University, 2007-2008

— Outreach —

- Co-created and sustain MSU's CyberHub, a cybersecurity resource center for MSU students, which enhances student networks and promotes undergraduate and graduate student development through internship opportunities, job openings, and cyber competitions.
- Co-created and sustain an independent advisory board of cybersecurity experts to ensure SECL, INSRE, and MSU students' academic and practical skills development meets contemporary demands for a mission ready workforce.
- Participated in and assisted with the creation of the MSU Cybersecurity Hub Commercial airing in Fall 2024 (https://youtu.be/uaK2SKYhGB8?si=5csnHO2wV-as4roC), 2023-2024.
- Discussed my research, passion for science, and advice for young scientists on the Montana CREWS Blog (http://bit.ly/ReinholdCREWS). Excerpts of this interview were also featured in the Cool Careers section of the Autumn 2020 Montana Girls STEM Collaborative newsletter (http://bit.ly/ReinholdCoolCareer).
- Created and implemented a hands-on lesson to facilitate understanding of the water cycle. Lesson was presented to the Sunshine classroom at Middle Creek Montessori and remains available to students, 2020.
- Volunteered as a kindergarten reading aide in the Sunshine classroom at Middle Creek Montessori, 2018-2019.
- Engaged private landowners and a land trust in a partnership wherein the undergraduate and graduate students in my Stream Restoration Ecology course conducted an ecological assessment of a stream running through the stakeholders' land and subsequently provided scientifically based restoration recommendations to the stakeholders at a public forum, 2015.
- Outreach Committee Chair for the Montana State University Chapter of the American Fisheries Society. I organized and implemented monthly educational events at the Children's Museum of

Bozeman (CMB). Additionally, I provided the CMB with native fish for their aquarium, maintained their aquarium, and provided educational materials for the CMB, 2011-2012.

- Riverside Presenter for the Yellowstone River Conservation District Council Boat Tour. I educated a cadre of stakeholders, regulatory agencies, restoration practitioners, and scientists about Yellowstone River fish assemblage structure and function, 2011.
- Keynote Speaker at the Kids' Inquiry Conference at the Durham School of the Arts. I educated children about ways of using scientific inquiry to transform their perspectives, 2008.
- Invited Speaker at the rural Ridgway High School in southwest Colorado. I spoke with multiple classes about the value of science to society, how scientific discoveries influence policy, and the types of careers available to students who pursue college degrees in science, 2008.

— Service —

- Tutorials Chair for IEEE Cyber Security & Resilience Annual Conference, 2025.
- Guiding federal software supply chain security as an invited presenter and workshop contributor at the following annual workshop: Protecting the Software and Hardware Supply Chain: An R&D Workshop co-hosted by DHS S&T and NITRD CSIA IWG, 2024-2025.
- Guiding federal cyber policy via participation in a joint DOD/DHS/NNSA community of practice (now SSCA, formerly SwA CoP) as invited presenter to the broader community and as contributors to working groups, 2024-present.
- Shepherded the creation of the MS in Cybersecurity Degree program and its certification by the NSA, 2022-present.
- Faculty search committee for Gianforte School of Computing at MSU. Reviewed large pool of applications, selected candidates, interviewed candidates virtually and in person, provided recommendations on new faculty hires, 2024-2025.
- US Cyber Command primary POC. Led the formalizing of the MSU partnership with US Cyber Command, enabling MSU to receive formal invitations form an Educational Partnership Agreement (EPA) and join their Academic Engagement Network (AEN). Wrote and submitted application to join the AEN, and currently shepherding the MSU application to join the US Cyber Command EPA, 2024-present.
- Shaped the Institute for National Security Research & Education (INSRE) in partnership with leaders from the Office of Research & Economic Development, the Innovation Campus, MilTech, the Applied Research Laboratory, and two other MSU NACOE professors, 2023-present.
- Engaged with industry partners by organizing RTX-MSU Collaboration Days in partnership with the MSU Applied Research Laboratory, February 8-9, 2024.
- Proposal Reviewer for Research Expansion Funds (REF) Grant Program, Spring 2024 semester.
- In my Data Science Capstone Course, I instructed a student who conducted essential data analytics for a local rural fire department to improve 911 response efficacy, attended meetings with the fire chiefs, and ensured the analytics the student provided were sound, Spring semester 2023.
- Keynote Speaker for STEM Summer Institute, a regional conference for K12 teachers, August 2024.
- Developed assignment in CSCI 215 to provide K12 teachers with age-appropriate videos to help them teach ethical issues associated with technology, computing, and big data, Fall semester 2022 and 2024.
- Program Committee Member and Reviewer for IEEE Cyber Security & Resilience Annual Conference, 2023-2025.
- Programs Committee Member and Reviewer for 1st International Workshop on Methodological Issues with Empirical Studies in Software Engineering (co-convened with ICSE), 2023.
- Early Career Representative serving on the Society for Freshwater Science's Board of Directors—representing both the early career and data scientist perspectives at the highest level of the Society, 2021-2024.
- Guest speaker for MSU Grant Writing Bootcamp on topic of writing successful interdisciplinary proposals, 2022.

