Curriculum Vitae
February 2022

Frank D. W. Witmer

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EDUCATION

2007	**Ph.D.**, University of Colorado Boulder, Geography Dissertation: "The Effects of War on Land-Use/Land-Cover Change: An Analysis of Landsat Imagery for Northeast Bosnia"
2003	**M.A.**, University of Colorado Boulder, Geography
1997	**B.S.**, summa cum laude, Tufts University, Mathematics & Computer Science

HONORS AND AWARDS

2010	Robert N. Colwell Memorial Fellowship, American Society of Photogrammetry and Remote Sensing (ASPRS)
2006	Gilbert F. White Doctoral Fellowship in Geography – awarded for advanced student Ph.D. research in the Department of Geography, University of Colorado
2004	International Institute for Applied Systems Analysis (IIASA) Young Scientists Summer Program (YSSP)
2003	TerraSeer Graduate Student Research Contest, SpaceStat software license
2002	Scholarship to attend the Center for Spatially Integrated Social Science (CSISS) Spatial Pattern Analysis Summer Workshop
2001-02	Globalization and Democracy National Science Foundation (NSF) Graduate Training Program Fellowship
1996	Elected to Phi Beta Kappa
1996	Competitive academic Class of 1898 Prize, Tufts University
1994	Dean's Prize, Tufts University
1993-97	Dean's List, Tufts University, all semesters

PROFESSIONAL HISTORY

University of Alaska Anchorage, Anchorage, AK
- Associate Professor – Department of Computer Science & Engineering, 2020–present
- Assistant Professor – Department of Computer Science & Engineering, 2014–2020

University of Colorado, Boulder, CO
- Affiliate – Institute of Behavioral Science, 2014–present
- Research Associate – Analyses of Relationships between Changing Environmental Conditions and Societal Conflict, NSF funded, PI John O'Loughlin, 2013–14

Research Associate and Statistical/Data/GIS Consultant – Computing and Research Services, Institute of Behavioral Science, 2013–14
Research Associate – Climate Change/Variability and Armed Conflicts in Sub-Saharan Africa, NSF funded, PI John O'Loughlin, 2010–12
Research Associate – The Dynamics of Unrecognized Quasi-States: Eurasian Secessionist Regions and the Independence of Kosovo, NSF funded, PI John O'Loughlin, 2008–09
Research Assistant – Point Patterns of Violent Events in the North Caucasus, NSF funded, PI John O'Loughlin, 2007–08
Research Assistant – Human and Social Dynamics NSF grant, 2005–06
For John O'Loughlin on "The Dynamics of Civil War Outcomes in Bosnia and the North Caucasus"
Research Fellow – Globalization and Democracy NSF Graduate Training Program, 2001–02
For John O'Loughlin on post-unification elections in Berlin
Research Assistant – Summer 2002
For Jeremy Mennis on a New Jersey environmental justice air pollutants project

International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, 2004
Researcher –Young Scientists Summer Program (YSSP)
With Michael Obersteiner and Ian McCallum on global deforestation models

RESEARCH INTERESTS

Human-environment geography, with an emphasis on quantifying how human activity (e.g. war, population growth, urbanization) affects environmental conditions (e.g. land use, deforestation, climate) at local and regional scales.
Remote sensing, especially as applied to war, coastal erosion, invasive species detection, and land-use/land-cover change
Immersive visualization of environmental changes at multiple scales using a planetarium dome, virtual reality headsets, video, and desktop platforms.
Development of methods for spatial statistics, GIScience, and remote sensing for analyzing sociodemographic and environmental change data, including the location and diffusion of point events (e.g. violence, crime)

TEACHING EXPERIENCE

University of Alaska Anchorage
Instructor – Introduction to Computer Science, CSCE A101
Fall 2020, Spring 2021
Instructor – Computer Programming I, CSCE A201
Fall 2015, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Fall 2019
Instructor – Data Structures and Algorithms, CSCE A311
Fall 2014, Spring 2020
Instructor – Image Analysis using Google Earth Engine, CSCE A490/A690

Spring 2021
Instructor – Geospatial Programming, CSCE A490/A690
Spring 2018, Spring 2019
Instructor – Python, CS A109
Fall 2017, Spring 2019
Instructor – Google Earth Engine Workshop, Alaska Chapter of the Wildlife Society
Feb 2020
Instructor – Introduction to Geographic Information Systems, GIS A101
Fall 2019, Spring 2020
Instructor – Remote Sensing, GIS A351
Spring 2016
Instructor – Geomatics Computations II, GEO A246
Spring 2015

