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Appointments

- 2017 **Lecturer**, Department of Geographical Sciences, University of Maryland
- 2013 **Instructor**, Department of Geography, Vancouver Island University
- 2013 **Post-Doctoral Fellow**, Department of Geography, Simon Fraser University

Education

- 2012 **Ph.D. Geography**, University of California, Santa Barbara
- 2009 **M.A. Geography**, University of California, Santa Barbara
- 2000 **B.S. Geography**, University of Minnesota

Publications**Refereed Journal Articles**

- 2018 **Brachman, M. L.** and R.L. Church. Optimizing Safe Routes to School. *Socio-Economic Planning Sciences*. <https://doi.org/10.1016/j.seps.2018.08.003>
- 2018 Roberts, J.D., M. Hu, B. I. Saksvig, **M.L. Brachman**, C.P. Durand. Examining the influence of a new light rail line on the health of a demographically diverse and understudied population within the Washington, DC metropolitan area: A protocol for a natural experiment study. *International Journal of Environmental Research and Public Health*. 15(2):333. <https://doi.org/10.3390/ijerph15020333>
- 2014 **Brachman, M. L.** and S. Dragicevic. A spatially explicit network science model for emergency evacuations in an urban context. *Computers, Environment and Urban Systems*, Volume 44, pages 15-26. <https://doi.org/10.1016/j.compenvurbsys.2013.10.009>

Refereed Conference Proceedings and Short Papers

- 2019 **Brachman, M. L.**, Z. Mostowsky, I. Jonesi. The Geo-Atom for GEOINT: A Network Science Application. *State and Future of GEOINT Report, The United States Geospatial Intelligence Foundation*. (accepted, in press)
- 2010 **Brachman, M. L.** and B. Adams. Theoretical Framework for a Mobile Emergency Decision Support and Routing Application. *Proceedings, 6th International Symposium on Geoinformation for Disaster Management*. Torino, Italy.

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- 2008 Niblett, M. R., **M. L. Brachman**, H. Rapolho, R. Church (eds). *Proceedings, ISOLDE XI: Eleventh International Symposium on Locational Decisions*. Santa Barbara, CA.
- 2008 **Brachman, M. L.** Dynamic Cartogram Visualization of Presidential Election Results. *Proceedings, AutoCarto*. Shepherdstown, WV.

Refereed Conferenced Abstracts

- 2018 **Brachman, M. L.** Optimizing Safe Routes to Schools. *Makeover Montgomery 4*. May 2018, Silver Spring, MD.
- 2018 **Brachman, M. L.** The Geo-Atom for GEOINT. *2018 GEOINT Symposium Lightning Talk*. April 2018, Tampa, FL.
- 2012 **Brachman, M. L.** Modeling the Evacuation Decision. *2nd International Conference on Evacuation Modeling and Management*. August 2012, Evanston, IL.
- 2012 **Brachman, M. L.** Modeling Evacuation Routes: A Wildfire Case Study. *National Evacuation Conference*. February 2012, New Orleans, LA.
- 2011 **Brachman, M. L.** Modeling Evacuation Vulnerability: A Research Framework. *Conference for the International Federation of Operational Research Societies*. July 2011, Melbourne, Australia.
- 2010 **Brachman, M. L.** Modeling Evacuation Vulnerability during a Radiological Emergency. *PTV Vision 11th Annual North American Users Group Meeting*. April 2010, Seattle, WA

Non-refereed Conference Abstracts and Posters

- 2019 Mostowsky, Z, **M. L. Brachman**, I. Jonesi. The Geo-Atom for GEOINT: A Network Science Application. *Association of American Geographers Annual Meeting*. April 2019, Washington, DC.
- 2019 **Brachman, M. L.**, R. Provost, Russell, D. Anspacher. Solving the first mile problem with low-stress bicycling routes. *Association of American Geographers Annual Meeting*. April 2019, Washington, DC.
- 2016 **Brachman, M. L.** Towards a Universal 3D CRS. *100th OGC Technical Committee Meeting*. September 2016, Orlando, FL.

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- 2016 **Brachman, M. L.** GeoPackage Conformance Testing and Extension Development. *100th OGC Technical Committee Meeting*. September 2016, Orlando, FL.
- 2016 **Brachman, M. L.** GeoPackage Elevation Extension Interoperability Experiment. *98th OGC Technical Committee Meeting*. March 2016, Washington, DC.
- 2012 **Brachman, M. L.** Tsunami Evacuation Route Accessibility in Thailand. *Association of American Geographers Annual Meeting*. February 2012, New York, NY.
- 2011 **Brachman, M. L.** Optimizing Safe Routes to Schools. *Association of American Geographers Annual Meeting*. April 2011, Seattle, WA
- 2009 **Brachman, M. L.** Hurricane Katrina: Communication and Transportation Failures. *Association of American Geographers Annual Meeting*. March 2009, Las Vegas, NV.
- 2008 **Brachman, M. L.** Remapping the Presidency: The Impact of Redistricting under the California Presidential Election Reform Act. *Association of American Geographers Annual Meeting*. April 2008, Boston, MA

Technical Reports

- 2016 **Brachman, M. L.** (editor). (2016). OGC GeoPackage Elevation Extension Engineering Report. [OGC 16-094r3]
- 2014 Church, R.L., J. Shynk, **M.L. Brachman**, C. Baez. (2014). First Responder Support Systems Testbed (FiRST): Cross Cutting Cooperative Systems for Emergency Management. Geotrans Laboratory, UCSB, Santa Barbara, CA.
- 2009 **Brachman, M. L.** and R. L. Church. (2009). Planning for disaster: a review of the literature with a focus on transportation related issues (FiRST report), Geotrans Laboratory, UCSB, Santa Barbara, CA.