- Ad hoc reviewer for proposals submitted to the National Science Foundation's Division of Environmental Biology, 2019.
- Developed, distributed, and wrote the vignette for a software framework and R package that utilizes first principles of stoichiometry and thermodynamics to generate models that simulate any suite of elemental cycles, compounds, metabolic processes, and microorganisms, 2018.
- Served as scientific advisor to Yellowstone River Technical Advisory Committee, thereby guiding Yellowstone River conservation policy by providing data analysis, expert opinion, and literature review on fisheries management for the middle and lower Yellowstone River, 2009-2014.
- Educated and counseled stakeholders by providing information to Yellowstone River Conservation District Council members about the effects of land use practices on Yellowstone River fish, 2009-2014.
- Improved regulatory agency permitting processes by educating regulatory agencies about the effects of bank armoring and side-channel plugging on Yellowstone River fish assemblages, 2009-2014.
- Organized and implemented an interdisciplinary journal club for Montana State University graduate students and faculty from two departments, and USGS scientists studying freshwater systems, 2013.
- Facilitated the conservation of Yellowstone River fish by providing baseline data for the study investigating the effects of the 2011 Exxon Silvertip pipeline oil spill on fish assemblages and assisted in securing funds for this study, 2011-2012.
- Co-organized the Ecology Department Seminar Series at Montana State University, Bozeman, 2009-2010.
- Promoted the dissemination of scientific information among biological disciplines within Duke University when serving as a committee member for the Duke University Annual Biological Sciences Graduate Student Symposium, 2006-2008.

— Popular Press —

- My scholarship and outreach have been featured in various news outlets.
  - "Montana State designated as National Center of Academic Excellence in Cyber Defense." *Montana State University News Service*, December 15, 2025. https://www.montana.edu/news/25002/montana-state-designated-as-national-center-of-academic-excellence-in-cyber-defense
  - "Montana State working to secure electric vehicle charging infrastructure." *Montana State University News Service*, April 7, 2025. https://www.montana.edu/news/24359/montana-state-working-to-secure-electric-vehicle-charging-infrastructure
  - "Matching challenges: MSU cybersecurity experts bolster crucial branch of infrastructure defense." *Mountains & Minds*, November 4, 2024. https://www.montana.edu/news/mountainsandminds/24090/matching-challenges
  - "MSU receives award to improve cybersecurity." *KBZK Bozeman News Channel 7*, December 13, 2022. https://www.kbzk.com/news/local-news/msu-receives-award-to-improve-cybersecurity
  - "Montana State University receives $4 million from Homeland Security for cybersecurity project." *Bozeman Daily Chronicle*, December 5, 2022. https://www.bozemandailychronicle.com/news/montana_state_university/montana-state-university-recieves-4-million-from-homeland-security-for-cybersecurity-project/article_d15713d2-71b3-11ed-89b1-9f91344aa4ea.html
  - "Montana State receives $4.47 million award for improving cybersecurity." *Montana State University News Service*, November 11, 2022. https://www.montana.edu/news/22467/montana-state-receives-4-47-million-award-for-improving-cybersecurityhttps://www.montana.edu/news/22467/montana-state-receives-4-47-million-award-for-improving-cybersecurity
  - "MSU research team receives NSF grant to study nitrogen impact on water quality." *Montana State University News Service*, 2020. URL: https://bit.ly/SitS_PressRelease

- "MSU partners with federal lab on $3.1 million cybersecurity research project." *Montana State University News Service*, 2020. URL: https://bit.ly/CyberQR_PressRelease
- "MSU team quantifies the importance of storytelling in crisis communication." *Montana State University News & Bozeman Magazine*, 2020. URLs: http://bit.ly/NarrativeRisk and http://bit.ly/NarrativeRiskBozMag
- "Victims vs Heroes: An Interdisciplinary Approach to the Study of Narrative-Based Risk Communication." *Confluence (MSU College of Letters and Science)*, 2018. URL: http://bit.ly/VictimsVsHeroes
- "4-year study gives insight to Yellowstone River fishery between Laurel, Sidney." *Billings Gazette*, 2016. URL: http://bit.ly/2yts8BY
- "Inside the incredible Yellowstone." *Sidney Herald*, 2016. URL: http://bit.ly/2hmeKbd
- "Yellowstone side channel impacts on fish species focus of ARS talk." *Sidney Herald*, 2016. URL: http://bit.ly/2wDD9Ug
- "Corps committed to foster pallid sturgeon habitat in Yellowstone River." *Billings Gazette*, 2011. URL: http://bit.ly/2waHpWI

PRESENTATIONS

— Keynote Addresses & Invited Presentations —

(22) **Reinhold, A.M.** 2025. Aggregating Multiple Vulnerability Databases to Improve Software Supply Chain Transparency and Security. Invited Talk, Protecting the Software and Hardware Supply Chain: An R&D Workshop co-hosted by DHS S&T and NITRD CSIA IWG. September 16, 2025, Washington, D.C.

(21) **Reinhold, A.M.** 2025. The Domain Agnostic Risk Communication (DARC) Framework. Tech Talk, U.S. Cyber Command. May 12, 2025, Fort Meade, MD, USA.