University of Colorado
Instructor – Spatial Data Analysis Using GeoDa Workshop, Institute of Behavioral Science
Jan 2014
Instructor – GIS Basics Workshop, Institute of Behavioral Science
May 2013
Instructor – Introduction to R Workshop, Institute of Behavioral Science
Jan 2011, Jan 2013
Instructor – Introduction to Geographic Information Science, GEOG 4103/5103
Fall 2007, Spring 2009, Fall 2010
Instructor – Statistics for Earth Sciences, GEOG 3023
Fall 2008, Fall 2009
Instructor – Quantitative Methods in Geography, GEOG 4023/5023
Spring 2008
Instructor – Political Geography, GEOG 4712
Summer 2007
Graduate Part-Time Instructor – Introduction to Geog Information Science, GEOG 4103
Spring, 2007
Graduate Part-Time Instructor – Political Geography, GEOG 4712
Summer 2003, Spring 2004, Fall 2004, Summer 2005
Teaching Assistant – Political Geography, GEOG 4712
For Paul Talbot (Spring 2003) and John O'Loughlin (Fall 2003)
Teaching Assistant – Introduction to Human Geography, GEOG 1992
For Paul Talbot (Fall 2002)

Tufts University
Teaching Assistant – Computer Data Structures
For Alva Couch (Fall 1995, Spring 1996, Fall 1996)

TEACHING INTERESTS

Geospatial Programming (in R, Python/ArcGIS, open source)
Computational Data Structures
Remote Sensing

Geographic Information Science
Quantitative Methods & Spatial Statistics

PEER-REVIEWED PUBLICATIONS

Witmer, F., T. Nawrocki and M. Hahn. "Modeling geographic uncertainty in current and future habitat for potential populations of *Ixodes pacificus* (Acari: Ixodidae) in Alaska." *Journal of Medical Entomology*. https://doi.org/10.1093/jme/tjac001.

Linke, A., F. Witmer and J. O'Loughlin. "Weather variability and conflict forecasts: Dynamic human-environment interactions in Kenya." *Political Geography*. **92**. https://doi.org/10.1016/j.polgeo.2021.102489.

Linke, A., F. Witmer and J. O'Loughlin (2020). "Do people accurately report droughts? Comparison of instrument-measured and national survey data in Kenya." *Climatic Change*. **162**: 1143-1160. https://doi.org/10.1007/s10584-020-02724-3.

Hahn, M., G. Disler, L. Durden, S. Coburn, W. George, F. Witmer, K. Beckmen, R. Gerlach (2020). "Establishing a baseline for tick surveillance in Alaska: Tick collection records from 1909-2019." *Ticks and Tick-Borne Diseases* **11**(5). https://doi.org/10.1016/j.ttbdis.2020.101495.

Nawrocki, T., M. Carlson, J. Osnas, E. Trammell, and F. Witmer (2020). "Regional mapping of species-level continuous foliar cover: Beyond categorical vegetation mapping." *Ecological Applications* **30**(4). https://doi.org/10.1002/eap.2081.

Kupilik, M., F. Witmer, E MacLeod, C. Wang and T. Ravens (2019). "Gaussian process regression for Arctic coastal erosion forecasting." *IEEE Transactions on Geoscience and Remote Sensing* **57**(3):1256-1264. https://doi.org/10.1109/TGRS.2018.2865429.

Linke, A., F. Witmer, J. O'Loughlin, T. McCabe and J. Tir (2018). "The consequences of relocating in response to drought: Human mobility and conflict in contemporary Kenya." *Environmental Research Letters*. **13**(9). https://doi.org/10.1088/1748-9326/aad8cc.

Kupilik, M. and F. Witmer (2018), "Spatio-temporal violent event prediction using Gaussian process regression." *Journal of Computational Social Science* **1**(2):437-451. https://doi.org/10.1007/s42001-018-0024-y.

Linke, A., F. Witmer, J. O'Loughlin, T. McCabe and J. Tir (2018). "Drought, local institutional contexts, and support for violence in Kenya." *Journal of Conflict Resolution* **62**(7):1544-1578.

Holland, E., F. Witmer and J. O'Loughlin (2017). "The decline and shifting geography of violence in Russia's North Caucasus, 2010-2016." *Eurasian Geography and Economics* **58**(6):613-641. https://doi.org/10.1080/15387216.2018.1438905.

