

Wyatt Madden M.S.

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EDUCATION	Montana State University M.S. in Statistics 2017 – 2019
	University of California, Santa Cruz Bachelor of Arts, Economics & Mathematics <i>With Honors</i> Bachelor of Arts, Film & Digital Media <i>With Honors</i> 2011 – 2015
RESEARCH INTERESTS	Bayesian computation, spatio-temporal modeling, probabilistic machine learning & deep learning, data integration, Bayesian nonparametrics, variational inference and sequential Monte Carlo methods. Applications include viral surveillance, disease ecology, epidemiology and quality control.
PUBLICATIONS	<ol style="list-style-type: none">1. D. J. Becker, P. Eby, W. Madden, A. J. Peel, and R. K. Plowright, “Ecological conditions predict the intensity of hendra virus excretion over space and time from bat reservoir hosts,” <i>Ecology Letters</i>, vol. n/a, no. n/a, Full Paper.2. M. S. Y. Lau, A. Becker, W. Madden, L. A. Waller, C. J. E. Metcalf, and B. T. Grenfell, “Comparing and linking machine learning and semi-mechanistic models for the predictability of endemic measles dynamics,” <i>PLOS Computational Biology</i>, vol. 18, no. 9, pp. 1–14, Sep. 2022, Full Paper.3. M. D. Cherne, A. B. Gentry, A. Nemudraia, <i>et al.</i>, “Severe acute respiratory syndrome coronavirus 2 is detected in the gastrointestinal tract of asymptomatic endoscopy patients but is unlikely to pose a significant risk to healthcare personnel,” <i>Gastro Hep Advances</i>, vol. 1, no. 5, pp. 844–852, 2022, Full Paper.4. A. Hoegh, A. Peel, W. Madden, M. Ruiz-Aravena, A. Morris, A. Washburne, and R. Plowright, “Estimating viral prevalence with data fusion for adaptive two-phase pooled sampling,” <i>Ecology and Evolution</i>, vol. 11, Sep. 2021, Full Paper.5. W. Rogers, M. Ruiz-Aravena, D. Hansen, <i>et al.</i>, “High-frequency screening combined with diagnostic testing for control of sars-cov-2 in high-density settings: An economic evaluation of resources allocation for public health benefit,” <i>medRxiv</i>, 2021, Under Review.
INVITED PRESENTATIONS	Compartmental Models: Deterministic & Bayesian Approaches Rocky Mountain Data Science Bozeman, Montana Nov 2020 R Studio in Action - DataFest Montana ASA Chapter Meeting Bozeman, Montana Oct 2018
PROFESSIONAL EXPERIENCE	Bozeman Disease Ecology Lab Statistician Bozeman, MT Jan 2019 – Present <ul style="list-style-type: none">• Researched spatio-temporal data integration techniques for viral surveillance and prediction.• Provided statistics & machine learning consulting for international team of scientists.• Developed R packages to automate routine statistical analysis, visualization, and wrangling.• Designed and implemented SQL database and data pipelines, ensuring data quality and access. Weyerhaeuser Statistics Intern Seattle, WA May 2018 – August 2018 <ul style="list-style-type: none">• Implemented machine learning models aimed at lowering defects in industrial processes, after diagnosing issues through exploratory visualization and analyses.• Formulated mixed-model experimental designs.• Developed Shiny web applications to automate data cleaning/wrangling workflows.

	Accenture Analyst <ul style="list-style-type: none"> Improved loan approval processes through analysis of credit profiles. 	Sacramento, CA <i>Jul 2016 – Apr 2017</i>
CONSULTING & COLLABORATION EXPERIENCE	Collaborator Statistical Consulting And Research Services (SCRS) Department of Mathematical Sciences, Montana State University Volunteer Statistics Without Borders (SWB) Under direction of Dr. Nicole Carnegie, Montana State University	<i>Aug 2018 – Dec 2018</i> <i>Jan 2018 – Apr 2018</i>
TEACHING	Instructor MATH 105 - Contemporary Mathematics Department of Mathematical Sciences, Montana State University	<i>Fall 2017, Spring 2018, Fall 2018</i>
AWARDS	Outstanding Graduate Student Award, Montana State University Excellence in Data Visualization, ASA Data Fest - Montana State University	<i>May 2019</i> <i>Apr 2018</i>
SERVICE	Emory BIOS Student Council, Pre-quals Representative Georgia Statistics Day 2021, Student Volunteer Bozeman Environmental Statistics Group, Member American Statistical Association Student Chapter at Montana State, Treasurer	<i>Spring 2022 – Present</i> <i>October 11th, 2021</i> <i>2019 – 2021</i> <i>2018 – 2019</i>
MEMBERSHIP	American Statistical Association	