(20) **Reinhold, A.M.** 2025. Towards Discerning the Root Causes of Variation in SBOMs: A Data Science Approach. Invited Talk, Software and Supply Chain Assurance Winter Forum. January 29, 2025, MITRE, McLean, VA, USA.

(19) **Reinhold, A.M.,** and C. Izurieta. 2024. Towards Secure-by-Design Electrical Vehicle Charging Infrastructure. Invited Seminar, US Department of Homeland Security Cybersecurity Community of Interest. December 10, 2024, Virtual.

(18) **Reinhold, A.M.,** and C. Izurieta. 2024. Integrating Data Science and Software Assurance to Secure the Software Supply Chain. Invited Talk, Protecting the Software and Hardware Supply Chain: An R&D Workshop co-hosted by DHS S&T and NITRD CSIA IWG. September 24, 2024, Washington, D.C.

(17) **Reinhold, A.M.,** and C. Izurieta. 2024. Rigorous Evaluation of Software Quality Solutions Using Data Science. Invited Talk, United States Software Assurance Community of Practice 2024 Fall Meeting. September 5, 2024, Los Alamos National Laboratory, Los Alamos, NM, USA.

(18) Izurieta, C. and **A.M. Reinhold**. 2024. Hierarchical Software Quality Assurance (HSQA). Invited Talk, United States Software Assurance Community of Practice 2024 Fall Meeting. September 5, 2024, Los Alamos National Laboratory, Los Alamos, NM, USA.

(15) **Reinhold A.M.**, D. Reimanis, B. Whitaker, and C. Izurieta. Bolstering Software Security with a Rigorous Quality Assurance Approach. Invited Seminar, U.S. Department of Homeland Security (DHS) Cybersecurity & Infrastructure Security Agency (CISA) Cybersecurity Directorate (CSD) Brown Bag Seminar. August 21, 2024, Virtual.

(14) **Reinhold, A.M.** 2024. Obstacles as Opportunities: Viewing the World through the Lens of a Data Scientist. Keynote Address, STEM Summer Institute. August 6, 2024, Bozeman, MT.

(13) **Reinhold, A.M.** 2024. Pacific Northwest National Laboratory Workshop on Mathematics for Artificial Reasoning in Science. Invited Panelist. May 1, 2024, Seattle, WA.

(12) **Reinhold A.M.**, C. Izurieta, R. Gore, B. Ezell, C. Lynch, M.H. Munro, J. Cordner, V. Zamponi, and E.A. Shanahan. 2024. From Phishing to Floods: Effective and Timely Risk Communication

Messages are Imperative. Invited Seminar, Cybersecurity Education and Research (CySER) Program. April 15, 2024, Virtual.

(11) **Reinhold A.M.**, C. Izurieta, R. Gore, B. Ezell, C. Lynch, M.H. Munro, J. Cordner, V. Zamponi, and E.A. Shanahan. 2024. Computationally Enhanced Risk Communication: Improving Hazard Preparedness Using Mixed Methods. Invited Seminar, Mixed Methods International Research Association. March 28, 2024, Virtual.

(10) **Reinhold A.M.**, E.A. Shanahan, R.J. Gore, B. Ezell, C. Lynch, C. Izurieta, J. Cordner, V. Zamponi, and M.H. Munro. 2023. Building a Domain Agnostic Framework for Efficient and Effective Risk Communication Messages. Invited Presentation, MORS U.S. National Security Risk Analysis October 2023 Session. October 26, 2023, Virtual.

(9) **Reinhold, A.M.**, R. Gore, E.A. Shanahan, B. Ezell, and C. Izurieta. 2023. A call for convergence in risk and crisis communication research. Distinguished Lecture, Virginia Modelling, Simulation, and Analysis Center Distinguished Lecture Series. May 11, 2023, Old Dominion University, Norfolk, VA.

(8) **Reinhold, A.M.** 2021. Improving research design with data science. Research seminar. Gianforte School of Computing Seminar Series. Gianforte School of Computing, Montana State University. November 30, 2021, Bozeman, MT.

(7) **Reinhold, A.M.**, R.G. Bramblett, A.V. Zale, G.C. Poole, and D.W. Roberts. 2016. Evaluating the importance of side channels to fish in the last best place – the Yellowstone River, Montana. Research seminar. United States Department of Agriculture Agricultural Research Service – Northern Plains Agricultural Research Laboratory. Sidney, MT.

(6) **Reinhold, A.M.**, G.C. Poole, A.M. Helton, R. Payn, C. Izurieta, and E.S. Bernhardt. 2016. A thermodynamic approach to simulating linked biogeochemical cycles using constraint-based, compound specific models. Research seminar. United States Department of Agriculture Agricultural Research Service - Livestock and Range Agricultural Research Laboratory. Miles City, MT.

(5) **Reinhold, A.M.**, R.G. Bramblett, and A.V. Zale. 2014. Responses of fish assemblages to bank stabilization in the lower Yellowstone River. Research seminar. Yellowstone River Technical Advisory Committee. Billings, MT.

