Darren E. Gemoets
Statistician

Research and Development
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Education

2013 **Ph.D. in Statistics**, *University of Wyoming*, Laramie, WY.
Dissertation Summary: Bayesian approaches were employed to fit deterministic models to data. The work consists of the following three distinct results: 1) a novel application of reversible-jump Markov chain Monte Carlo, 2) refinements to partial differential equation based dynamic linear models for spatiotemporal data, and 3) a hierarchical Bayesian model that fit an individual-based deterministic model for tree growth and mortality to ecological data.

1998 **M.S. in Mathematics**, *Montana State University*, Bozeman, MT.

1996 **B.A. in Mathematics**, *Fort Lewis College*, Durango, CO.
Minor: Physics

Work Experience

2019 – **Statistician**, Research and Development,
Albany Stratton Department of Veterans Affairs Medical Center, Albany, NY.
- Serve as in-house statistical expert.
- Collaborate with VA physicians and staff on a wide variety of research projects.
- Resource for utilizing the VA Informatics and Computing Infrastructure.

2018 – 2019 **Visiting Assistant Professor of Biostatistics**, Department of Biostatistics, School of Public Health, West Virginia University, Morgantown, WV.
- Taught a new graduate-level course introducing biomedical students to UNIX, R (Bionconductor, Tidyverse, etc.), and a variety of statistical and machine learning tools.
- Collaborated with researchers in neuroscience and public health.

2016 – 2018 **Assistant Professor of Mathematics**, Department of Mathematics and Computer Science, West Virginia Wesleyan College, Buckhannon, WV.
- Taught 4-5 courses (12-15 credit hours) of undergraduate mathematics and statistics courses each semester.
- Engaged undergraduates in research.
- Organized a well received regional conference for undergraduate researchers.

2013 – 2016 **Assistant Professor of Statistics**, Department of CS, Mathematics and Statistics, Colorado Mesa University, Grand Junction, CO.
- Taught 4-5 courses (12-15 credit hours) of undergraduate statistics courses each semester.
- Served as in-house statistical consultant for faculty colleagues.
- Mentored undergraduates in research projects.

2008 – 2013 **Graduate Research Assistant**, Department of Statistics, University of Wyoming, Laramie, WY.
- Assisted in developing new application of a Bayesian computational statistics algorithm for uncertainty quantification.
- Published resulting article in peer-reviewed journal.

2007 – 2008 **Graduate Teaching Assistant**, Department of Statistics, University of Wyoming, Laramie, WY.

2003 – 2007 **Tenure-track Mathematics Instructor**, Department of Mathematics, Northwest College, Powell, WY.

2001 – 2003 **Adjunct Instructor**, Department of Mathematics, Science and Technology, Schenectady County Community College, Schenectady, NY.

1999 – 2000 **Graduate Teaching Assistant**, Department of Mathematical Sciences, Montana State University, Bozeman, MT.

1998 – 1999 **Independent Contractor - Software Development** , Department of Physics, Montana State University, Bozeman, MT.

1998 – 1999 **Adjunct Instructor**, Department of Mathematical Sciences, Montana State University, Bozeman, MT.

1996 – 1998 **Graduate Teaching Assistant**, Department of Mathematical Sciences, Montana State University, Bozeman, MT.

Publications

(*In preparation*) Sujung, J., Russell, A., **Gemoets, D.**, Brown, C. mi-146a and mi-34a expression in a mouse model of Alzheimer's disease.

(*In preparation*) Sujung, J., Russell, A., **Gemoets, D.**, Huzurbazar, S., Brown, C. Analysis of fecal microbiome in a mouse model for stroke and Alzheimer's disease.

(*In preparation*) **Gemoets, D.** A project-based learning exercise using regression to explore drivers of academic performance. For submission to the Journal of Statistics Education.

(*Accepted*) Sujung, J., Russell, A., Wang, W., Sarkar, S., **Gemoets, D.**, Simpkins, J., Brown, C. miR-146a dysregulates energy metabolism during neuroinflammation. Neuroscience.

Gemoets, D. E., Griffith, D., Humphrey, N., Huzurbazar, S. Bayesian hierarchical modeling to understand thermal diffusivities in firn temperature profiles from Greenland. *Submitted to The Annals of Applied Statistics.*

Hipes, Crosby, **Gemoets, D.** 2018. Stigmatization of War Veterans with Post-traumatic Stress Disorder (PTSD): Stereotyping and Social Distance Findings, Society and Mental Health. DOI: 10.1177/2156869318801889.