Schoen, E. R., Wipfli, M. S., Trammell, E. J., Rinella, D. J., Floyd, A., Grunblatt, J., McCarthy, M., Meyer, B., Morton, J., Powell, J., Prakash, A., Reimer, M. N., Stuefer, S. L., Toniolo, H., Wells, B. and Witmer, F. (2017). **"**Future of Pacific salmon in the face of environmental change: Lessons from one of the world's remaining productive salmon regions." *Fisheries* **42**(10):538–553.

From this article, interactive sliders showing environmental change on the Kenai Peninsula: https://ak-nsf-epscor.github.io/kenai-change/

Williams, P., L. Alessa, J. Abatzoglou, A. Kliskey, F. Witmer, O. Lee, J. Trammell, G. Beaujean and R. Venema (2017)."Community-based observing networks and systems in the Arctic: Human perceptions of environmental change and instrument-derived data." *Regional Environmental Change* **18**(2):547-559. DOI 10.1007/s10113-017-1220-7.

Witmer, F., A. Linke, J. O'Loughlin, A. Gettelman and A. Laing (2017). "Sub-national violent conflict forecasts for sub-Saharan Africa, 2015-2065, using climate-sensitive models." *Journal of Peace Research* **54**(2):175–192.

Linke, A., F. Witmer, E. Holland and J. O'Loughlin (2017). "Mountainous terrain and civil wars: Geospatial analysis of conflict dynamics in the post-Soviet Caucasus." *Annals of the Association of American Geographers* **107**(2):520–535.

Linke, A., T. McCabe, J. O'Loughlin, J. Tir, and F. Witmer (2015). "Rainfall variability and violence in rural Kenya: Investigating the effects of drought and the role of local institutions with survey data." *Global Environmental Change* **34**:35–47.

Witmer, F. (2015). "Remote sensing of violent conflict: Eyes from above." *International Journal of Remote Sensing* **36**(9):2326–2352.

O'Loughlin, J., A. Linke, and F. Witmer (2014). "The effects of temperature and precipitation variability on the risk of violence in sub-Saharan Africa, 1980-2012." *Proceedings of the National Academy of Sciences* **111**(47):16712–16717.

O'Loughlin, J., A. Linke, and F. Witmer (2014). "Modeling and data choices sway conclusions about climate-conflict links." *Proceedings of the National Academy of Sciences*, **111**(6):2054–2055.

O'Loughlin, J., F. Witmer, A. Linke, A. Laing, A Gettelman, and J. Dudhia (2012). "Climate variability and conflict risk in East Africa, 1990-2009." *Proceedings of the National Academy of Sciences* **109**(45): 18344–18349. (Top 1% of cited articles in its field according to Web of Science.)

O'Loughlin, J. and F. Witmer (2012). "The diffusion of violence in the North Caucasus of Russia, 1999–2010." *Environment and Planning A* **44**: 2379–2396.

Linke, A., F. Witmer and J. O'Loughlin (2012). "Space-time Granger analysis of the war in Iraq: A study of coalition and insurgent action-reaction." *International Interactions* **38**(4): 402–425.

O'Loughlin, J., E. Holland and F. Witmer (2011). "The changing geography of violence in Russia's North Caucasus, 1999–2011: Regional trends and local dynamics in Dagestan, Ingushetia and Kabardino-Balkaria." *Eurasian Geography and Economics* **52**(5): 596–630.

Witmer, F. and J. O'Loughlin (2011). "Detecting the effects of wars in the Caucasus regions of Russia and Georgia using radiometrically normalized DMSP-OLS nighttime lights imagery." *GIScience and Remote Sensing* **48**(4):478–500.

O'Loughlin, J. and F. Witmer (2011). "The localized geographies of violence in the North Caucasus of Russia, 1999–2007." *Annals of the Association of American Geographers* **101**(1): 178–201.

O'Loughlin, J., F. Witmer, A. Linke and N. Thorwardson (2010). "Peering into the fog of war: The geography of the WikiLeaks Afghanistan war logs 2004–2009." *Eurasian Geography and Economics* **51(**4): 472–495.

O'Loughlin, J., F. Witmer and A. Linke (2010). "The Afghanistan-Pakistan wars 2008–2009: Micro-geographies, conflict diffusion, and clusters of violence." *Eurasian Geography and Economics* **51(**4): 437–471.