(4) **Reinhold, A.M.**, R.G. Bramblett, A.V. Zale, and G.C. Poole. 2012. Responses of a large river fish assemblage to bank stabilization. Research seminar. Yellowstone River Technical Advisory Committee. Billings, MT.

(3) **Reinhold, A.M.**, R.G. Bramblett, and A.V. Zale. 2011. Effects of bank stabilization on Yellowstone River fish assemblages. Research seminar. Yellowstone River Conservation District Council. Billings, MT.

(2) **Reinhold, A.M.**, R.G. Bramblett, and A.V. Zale. 2010. The effects of anthropogenic habitat changes on fish assemblages of the middle and lower Yellowstone River. Research seminar. Yellowstone River Technical Advisory Committee. Bozeman, MT.

(1) **Scholl, A.M.** 2008. Using scientific inquiry to transform obstacles into stepping stones. Keynote speaker. Kids' Inquiry Conference, Durham School of the Arts. Durham, NC.

— Contributed Presentations —

(Students underlined; non-first-author presentations omitted prior to 2014**)**

(76) Fogg, S.K., S. Ewing, **A.M. Reinhold**, R.A. Payn, C. Krause, Y. Hastings, S. Warnat, N. Ahmed, and W. Kray. 2025. Simulating Production and Loss of Nitrate at Pore Scale in Non-Irrigated Grassland Soils, American Geophysical Union Annual Meeting, New Orleans, Louisiana, USA, December 18, 2025.

(75) Ortiz, E., A. Duskin, N. Hassett, C. Izurieta, and **A.M. Reinhold**. 2025. Integrating Vulnerability Assessments with Security Control Compliance. The Conference on Cybersecurity Education, Research, and Practice (CCERP 2025), Seattle, WA, November 2025.

(74) Ortiz, E., C. Izurieta, and **A.M. Reinhold**. 2025. An eBPF-Based Scheduler for the AFL++ Fuzzer. The IEEE 5th Cyber Awareness and Research Symposium (CARS '25), Grand Forks, ND, USA, October 2025.

(73) Liyanage K., E.L. Gerard, D. Reimanis, **A.M. Reinhold**, C. Izurieta, B. LaMeres, and B. Whitaker. 2025. Unsupervised Mapping of Quantitative Measures to Qualitative Characteristics in Hierarchical Software Quality Assurance. The IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC), Utah, USA, May 2025.

(72) Munro, M., M. Ruiz-Aravena, E.A. Shanahan, S. Washburn, and **A.M. Reinhold**. 2025. Integrating Computational Text Analysis into Risk and Crisis Communication Development. The 26th IEEE International Conference on Information Reuse and Integration for Data Science. San Jose, CA, USA, August 6-8, 2025.

(71) Boles B., C. Izurieta, and **A.M. Reinhold**. 2025. Connecting the Dots: An Integrated Vulnerability Knowledge Graph for Security Practitioners. Proceedings of the 26th IEEE International Conference on Information Reuse and Integration for Data Science. San Jose, CA, USA, August 6-8, 2025.

(70) Perkins G., T. Running Crane, A. Hezekiah, B. Macht, C. Major, **A.M. Reinhold**, C. Izurieta, and B. LaMeres. 2025. Cybershield: Secure Boot for Obfuscated Instruction Codes. The IEEE SMC-IT/SCC 2025. Los Angeles, CA, USA, July 28 - Aug 1, 2025.

(69) Sheppard E., Z. Wadhams, D. Arford, C. Izurieta, and **A.M. Reinhold**. 2025. Wicked Problem, Parsimonious Solution: Securing Electric Vehicle Charging Station Software. The IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). Chania, Greece, August 4-6, 2025.

(68) Rahman K., **A.M. Reinhold**, and C. Izurieta. 2025. Metamorphic Relation Prediction for Security Vulnerability Testing of Online Banking Applications. The IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). Chania, Greece, August 4-6, 2025.

(67) Shu Fuhnwi G., **A.M. Reinhold**, and C. Izurieta. 2025. Reducing Human-Induced Label Bias in SMS Spam with Context-Enhanced Clustering (CEC). The IEEE International Conference on Cybersecurity and Resilience (IEEE-CSR). Chania, Greece, August 4-6, 2025.

(66) Perkins, G., B. Macht, L. Ritzdorf, T. Running Crane, **A.M. Reinhold**, C. Izurieta, and B. LaMeres. 2025. SoK: Trusted Execution in SoC-FPGAs. The IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC). Utah, USA, May 2025.

(65) Payn, R.A, **A.M. Reinhold**, S. Ewing, H.M.V. Valett, and M.D. DeGrandpre. 2025. Dimensional analysis of the reference frames underlying common reactive transport and nutrient spiraling concepts in natural waters, Annual Meeting of the Society for Freshwater Science, San Juan, Puerto Rico, May 19, 2025.

(64) Johnson C., **A.M. Reinhold**, C, Izurieta, B. Whitaker, and B. LaMeres. 2025. Verification Tool for Securing RISC-V FPGA-Based Process Control System. The IEEE Intermountain Engineering, Technology, and Computing Conference (i-ETC). Utah, USA, May 2025.

