

Wyatt Madden M.S.

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Department of Biostatistics & Bioinformatics
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EDUCATION	Emory University PhD in Biostatistics	2021 – Present
	Montana State University MS in Statistics	2017 – 2019
	University of California, Santa Cruz BA, Economics & Mathematics <i>With Honors</i> BA, 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. 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.2. M. D. Cherne, A. B. Gentry, A. Nemudraia, <i>et al.</i>, “SARS-CoV-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>, 2022, Full Paper.3. A. Hoegh, A. Peel, W. Madden, M. Ruiz-Aravena, A. Morris, A. Washburne, and R. Plowright, “Estimating viral prevalence with data integration for adaptive two-phase pooled sampling,” <i>Ecology and evolution</i>, vol. 11, no. 20, pp. 14 012–14 023, Sep. 2021, Full Paper.4. D. J. Becker, P. Eby, W. Madden, A. J. Peel, and R. K. Plowright, “Ecological conditions experienced by bat reservoir hosts predict the intensity of hendra virus excretion over space and time,” <i>bioRxiv</i>, 2021, Under Review.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 – 2021
	<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

Sacramento, CA

Jul 2016 – Apr 2017

- Improved loan approval processes through analysis of credit profiles.

CONSULTING & COLLABORATION EXPERIENCE	Collaborator	<i>Aug 2018 – Dec 2018</i>
	Statistical Consulting And Research Services (SCRS) Department of Mathematical Sciences, Montana State University	
	Volunteer	<i>Jan 2018 – Apr 2018</i>
	Statistics Without Borders (SWB) Under direction of Dr. Nicole Carnegie, Montana State University	
TEACHING	Instructor	<i>Fall 2017, Spring 2018, Fall 2018</i>
	MATH 105 - Contemporary Mathematics Department of Mathematical Sciences, Montana State University	
AWARDS	Outstanding Graduate Student Award, Montana State University	<i>May 2019</i>
	Excellence in Data Visualization, ASA Data Fest - Montana State University	<i>Apr 2018</i>
SERVICE	Emory BIOS Student Council, Pre-quals Representative	<i>Spring 2022 – Present</i>
	Georgia Statistics Day 2021, Student Volunteer	<i>October 11th, 2021</i>
	Bozeman Environmental Statistics Group, Member	<i>2019 – 2021</i>
	American Statistical Association Student Chapter at Montana State, Treasurer	<i>2018 – 2019</i>
MEMBERSHIP	American Statistical Association	