Raleigh, C., F. Witmer and J. O'Loughlin (2009). The Spatial Analysis of War. *Geographic Contributions to International Relations, The International Studies Encyclopedia*, Edited by C. Flint, Blackwell Publishers, Oxford, 6534–6553.

Witmer, F., J. O'Loughlin (2009). "Satellite data methods and application in the evaluation of war outcomes: Abandoned agricultural land in Bosnia-Herzegovina after the 1992–1995 conflict." *Annals of the Association of American Geographers* **99** (5) Special Fifth Issue on Peace and Conflict: 1033–1044.

Witmer, F. (2008). "Detecting war-induced abandoned agricultural land in northeast Bosnia using multispectral, multitemporal Landsat TM imagery." *International Journal of Remote Sensing* **29**(13): 3805–3831.

O'Loughlin, J., A. Panin and F. Witmer (2007). "Population change and migration in Stavropol' Kray: The effects of regional conflict and economic restructuring." *Eurasian Geography and Economics* **48**(2): 249–267.

O'Loughlin, J., F. Witmer, T. Dickinson, N. Thorwardson and E. Holland (2007). "Preface to the Caucasus special issue and map supplement." *Eurasian Geography and Economics* **48**(2): 127–134.

O'Loughlin, J., F. Witmer and V. Ledwith (2002). "Location and political choice in post-unification Berlin: Explaining the PDS (Party of Democratic Socialism) vote, 1999 and 2001." *Eurasian Geography and Economics* **43**(5): 349–382.

NON PEER-REVIEWED WORK

Witmer, F., J. Trammell, J. Grunblatt and O. Smith (2019). "Discovery of environmental change in the Kenai Watershed through immersive visualization" University of Alaska Planetarium and Visualization Theater movie, January 2019.

Witmer, F., J. O'Loughlin and A. Linke (2017). "Forecasting violence in sub-Saharan Africa: What can we learn?" http://www.thebrokeronline.eu/Blogs/Sahel-Watch-a-living-analysis-of-the-conflict-in-Mali/Forecasting-violence-in-sub-Saharan-Africa-What-can-we-learn, *The Broker*, July 2017.

Witmer, F., J. Trammell, J. Grunblatt and O. Smith (2017). "Discovery of environmental change in the Kenai Watershed through immersive visualization" Flat-screen version of the flyover video available on YouTube, https://youtu.be/ZYMJLwnBIxM, April 2017.

Logan, S. and F. Witmer (2012) "Spatial, temporal, and space-time analysis of fatal avalanche accidents in Colorado and the United States, 1991 to 2011." Proceedings of the 2012 International Snow Science Workshop, Anchorage, AK, September 2012: 479-486.

Witmer, F. (2007). The effects of war on land-use/land-cover change: An analysis of Landsat imagery for northeast Bosnia. Ph.D. dissertation. University of Colorado, Boulder, CO.

Witmer, F. (2005). Simulating future global deforestation using geographically explicit models. Interim Report IR-05-010. International Institute for Applied Systems Analysis (IIASA).

Witmer, F. (2003). Economic decline and the natural environment in post-Soviet European Russia: A remote sensing and spatial statistical analysis. Master's thesis. University of Colorado, Boulder, CO.

CURRENT PAPERS IN PROGRESS

GRANTS AWARDED

Alaska Climate Adaption Science Center (CASC, USGS), "Detecting and predicting aquatic invasive species transmission via seaplanes" $199,993, August 2021 – July 2023. PI Schwoerer, T., Co-PI F. Witmer.

Alaska Sea Grant, NOAA, "Climate-Driven Arctic Coastline Modeling: Improving Erosion Forecasts for Communities" $91,517, February 2020 – January 2022. PI Witmer, F., Co-PI M. Kupilik.

Fulbright Outreach Lecturing Fund (OLF) Travel Award. $2,200. Awarded to pay travel expenses for Fulbright Scholar Dr. Syed Anwar from Pakistan, November 2019.

National Science Foundation, "Planning Grant: Engineering Research Center for the Arctic 2050: Preparing for Human Displacement at the Climate Change Frontline" $100,000, September 2018 – August 2020. PI Whitney, E., Co-PIs F. Witmer, M. Darrow, A. Veazey, M. Shirazi.

University of Alaska Anchorage Honors College Undergraduate Research Grant, "Automatic Image Interpretation for Identification of Elodea and Floatplane Entanglement" $1,900, PI Boyle, D., Faculty mentor Witmer, F.

INBRE Faculty Pilot Research Project Request for Proposals, "Understanding the risk of ticks and tick-borne pathogens in Alaska" $124,930, August 2018 – July 2019. PI Hahn, M. and PI Witmer, F.