(63) **Reinhold, A.M.**, Ewing, S., Payn, R., Poole, G., Valett, H.M. 2025. Simulating Streams as Biogeochemical Reactors. 12th IEEE Conference on Technologies for Sustainability (IEEE SusTech). April 23, 2025, Los Angeles, CA, USA.

(62) Manzi Muneza A.R., A. Keefe, E. O'Donogue, Izurieta C., **Reinhold A.M.** 2025 SBOM Generation Tools and Formats Affect Compliance with US Standard, 3rd International Workshop on Mining Software Repositories for Privacy and Security, MSR4P&S, SANER. March 4, 2025, Montreal, Canada.

(61) Wadhams, Z., C. Izurieta, and **A.M. Reinhold**. 2024. Barriers to Using Static Application Security Testing (SAST) Tools: A Literature Review. 39th IEEE/ACM International Conference on Automated Software Engineering Workshop on Human-Centric Software Engineering & Cyber Security (HCSE&CS-2024). October 28, 2024, Sacramento, CA, USA.

(60) O'Donoghue, E., B. Boles, C. Izurieta, and **A.M. Reinhold**. 2024. Impacts of Software Bill of Materials (SBOM) Generation on Vulnerability Detection. 2024 ACM Workshop on Software

Supply Chain Offensive Research and Ecosystem Defenses (SCORED). October 18, 2024, Salt Lake City, UT, USA.

(59) Boles, B., E. O'Donoghue, A.R. Manzi Muneza, G. Perkins, C. Izurieta, and **A.M. Reinhold**. 2024. Deciphering Discrepancies: A Comparative Analysis of Docker Image Security. 24th IEEE International Conference on Source Code Analysis and Manipulation (SCAM). October 8, 2024, Flagstaff, AZ, USA.

(58) Hastings, Y.H., W. Kray, R. Payn, S. Warnat, S. Ewing, and **A.M. Reinhold**. 2024. systERS: Incorporating Soil Dynamics in a Modular Biogeochemical Transport Modeling Framework. NSF Signals in the Soil Program. June 2024, Virtual.

(57) **Reinhold, A.M.**, B. Boles, A.R. Manzi Muneza, T. McElroy, and C. Izurieta. 2024. Characterizing and Surmounting Challenges in Aggregating Static-Analysis Tool Results. HammerCon. May 16, 2024, Laurel, MD.

(56) O'Donoghue, E., **A.M. Reinhold**, and C. Izurieta. 2024. Assessing Security Risks of Software Supply Chains Using Software Bill of Materials. 2024 International Workshop on Mining Software Repositories Applications for Privacy and Security at SANER. March 12, 2024, Rovaniemi, Finland.

(55) Wadhams, Z., **A.M. Reinhold**, and C. Izurieta. 2024. Automating Static Code Analysis Through CI/CD Pipeline Integration. 2024 International Workshop on Mining Software Repositories Applications for Privacy and Security at SANER. March 12, 2024, Rovaniemi, Finland.

(54) **Reinhold, A.M.**, T. Weber, C. Lemak, D. Reimanis, and C. Izurieta. 2023. New version, new answer: Investigating cybersecurity static-analysis tool outputs. 2023 IEEE International Conference on Cyber Security and Resilience. Venice, Italy.

(53) Izurieta, C., N. Woods, **A.M. Reinhold**, and Y. Hastings. 2023. A Brief of Distributed Data Processing. 49th Euromicro Conference Series on Software Engineering and Advanced Applications (SEAA). Durres, Albania.

(52) Hastings, Y., and **A.M. Reinhold**. 2023. Applying Software Quality in Use Standards to Improve Scientific Software Selection. 49th Euromicro Conference Series on Software Engineering and Advanced Applications (SEAA). Durres, Albania.

(51) S. Hendricks, G. Cowley, R. Manzi, and **A.M. Reinhold**. 2023. Cybersecurity Static Analysis of Docker Images. NSF REU: Research Experiences in Cybersecurity Algorithms Research Summit. Montana State University, Bozeman, MT.

(50) A. Webster, H. Lowman, B. Summers, S. Earl, X. Dong, **A.M. Reinhold**, J. Blaszczak, M. Lauck, L. Gianes-Sewell, N. Grimm, and T. Harms. 2023. Precipitation constrains biogeochemical responses of arid land catchments to fire. ASLO Aquatic Sciences Meeting. Palma De Mallorca, Spain.

(49) Ewing, S.A., R.A. Payn, **A.M. Reinhold**, C.M. Mitchell, M.J. Foster, S. Keeshin, and W.P. Gardner. 2022. Legacy of Agriculture and Urbanization Influence Water Quality in Two Tributary Watersheds of the Upper Missouri River. American Geophysical Union Fall Meeting, Chicago, IL.

(48) Ewing, S.A., R.A. Payn, **A.M. Reinhold**, E. Meredith, C.M. Mitchell, M.J. Foster, and S. Keeshin. 2022. Water quality legacies of agriculture, urbanization, and strip mining in the Upper Missouri River Watershed. Geochemical Society & European Association of Geochemistry Goldschmidt Conference, Honolulu, HI.