Published Maps

- 2004 Sperling, J. (2004). *The Great Divide: Retro vs. Metro America*, PoliPoint Press.
- 2002 Orfield, M. (2002). *American Metropolitics: The New Suburban Reality*, Brookings Institution Press

Funding and Awards

2017	Co-Investigator: Purple Line Outcomes on Transportation (PLOT) Study: An Examination of Pre-Purple Line Active Transportation Behaviors and Attitudes among Prince George’s County Residents, <i>University of Maryland College Park Faculty Incentive Program</i>	\$49,902
2012	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2011	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2010	Luce Environmental Science to Solutions Fellowship, <i>California Institute for Hazards Research</i>	\$6,000
2010	Principle Investigator: Evacuation Behavior During the Jesusita Fire, <i>Graduate Research Award for Social Science Surveys, UCSB</i>	\$2,641
2010	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2010	Best Abstract Award, 2010. <i>PTV Vision 11th Annual North American Users Group Meeting</i>	\$2,160
2009	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2008	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2007	Jack and Laura Dangermond Travel Scholarship, <i>UCSB Geography</i>	\$1,000
2000	Best Senior Project. <i>Department of Geography, University of Minnesota, Twin Cities.</i>	

Courses Taught

2019	GEOG 664: GEOINT Systems and Platforms	UMD
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2018	GEOG 661: Fundamentals of GEOINT	UMD
2018	GEOG 170: Introduction to Methods of Geospatial Intelligence and Analysis	UMD
2018	GEOG 680: GEOINT Networks	UMD
2018	GEOG 683: Hazards and Emergency Management	UMD
2018	GEOG 661: Fundamentals of GEOINT	UMD
2018	GEOG 664: GEOINT Systems and Platforms	UMD
2017	GEOG 661: Fundamentals of GEOINT	UMD
2013	GEOG 501: Foundations of GIS	VIU
2013	GEOG 521: General Spatial Analysis	VIU
2010	GEOG 12: Maps and Mapping	UCSB

Community Engagement

Interviews, Panels, and Invited Talks

- 2017 Tactical Urbanism. *Center for Geospatial Information Science Geography Awareness Week Lightning Talks*. November 2017, College Park, MD. (**Invited Talk**)
- 2012 Internships and Work-Based Learning. *Association of American Geographers Annual Meeting*. February 2012, New York, NY. (**Panelist**)
- 2011 Evacuation Lessons from Hurricane Irene. *Miller-McCune Curious and Curiouser Podcast with Jai Ranganathan*. August 2011, Santa Barbara, CA. (**Interview**)
- 2008 Remapping the Presidency: The Impact of Redistricting under the California Presidential Election Reform Act. *The Geography of the Election: A graduate student discussion hosted by spatial@ucsb*. February 2008, Santa Barbara, CA. (**Invited Talk**)

Outreach and Service

- 2018 **Co-Chair**, *Rock Creek Palisades Community Association Traffic Calming Committee, Kensington, MD.*

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- 2011 **Volunteer**, *American Red Cross, Santa Barbara Chapter.*
- 2011 **Guest Lecture**, "From an Image to a Map", *Santa Barbara High School AP Human Geography Class.*
- 2011 **Guest Lecture**, "Human Dimensions of Environmental Hazards." *Geography 3B: Land, Water, and Life, UCSB*
- 2009 **Guest Lecture**, "Electoral Geography." *Geography 5: People, Place, and Environment, UCSB*
- 2008 **Guest Lecture**, "Classical Decision Making for Uncertainty." *Geography 185B: Decision Analysis, UCSB*
- 2008 **Guest Lecture**, "Hurricane Katrina." *Laguna Blanca School, Santa Barbara, CA.*

Professional Memberships

United States Geospatial Intelligence Foundation
American Association of Geographers
National Council for Geographic Education

Professional Experience

- 2015 **Geospatial Scientist**, Strategic Alliance Consulting, Alexandria, VA
- Served as a GIScience and geospatial technology subject matter expert as a contractor supporting the Army Geospatial Center and the National Geospatial Intelligence Agency.
 - Supervised an interdisciplinary team from academia, government, and industry to address significant real-world problems related to geospatial intelligence and security including appropriate use of Coordinate Reference Systems and the development and implementation of geospatial data standards.
 - Developed a custom training program covering intelligence gathering, geospatial analytics, and data architectures for dissemination of GEOINT products to support tactical and strategic objectives.
 - Taught and mentored a diverse group of Pathways student interns
 - Participated on a senior management team overseeing a portfolio of geospatial projects including standards compliance testing, software capabilities development

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and code integration, technical architectures for cross-platform geospatial data dissemination, and development of geospatial requirements.

2014 **Systems Engineer**, Reinventing Geospatial, Fairfax, VA

- Served as a GIScience and geospatial technology subject matter expert as a contractor supporting the Army Geospatial Center.
- Worked with an interdisciplinary team to address significant real-world problems related to geospatial intelligence and security and to support the development of custom geospatial analytic and visualization software.
- Developed a monthly lecture series to bridge the knowledge gap between computer scientists and GEOINT professionals
- Compiled analytical summaries formulated policy recommendations and proposed solutions to geospatial problems related to the Army Geospatial Enterprise.

2000 **GIS Specialist**, Metropolitan Area Research Corporation, Minneapolis, MN

- Produced hard copy and interactive digital map products to describe demographic and land use trends for metropolitan areas and support policy recommendations.
- Collected and analyzed data to support research on US metropolitan areas.