Conoco Phillips Arctic Science and Engineering award, "Arctic coastal erosion modeling using machine learning and process-based approaches" $175,000, 2016 – 2017. Ravens, T., M. Kupilik, F. Witmer, C. Wang, J. Peng, G. Hailu, and J. Yang.

Alaska EPSCoR Data to Decisions Grant "Discovery of environmental change in the Kenai watershed through immersive visualization" $41,792, October 2015 – May 2016 (J. Grunblatt, J. Trammell and M. Cenek Co-PIs).

University of Alaska Anchorage Faculty Development Grant "Dynamic Bayesian networks for geospatial violence prediction" $9,000, July 2015 – December 2015 (M. Kupilik, Co-PI).

Alaska EPSCoR Seed Grant, "Visualizing networks in 3D using the UAA Planetarium and Visualization Theater" $43,654, June 2015 (M. Cenek, Co-PI).

National Science Foundation, Geography and Spatial Sciences Program, Doctoral Dissertation Research Improvement grant (John O'Loughlin, Co-PI), "The effects of war on land-use/land-cover change: The case of northeast Bosnia" $12,000, June 2006 – July 2007.

PRESENTATIONS

"Conspiracist People or Places? Virus and Secret Cabal Conspiracies in the Post-Soviet Space Prior to Covid-19" J. O'Loughlin, G. Toal*, F. Witmer*, A. Linke, *Association for the Study of Nationalities (ASN) World Convention*. Online, May 2021.

"How important is geography in understanding public opinion? A multi-level analysis of personal characteristics and locational contexts of beliefs in conspiracy theories in 6 post-Soviet countries" J. O'Loughlin*, F. Witmer*, A. Linke. *Annual Meeting of the American Association of Geographers*. Seattle, WA, Online, April 2021.

"Relocating in response to drought: Human mobility and conflict in contemporary Kenya" A. Linke*, F. Witmer, J. O'Loughlin. *Annual Meeting of the American Association of Geographers*. Seattle, WA, Online, April 2021.

"Floods as a natural experiment in shaping support for and experience of violence in Kenya, 2014 and 2018" A. Linke*, J. Tir, F. Witmer*, J. O'Loughlin, J.T McCabe. *Annual Meeting of the American Association of Geographers*. Denver, CO, April 2020. [Meeting canceled due to COVID-19]

"Understanding the risk of ticks and tick-borne pathogens in Alaska" G. Disler, M. Hahn, F. Witmer, K. Carroll, W. George, S. Coburn, R. Gerlach, K. Beckmen. *Alaska INBRE Annual Retreat, Poster Session*, Talkeetna, AK, September 2019.

"Fickle weather effects undermine Kenyan violence forecasts using national survey data" A. Linke*, F. Witmer, J. O'Loughlin. *Annual Meeting of the American Political Science Association*, Washington, DC, August 2019.

"Automatic image interpretation for identification of Elodea and floatplane entanglement" D. Boyle*, F. Witmer, T. Schwoerer. *Undergraduate Research and Discovery Symposium*, UAA, Anchorage, AK, April 2019.

"Deductive habitat modeling for medically-important non-native ticks in Alaska" F. Witmer*, A. Jacuk, M. Hahn. *Annual Meeting of the American Association of Geographers*, Washington, DC, April 2019.

"Salmon and Environmental Change on the Kenai Peninsula" *UAA Planetarium and Visualization Theater 10th Anniversary Event*, Anchorage, AK, January 2019.

"Temporal segmentation of agricultural land use trend in Bosnia using LandTrendr", *Google Earth Engine User Summit*, 2018, Dublin, Ireland, June 2018. https://www.youtube.com/watch?v=EMNtJk7cPC8&list=PLLW-qoCMKQsy0iJY7EcpdAL4b_sHlTisN&index=3.

"The decline in violence in Russia's North Caucasus, 2010-2016" F. Witmer*, E. Holland, J. O'Loughlin. *Oregon State University*, Corvallis, OR, May 2018.

"Predictive coastal erosion modeling via Gaussian process identification" M. Kupilik*, F. Witmer, C. Wang. *OCEANS17 MTS/IEEE*, Anchorage, AK, September 2017.

"Arctic-capable coastal geomorphic change modeling with application to Barter Island, North Slope, Alaska" T. Ravens*, M. Ulmgren, M. Wilber, G. Hailu, E. McLeod , F. Witmer. *OCEANS17 MTS/IEEE*, Anchorage, AK, September 2017.