(47) **Reinhold, A.M.**, R.A. Payn, and S.A. Ewing. Representing Process Domains as Storage-Exchange Biogeochemical Reactors Offers a Path Towards Convergence in Simulating Solute Dynamics. Joint Aquatic Sciences Meeting, Grand Rapids, MI.

(46) Foster, M., R.A. Payn, S.A. Ewing, C.M. Mitchell, and **A.M. Reinhold**. 2022. Linking Diel Solute Signals to Stream Corridor Nitrate Attenuation. Joint Aquatic Sciences Meeting, Grand Rapids, MI.

(45) Foster, M., R.A. Payn, S.A. Ewing, C.M. Mitchell, and **A.M. Reinhold**. 2022. Hydrologic connectivity and instream nitrate uptake mediate the influence of stream corridors on stream nitrate loads and concentrations. Montana Chapter of the American Water Resources Association Annual Meeting, Butte, MT.

(44) Weber, T., C. Lemack, and **A.M. Reinhold**. 2022. Variability in Cyber Security Static Analysis Tool Outputs. NSF REU: Research Experiences in Cybersecurity Algorithms Research Summit. Montana State University, Bozeman, MT.

(43) Mitchell, C.M., S.A. Ewing, **A.M. Reinhold**, T. Koffman, S.I. Keeshin, and R.A. Payn. 2022. Snow as a driver of biogeochemical cycling in the semiarid dryland cereal production systems in the Northern Great Plains, central Montana. Montana Aquatic Research Colloquium. Flathead Lake Biological Station, Polson, MT.

(42) Foster, M., R.A. Payn, S.A. Ewing, C.M. Mitchell, and **A.M. Reinhold**. 2022. Linking diel solute signals to stream corridor nitrate attenuation. Montana Aquatic Research Colloquium. Flathead Lake Biological Station, Polson, MT.

(41) Payn, R.A., **A.M. Reinhold**, S.A. Ewing, and H.M. Valett. 2022. Review of the dimensionality and interpretation of common metrics characterizing rate-limited reactive transport. Montana Aquatic Research Colloquium. Flathead Lake Biological Station, Polson, MT.

(40) Webster, A.J., H.E. Lowman, B.M. Summers, T.K. Harms, X. Dong, **A.M. Reinhold**, J.R. Blaszczak, and N.B. Grimm. 2021. Wildfire impacts to aridland stream chemistry across a hydroclimatic gradient. American Geophysical Union Annual Meeting. New Orleans, LA.

(39) **Reinhold, A.M.**, S.A. Ewing, R.A. Payn, G.C. Poole, and H.M. Valett. 2021. Streams as hydro-biogeochemical bioreactors: Employing Damköhler numbers to identify key reactive transport constraints on water quality. Society for Freshwater Science Annual Meeting, Online. Presentation available: https://youtu.be/HPXpVYD9PO0

(38) Mohr, E.J., G.C. Poole, H.C. Oakland, S.K. Fogg, **A.M. Reinhold**, B.E. Amerson, and S.P. Carlson. 2021. Modeling the influence of hyporheic heterogeneity on stream solute dynamics. Society for Freshwater Science Annual Meeting. Online.

(37) Fogg, S.K., G.C. Poole, S.J. O'Daniel, **A.M. Reinhold**, and B.E. Amerson. 2021. Throwing shade on the hyporheic zone: Effects of floodplain shade on hyporheic temperatures. Society for Freshwater Science Annual Meeting. Online.

(36) Raile, E.D., E.A. Shanahan, R.C. Ready, J. McEvoy, C. Izurieta, **A.M. Reinhold**, G.C. Poole, N. Bergmann, and H. King. 2020. Narrative risk communication as a *lingua franca* for environmental hazard preparation. Fall Research Conference of the Association for Public Policy Analysis and Management. Online.

(35) West, N.M., J.F. Gaskin, E.K. Espeland, **A.M. Reinhold**, and G.C. Poole. 2019. Research updates to the Montana Biocontrol Coordination Working Group. Montana State University, Bozeman, MT.

(34) Fogg, S.K., G.C. Poole, **A.M. Reinhold**, S. O'Daniel, and B. Amerson. 2019. Shading beyond the channel: effects of vegetative shade on hyporheic water temperatures in the broader floodplain. Montana Section of the American Water Resources Association Annual Conference. Red Lodge, MT.

(33) Mohr, E.J., **A.M. Reinhold**, and G.C. Poole. 2019. Simulation and experimental investigation of linked elemental cycling in freshwater ecosystems. Montana Section of the American Water Resources Association Annual Conference. Red Lodge, MT.

(32) West, N.M., J.F. Gaskin, E.K. Espeland, **A.M. Reinhold**, and G.C. Poole. 2019. Plants don't move, but their seeds and insects do. W4185: Biological Control in Pest Management Systems of Plants Annual Meeting. Fort Collins, CO.

(31) West, N.M., **A.M. Reinhold**, G.C. Poole, and E.K. Espeland. 2019. Flood dynamics dictate distributions of invasive trees on a floodplain: a case study of Russian olive. 15th International Conference on Ecology and Management of Alien Plant Invasions. Prague, Czech Republic.