Kennard, D., Louden, N, **Gemoets, D.**, Ortega, S., Gonzalez, E., Bean, D., Cunningham, P., Johnson, T., Rosen, K., Stahlke, A. 2016. Tamarix dieback and vegetation patterns following release of the northern tamarisk beetle (*Diorhabda carinulata*) in western Colorado, Biological Control 101: 114-122. DOI: 10.1016/j.biocontrol.2016.07.004.

Gemoets, D. E., Barber, J., and Ogle, K. 2013. Reversible jump MCMC for inference in a deterministic individual–based model of tree growth for studying forest dynamics, Environmetrics 24(7): 433-448. DOI: 10.1002/env.2239.

Technical Skills

Current — R, RStudio, RMarkdown, LaTeX, MSSQL

Previous — C, MATLAB/Octave, Maple/Maxima, Sage Math, Git, SPSS, Doxygen, Sweave/Noweb/Markdown, OpenMP, GNU Tools (GSL, Make, GDB), Valgrind, BUGS, JAGS, Emacs, Python

Knowledgeable — mySQL, noSQL (MongoDB), Jupyter Notebooks, Tableau, Java, JavaScript, Bioconductor

Operating Systems — GNU/Linux, MS, MacOS

Undergraduate Research Projects Advised

○ Andrew Kinkead*. 2018. Assessing web-based interactive homework system effectiveness.

○ Trevor Williams. 2017. Creating R Shiny apps with library usage data.

○ Dan Plaugher*. 2017. Modeling the spread of invasive species using partial differential equations.

○ Jonathon Bach. 2017. Soccer Pythagorean point predictions.

○ Colton Schoelkopf*. 2015. Ranking baseball teams using logistic regression.

○ Kevin Mitchell. 2015. Infield and outfield impacts on winning.

○ Michael Partlow[†][*]. 2015. Predicting fish movement through two selective fish ladders in the Grand Valley, Colorado.

○ Carson Snart[†][*]. 2015. Modeling human password selection.

○ Jacob Edmiston*. 2014. Does defense win championships? Using regression to investigate NFL team strategies.

○ Zachary Adair*. 2014. An example of quantitative analysis in sports: A proposed alternative to the player efficiency rating for determining basketball player value.

○ Laura Johns. 2014. The effects of prior specification on posterior parameter estimates.

(* denotes work presented at undergraduate conference or student showcase.)

(† denotes assisted or co-advised student.)

Select Recent Consulting Experience

○ Greg E. Popovich, Kristy D. Henson, Joshua Olachea. 2017. WV Wesleyan College. Spinal strength and range of motion in adults with scoliosis (poster).

○ Kristy Henson. 2017. WV Wesleyan College. Digitization and replication techniques using skeletal remains to advance osteological analysis (submitted to the American Journal of Physical Anthropology).

○ Aparna Palmer. 2015. Colorado Mesa University. Tardigrade morphology (no product).

○ Eriek Hansen. 2015. Colorado Mesa University. Fish biology (no product).

○ Brenda Holland. 2016. Families Plus in Delta, CO. Multiple baseline designs.

○ Jordge LaFantasie. 2018. WV Wesleyan College. Ecology (ongoing).

Graduate Coursework

○ Spatial Models
○ Bayesian Methods
○ Large Sample Theory
○ Statistical Methods
○ Linear Models
○ Methods of Applied Mathematics
○ Functional Analysis
○ Real and Complex Analysis
○ Abstract Algebra

○ Time Series Models
○ Computational Methods
○ Statistical Inference
○ Distribution Theory
○ Generalized Linear Models
○ Numerical Analysis
○ Dynamical Systems
○ Algebraic and Point-Set Topology

Presentations

○ Teaching elementary statistics students to think like statisticians. West Virginia Mathematics Association of Two-year Colleges, April 22, 2017, Lewisburg, WV.

○ Three projects illustrating modern statistical methods. WVWC Mathematics Colloquium, October 4, 2016, Buckhannon, WV.

○ From pencils through calculators to software: Teaching introductory statistics using Google Sheets. Joint Meeting of the Intermountain and Rocky Mountain Sections of the Mathematical Association of America, April 8-9, 2016, Grand Junction, CO.

○ Kennard, D., N. Louden, **D. Gemoets**, S. Ortega, P. Cunningham, T. Johnson, A. Stahlke, D. Bean, and E. Gonzalez. 2016. Tamarisk mortality and vegetation change following release of the tamarisk leaf beetle (Diorhabda carinulata) in Western Colorado. The Road to Riparian Restoration: Innovations for Working on Public, Private, Tribal Lands in the Arid West. Tamarisk Coalition 13th Annual Conference, February 9-11, 2016, Grand Junction, CO.