"Temporal trends in surface water area using the Landsat archive" *UAA Professional Development Seminar*, Anchorage, AK, April 2017.

"Trends in surface water using the Landsat archive: Kenai watershed, Alaska" F. Witmer*, J. Trammell. *Annual Meeting of the American Association of Geographers*, Boston, MA, April 2017.

"Future of Pacific salmon in the face of climate and landscape change: Insights from Kenai River, Alaska" Schoen, E. R.*, Wipfli, M. S., Trammell, E. J., Rinella, D. J., Floyd, A., Grunblatt, J., McCarthy, M., Meyer, B., Morton, J., Powell, J., Prakash, A., Reimer, M. N., Stuefer, S. L., Toniolo, H., Wells, B., Witmer, F. 2017. *Joint Meeting of the American Fisheries Society, Alaska Chapter and American Water Resources Association*. March 2017. Fairbanks, Alaska.

"GIS data in a planetarium dome" *Alaska Arc User Group* invited presentation, University of Alaska Planetarium and Visualization Theater, December 2016.

"Visualization and communication of environmental changes: Kenai Watershed" F. Witmer*, J. Trammell, J. Grunblatt. *Alaska EPSCoR Annual Meeting, Poster Session*, Fairbanks, AK, November 2016.

"Discovery of environmental change in the Kenai Watershed through immersive visualization" F. Witmer*, J. Trammell, J. Grunblatt. *Alaska EPSCoR Annual Meeting*, Fairbanks, AK, November 2016.

"A test of household livelihood shocks and migration as pathways between local environmental change and conflict in Kenya" A. Linke*, J. O'Loughlin, F. Witmer. *International Studies Association*, Atlanta GE, March 2016.

"Mountainous terrain and violent conflict in the post-Soviet Caucasus" F. Witmer*, A. Linke, E. Holland, J. O'Loughlin. *American Geophysical Union*, San Francisco, CA, December 2015.

"Visualizing geographic data in a planetarium dome" *Data to Decisions Visualization Workshop*, Fairbanks, AK, November 2015.

"Data to Decisions: Building capacity across a university system through large scale data visualization for decision support" P. Veazey*, F. Witmer*, D. Broderson*, T. Curry*, M. Cenek. *Gordon Research Conference: Visualization in Science & Education*, Bates College, Lewiston, ME, August 2015.

"Climate-sensitive violent conflict forecasts for sub-Saharan Africa, 2015-2050" F. Witmer*, J. O'Loughlin, A. Linke, A. Laing, A. Gettelman. *Conference on Forecasting and Early Warning of Conflict*, *Peace Research Institute Oslo*, Oslo, Norway, April 2015.

"Alaska EPSCoR Southcentral Testcase Visualization Demonstration" F. Witmer*, J. Anderson*, R. Lew*. *University of Anchorage Alaska Planetarium and Visualization Theater*, Anchorage, AK, February 2015.

"Environmental change and violent conflict in Kenya: Perceived and measured drought effects on sense of personal insecurity and violent beliefs", A. Linke*, J. O'Loughlin, F. Witmer, T. McCabe, J. Tir. *American Geophysical Union*, San Francisco, CA, December 2014.

"Climate change, violence and institutions in Kenya: Evidence from a 2014 national survey", J. O'Loughlin*, T. McCabe*, J. Tir*, A. Linke*, F. Witmer. *Institute of Behavioral Science*, Boulder, CO, October 2014.

"Spatially explicit modeling of human-environment interactions", *Complex Systems Group Brownbag Seminar*, Anchorage, AK, October 2014.

"Climate-sensitive violent conflict modeling and forecasting for sub-Saharan Africa, 1980-2100", *University of Alaska Anchorage*, Anchorage, AK, March 2014.

"Climate sensitive violent conflict predictions for sub-Saharan Africa" F. Witmer*, J. O'Loughlin, A. Linke, A. Laing, A. Gettelman. *Workshop on Geography and Armed Conflict*, Uppsala, Sweden, October 2013.

"Remote Sensing in Conflict Research" *European Network of Conflict Research (ENCoRe)*, Amsterdam, Netherlands, April 2013.

"Violent conflict in sub-Saharan Africa 1980–2009: Natural resources do not significantly raise violence risk" J. O'Loughlin*, A. Linke, F. Witmer, M. DeBoom. *Annual Meeting of the Association of American Geographers*, Los Angeles, CA, April 2013.