(30) **Reinhold, A.M.**, N.M. West, E.K. Espeland, and G.C. Poole. 2019. Flood dynamics drive the spatial distribution of Russian olive invasions on a riverine floodplain. Society for Freshwater Science Annual Meeting. Salt Lake City, UT.

(29) Mohr, E.J., **A.M. Reinhold**, R. Payn, R. Hall, J. Blaszczak, and G.C. Poole. 2019. An investigation of linked elemental cycles using dual isotope experiments and constraint-based optimization modeling. Society for Freshwater Science Annual Meeting. Salt Lake City, UT.

(28) Fogg, S.K., G.C. Poole, **A.M. Reinhold**, S. O'Daniel, and B. Amerson. 2019. Is shading floodplain sediments important for stream channel temperatures? Society for Freshwater Science Annual Meeting. Salt Lake City, UT.

(27) Poole, G.C., S. O'Daniel, S.K. Fogg, B. Amerson, **A.M. Reinhold**, and S. Carlson. 2019. How to think about hyporheic exchange in gravel bedded rivers (with attention to implications for biogeochemistry). Society for Freshwater Science Annual Meeting. Salt Lake City, UT.

(26) Payn, R., E.J. Mohr, E. Isaksen-Swensen, T. Schlotfeldt, G.C. Poole, **A.M. Reinhold**, M. DeGrandpre, J. Blaszczak, R. Hall, C. Izurieta, and H.M. Vallett. 2019. Development of extensible software to infer ecosystem metabolic rates from multivariate metabolite signals in streams. Society for Freshwater Science Annual Meeting. Salt Lake City, UT.

(25) McEvoy, J., E.A. Shanahan, E.D Raile, N. Bergmann, C. Izurieta, R. Ready, G.C. Poole, **A.M. Reinhold**, and H. King. 2019. How Views of 'Dubious' Science Affect Public Perception of Floodplain Management along the Yellowstone River, Montana, USA. Annual Meeting of the American Association of Geographers. Washington, D.C.

(24) **Reinhold, A.M.**, N.M. West, E.K. Espeland, and G.C. Poole. 2019. Hydrogeomorphology governs the spatial distribution of invasive trees on floodplains. Montana Aquatic Research Colloquium. The University of Montana Flathead Lake Biological Station, Polson, MT.

(23) Mohr, E.J., **A.M. Reinhold**, R.A. Payn, R.O. Hall, J.R. Blaszczak, and G.C. Poole. 2019. An investigation of linked elemental cycles using dual isotope experiments and constraint-based optimization modeling. Montana Aquatic Research Colloquium. The University of Montana Flathead Lake Biological Station, Polson, MT.

(22) Poole, G.C., S. O'Daniel, S.K. Fogg, B. Amerson, **A.M. Reinhold**, and S. Carlson. 2019. How to think about hyporheic exchange. Montana Aquatic Research Colloquium. The University of Montana Flathead Lake Biological Station, Polson, MT.

(21) Poole, G.C., **A.M. Reinhold**, S.K. Fogg, S. O'Daniel, S. Carlson, and B. Amerson. 2018. Automating simulation model generation from conceptualizations of linked elemental cycles in biogeochemical systems: a constraint-based modeling approach. Department of Land Resources and Environmental Sciences, Montana State University. Bozeman, MT.

(20) **Reinhold, A.M.**, G.C. Poole, R.G. Bramblett, A.V. Zale, and D.W. Roberts. 2017. Small flow obstructions implicated in accelerating whole-floodplain side-channel loss. Society for Freshwater Science Annual Meeting. Raleigh, NC.

(19) Poole, G.C., S.K. Fogg, B. Amerson, **A.M. Reinhold**, and S. Carlson. 2017. Hydrologic geometry of the hyporheic zone. Society for Freshwater Science Annual Meeting. Raleigh, NC.

(18) Fogg, S.K., G.C. Poole, S. O'Daniel, and **A.M. Reinhold**. 2017. A comparison of channel shade and hyporheic exchange on seasonal patterns of stream temperature. Society for Freshwater Science Annual Meeting. Raleigh, NC.

(17) Fogg, S.K., G.C. Poole, S. O'Daniel, R. Payn, S. Carlson, **A.M. Reinhold**, and A. Hyman. 2016. When and how dynamic hyporheic temperature mosaics influence channel temperature regimes. Montana Section of the American Water Resources Association Annual Conference. Anaconda, MT.

(16) **Reinhold, A.M.**, G.C. Poole, A.M. Helton, R. Payn, C. Izurieta, and E. Bernhardt. 2016. A constraint-based, compound specific approach to modeling linked biogeochemical cycles. Society for Freshwater Science Annual Meeting. Sacramento, CA.

(15) Fogg, S.K., G.C. Poole, S. O'Daniel, and **A.M. Reinhold**. 2016. A novel approach to simulating hyporheic influences on stream channel temperature. Montana State University Department of Land Resources and Environmental Sciences 2016 Seminar Series. Bozeman, MT.