"Conflict risk in sub-Saharan Africa increases substantially with high temperatures but drought effects are small, 1980–2009" J. O'Loughlin*, A. Linke, F. Witmer. *International Studies Association*, San Francisco, CA, April 2013.

"Geographic analysis of climate change/variability and violent conflict in East Africa, 1990–2009", *University of Montana*, Missoula, MT, April 2012.

"Using GIS to visualize data and model the effects of climate change/variability on violent conflict in East Africa" *GIS in the Rockies*, Denver, CO, August 2011.

"Climate variability and change in East Africa" A. Laing*, A. Gettelman, F. Witmer , J. Dudhia. *International Association of Hydrological Sciences*, Melbourne, Australia, July 2011.

"Peering into the Fog of War: The Geography of the WikiLeaks Afghanistan War Logs, 2004–2009" J. O'Loughlin*, F. Witmer, A. Linke, *University of Colorado Geography Department Colloquium*, Boulder, CO, September 2010.

"The use of nighttime lights imagery to detect violence in the North Caucasus of Russia" *Annual Meeting of the Association of American Geographers*, Washington, D.C., April 2010.

"Studying human-environment interactions using satellite imagery and GIS: Abandoned land in Bosnia-Herzegovina after the 1992–1995 conflict", *University of Alaska Anchorage*, Anchorage, AK, February 2009.

"Measuring the spatial diffusion of violent events in the North Caucasus of Russia, 1999–2007" J. O'Loughlin*, F. Witmer. *The Spatial and Network Analysis of Conflict*, Champaign, IL, September 2008.

"Satellite data methods and application in the evaluation of war outcomes: Abandoned land in Bosnia-Herzegovina after the 1992–1995 conflict" *Annual Meeting of the Association of American Geographers*, Boston, MA, April 2008.

"Satellite imagery as a tool for evaluating war outcomes: The case of Bosnia and Herzegovina" *University of Colorado Geography Department Colloquium*, Boulder, CO, November 2007.

"The geography of the North Caucasian conflicts, 1999–2006" J. O'Loughlin*, F. Witmer. *Annual Conference of Irish Geographers*, Dublin, May 2007.

"Civil war induced land-cover change in Bosnia: A GIS/remote sensing approach" *Annual Meeting of the American Political Science Association*, Philadelphia, PA, August 2006.

"Detecting land-use/land-cover change in northeast Bosnia using Landsat multispectral imagery" *Annual Meeting of the Association of American Geographers*, Chicago, IL, March 2006.

"Taking 'Geography' seriously: Disaggregating the study of civil wars." J. O'Loughlin*, F. Witmer. *Disaggregating the study of civil war and transnational violence,* La Jolla, CA, March 2005.

"Modeling global deforestation: Past, present and future" *IIASA Midsummer Workshop*, Laxenburg, Austria, July 2004.

"Socioeconomic change and the natural environment in post-Soviet European Russia" *Political Geography Pre-Conference, Annual Meeting of the Association of American Geographers*, Atlantic City, March 2004.

Commentator on Lofdahl, C. "Does trade help or hurt the natural environment: Perspectives from lateral pressure theory." *Responding to Globalization: Societies, Groups, and Individuals*, Boulder, CO, April 2002.

* Denotes presenter for multiple-authored work

NEWS ARTICLES AND PUBLICITY

Green and Gold News, University of Alaska Anchorage, 13 Nov 2018, "Aquarium at the Planetarium" http://greenandgold.uaa.alaska.edu/blog/67614/aquarium-at-the-planetarium/.

Green and Gold News, University of Alaska Anchorage, 1 Nov 2018, "Honors student works on Elodea floatplane project with ISER's Schwoerer and Engineering's Witmer" http://greenandgold.uaa.alaska.edu/blog/67787/honors-student-works-elodea-floatplane-project-isers-schwoerer-engineerings-witmer/.

Green and Gold News, University of Alaska Anchorage, 26 July 2018, "A needle in a haystack: UAA researchers are on the hunt for ticks in Alaska" http://greenandgold.uaa.alaska.edu/blog/65155/needle-haystack-uaa-researchers-hunt-ticks-alaska/.

Alaska Fish & Wildlife News, July 2018, "Ticks the Focus of New Research in Alaska" R. Woodford. http://www.adfg.alaska.gov/index.cfm?adfg=wildlifenews.view_article&articles_id=874.

Witmer featured in the UAA College of Engineering Computer Science and Engineering department brochure, "Seeing is Believing." Spring 2017.

Alaska EPSCoR newsletter, Fall 2016, "See For Yourself: Coordinate, Integration and Synthesis (CIS) Visualizations" p5. https://www.alaska.edu/files/epscor/newsletters/2016-fall-newsletter.pdf.

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ScienceDaily, 10 November 2014. "Conflict risk in sub-Saharan Africa tied to climate change, economics, geography." https://www.sciencedaily.com/releases/2014/11/141110161200.htm.

Boulder Daily Camera, 13 November 2014. "CU-Boulder professor links climate change, sub-Saharan conflict." http://www.dailycamera.com/cu-news/ci_26930889/cu-boulder-professor-links-climate-change-sub-saharan.

IRIN News, 29 October 2012. "Beyond the hype of 'climate wars'." http://www.irinnews.org/news/2012/10/29.

Los Angeles Times, 22 October 2012. "Climate linked to conflict in East Africa, study finds" http://articles.latimes.com/2012/oct/22/science/la-sci-sn-climate-change-linked-to-conflict-in-east-africa-20121022.

MEMBERSHIPS AND SERVICE ACTIVITIES

Member of the editorial board for the journal *GIScience & Remote Sensing*, 2018–present.

Member of the Association of American Geographers (AAG), 2001–present.
Served as a judge for the Remote Sensing and GIS student poster competition, Washington, D.C., April 2010.

Member of the American Society of Photogrammetry and Remote Sensing (ASPRS), 2005–present.

Member of the Alaska Arc User Group (AAUG), 2016–present.

Member of the American Geophysical Union (AGU), 2015–2017.

Journal reviewer for:
Annals of the Association of American Geographers
Applied Geography
British Journal of Interdisciplinary Studies
Civil Wars
Climate and Development
Climatic Change
Conflict Management and Peace Science
Data & Policy
Environmental Research Letters
Eurasian Geography and Economics
GeoJournal
GIScience & Remote Sensing
Global Environmental Change
International Journal of Digital Earth
ISPRS International Journal of Geo-Information
Journal of Conflict Resolution
Journal of Peace Research
Medical Care Research and Review
Nature Climate Change
Political Geography
Population and Environment
The Professional Geographer
Remote Sensing
Remote Sensing Applications: Society and Environment
Remote Sensing of Environment

Sensors
Sustainability
Weather, Climate and Society

Grant proposal reviewer for:
National Geographic Society, Jan 2016
NIH Alaska INBRE Graduate Research Assistantships, Mar 2019

Currently serving on Tommy Folan Master's Thesis committee.

Served on Timm Nawrocki's Master's Thesis committee, "Regional mapping of species-level continuous foliar cover: Beyond categorical vegetation mapping" Spring 2020.

Served on Euan-Angus MacCleod's Master's Thesis committee, "Downscaling of environmental parameters for semi-empirical coastal erosion modeling at Barter Island, Alaska" Summer 2018.

Served on Megumi Aisu's Master's Thesis committee, "Predicting landscape vulnerability to non-native plant establishment in central Alaska" Fall 2017.

Served on Andrew Linke's Master's Thesis committee, "The localized political geography of Somalia's landscapes of violence" Fall 2008.

Supervised independent studies for undergraduate students, Spring 2007, Fall 2007, Spring 2009, Fall 2010, Spring 2017, Summer 2018, Spring 2019.

Graduate computer lab system administrator, Department of Geography, University of Colorado, 2002–2003.

INDUSTRY EXPERIENCE

Charles River Analytics, Cambridge, MA, 2011–2013
Consultant – Constructed agent-based models in Java using Repast Simphony and MASON (Eclipse IDE) to model viral disease contagion and social network responses

Science Applications International Corporation, Burlington, MA, 1997–2001
Software Engineer – Simulate military vehicle movements and visualize interactions on a 2-dimensional terrain map

Automation Engineering Incorporated, Woburn, MA, Spring 1997
Software Engineer – Develop a serial port communication application for a temperature control device

SKILLS

Programming Languages: R, Python, Java, JavaScript, IDL, C++, C#, HTML, Visual Basic, PERL, Fortran

Geographic Software: ENVI, ArcGIS, Google Earth Engine, GeoDa (spatial econometrics and geovisualization), SaTScan (spatial cluster detection), GWR (geographically weighted regression)

Statistical Software: R, Stata, SPSS, SAS, Microsoft Excel