(14) **Reinhold, A.M.**, G.C. Poole, A.M. Helton, R. Payn, C. Izurieta, E. Bernhardt, and A. Burgin. 2015. Simulating concurrent metabolic pathways in biogeochemical systems. Society for Freshwater Science Annual Meeting. Milwaukee, WI.

(13) Fogg, K., G.C. Poole, S. O'Daniel, **A.M. Reinhold**, R. Payn, S. Carlson, and A. Hyman. 2015. A novel approach to simulating hyporheic influences on stream channel temperature. Society for Freshwater Science Annual Meeting. Milwaukee, WI.

(12) Poole, G.C., B. Amerson, K. Fogg, S. O'Daniel, R. Payn, **A.M. Reinhold**, and C. Izurieta. 2015. Limits of transient storage assumptions for heat: using residence time distribution to estimate mean temperature of hyporheic discharge in montane alluvial streams. Society for Freshwater Science Annual Meeting. Milwaukee, WI.

(11) **Reinhold, A.M.**, R.G. Bramblett, A.V. Zale, G.C. Poole, and D.W. Roberts. 2014. Fish assemblage and habitat differences between side and main channels in the lower Yellowstone River. Joint Aquatic Sciences Meeting. Portland, OR.

(10) **Reinhold, A.M.**, M.B. Duncan, R.G. Bramblett, and A.V. Zale. 2012. Preliminary and potential effects of the 2011 oil spill on the Yellowstone River fish assemblage. Montana Chapter of the American Fisheries Society Annual Conference. Helena, MT.

(9) **Reinhold, A.M.**, R.G. Bramblett, and A.V. Zale. 2011. Importance of seasonally-inundated secondary channels for Yellowstone River fish. Montana Chapter of the American Fisheries Society Annual Conference. Great Falls, MT.

(8) **Reinhold, A.M.**, R.G. Bramblett, and A.V. Zale. 2010. Habitat use of Yellowstone River fish assemblages during runoff. Montana Section of the American Water Resources Association Annual Conference. Helena, MT.

(7) **Scholl, A.M.,** H.A. Stadt, M.R. Hutson, and M.L. Kirby. 2008. Regulation of FGF8 signaling via endocytosis by cardiac neural crest. Gordon Conference on Lysosomes and Endosomes. Andover, NH.

(6) **Scholl, A.M.**, H.A. Stadt, and M.L. Kirby. 2007. Regulation of FGF8 signaling via endocytosis by cardiac neural crest. Cell Biology Annual Departmental Retreat. Asheville, NC.

(5) **Scholl, A.M.**, H.A. Stadt, M.R. Hutson, and M.L. Kirby. 2006. Normal arterial pole development: a fine balance of FGF8 signaling. Cell Biology Annual Departmental Retreat. Wilmington, NC.

(4) **Scholl, A.M.,** A.M. Vajda, and D.O. Norris. 2005. Androgen increases tyrosine hydroxylase immunoreactivity in the preoptic neurons of the brain of the developing tiger salamander, *Ambystoma tigrinum*. Annual meeting of the Colorado-Wyoming Academy of Sciences. Grand Junction, CO.

(3) **Scholl, A.M.,** A.M. Vajda, and D.O. Norris. 2005. Androgen increases tyrosine hydroxylase immunoreactivity in the preoptic neurons of the brain of the developing tiger salamander, *Ambystoma tigrinum*. Society for Integrative and Comparative Biology Annual Meeting. San Diego, CA.

(2) **Scholl, A.M.,** A.M. Vajda, and D.O. Norris. 2004. Androgen increases tyrosine hydroxylase immunoreactivity in the preoptic neurons of the brain of the developing tiger salamander, *Ambystoma tigrinum*. Front Range Neuroscience Annual Meeting. Fort Collins, CO.

(1) **Scholl, A.M.,** A.M. Vajda, and D.O. Norris. 2004. The effects of gonadal steroids on tyrosine hydroxylase immunoreactive neurons in the brain of the developing tiger salamander, *Ambystoma tigrinum*. Honors Symposium for Undergraduate Research at the University of Colorado. Boulder, CO.

CERTIFICATIONS

2019 Diversity Development Certificate (Montana State University)
2010 Motorboat Operator Certification Course (United States Department of the Interior)
2009 Electrofishing Safety Course (Montana Fish, Wildlife, and Parks)
2008 Developmental Biology Training Program (Duke University)

ADDITIONAL PROFESSIONAL TRAINING

2018 Balancing Parenting and Productivity (Montana State University)
2017 Grant Writing Boot Camp (Montana State University)
2017 Introduction to Writing Research Grants (Montana State University)
2016 Classroom Management: Tips for Maintaining a Positive Learning Environment (Montana State University)
2016 Active Learning: Rethinking Your Teaching to Promote Deeper Learning (Montana State University)
2007 Introduction to College Teaching (GS302; Duke University)
2006 Responsible Conduct in Research Retreat (GS310B; Duke University)

PROFESSIONAL MEMBERSHIPS

Institute of Electrical and Electronics Engineers
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PROFESSIONAL REFERENCES

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