- A Bayesian approach to logistic regression. CMU Mathematics Colloquium, April 10, 2015, Grand Junction, CO.
- Report from the United States Conference on Teaching Statistics. CMU Mathematics Colloquium, September 4, 2015, Grand Junction, CO.
- Using R for survey sampling. For the CMU Office of Institutional Research and Assessment, February 26, 2015, Grand Junction, CO.
- A tale of LeBron James, the Eurasian collared dove, and Facebook: A look into the world of modern statistical analysis. CMU Mathematics Colloquium, November 14, 2014, Grand Junction, CO.
- A brief introduction to Bayesian statistical methods. CMU Mathematics Colloquium, October 25, 2013, Grand Junction, CO.
- Reversible Jump MCMC for inference in a deterministic individual-tree-based growth model for studying forest dynamics. University of Wyoming Statistics Seminar Series, November 20, 2009, Laramie, WY.
- Bayesian parameter estimation in partial differential equation models. Joint Statistical Meetings, August 1-6, 2009, Washington, DC.
- Bayesian parameter estimation in partial differential equation models, University of Wyoming Statistics Seminar Series, April 17, 2009, Laramie, WY.
- Using WebCT to supplement the Wyoming Equality Network (Interactive Television), Wyoming Distance Education Consortium, May 24, 2005, Powell, WY.
- Strategies for teaching developmental mathematics online, Wyoming Distance Education Consortium, May 24, 2005, Powell, WY.
- Salary schedules as mathematical systems, Wyoming Mathematics Articulation Conference, February 9, 2005, Laramie, WY.

Professional Development/Conference Travel

- 93rd Annual Meeting of the West Virginia Academy of Science. WV Wesleyan College, April 7, 2018, Buckhannon, WV.
- Mid-Atlantic Undergraduate Research Conference. WV Wesleyan College, March 24, 2018, Buckhannon, WV.
- PME Regional Undergraduate Mathematics Conference. Youngstown State University, February 24, 2018, Youngstown, OH.
- Arthur M. Sackler Colloquia: The Science of Science Communication III. National Academy of Sciences, November 16-17, 2017, Washington, DC.
- Mathematical Association of America Allegheny Section Meeting. Duquesne University, April 7-8, 2017, Pittsburgh, PA.
- Regional Mathematics and Statistics Conference. University of North Carolina-Greensboro, November 11-12, 2017, Greensboro, NC.

- Shenandoah Undergraduate Mathematics and Statistics Conference. James Madison University, September 24th, 2017, Harrisonburg, VA.
- United States Conference on Teaching Statistics. Pennsylvania State University, May 28-30, 2015, State College, PA.
- Joint Statistical Meetings. August 1-6, 2009, Washington, DC.
- Institute for Mathematics Applied to Geosciences. National Center for Atmospheric Research, June 22-25, 2009, Boulder, CO.
- Sixth International Conference on Extreme Value Analysis. Colorado State University, June 25, 2009, Fort Collins, CO.
- Phi Theta Kappa 89th Annual International Convention. Gaylord Opryland, April 12-14, 2007, Nashville, TN.

Synergistic Activities

Mid-Atlantic Undergrad. Research Conference, Planning Committee	*Spring 2018*
Co-Director of Honors Program	*Fall 2017 - Spring 2018*
Retention Committee	*Fall 2016 - Spring 2018*
Statistics Textbook Selection Committee (Chair)	*Fall 2015 - Spring 2016*
Faculty Senate Library Advisory Committee (Secretary)	*Fall 2015 - Spring 2016*
Scholarship Committee	*Spring 2014 - Spring 2016*
Mathematics Program Revision Committee	*Spring 2015 - Spring 2016*
Tenure-track Mathematics Faculty Search Committee	*Fall 2014 - Spring 2015*
Quantitative Literacy Task Force Committee	*Spring 2015*
Mathematics Program Review Committee	*Spring 2014 - Spring 2015*
Advisor for Phi Theta Kappa	*Fall 2006 - Spring 2007*
Regional Director, WY High School Mathematics Contest	*Fall 2005 - Spring 2007*
Faculty Salary Specialist, Faculty Senate	*Fall 2005 - Spring 2007*
Faculty Welfare and Development Committee	*Fall 2004 - Spring 2007*

Memberships, Grants, Awards, and Miscellanea

- US Citizen that is registered with the Selective Service System.
- Awarded 2017 WVWC Title III Course Development Grant, $3000.
- Awarded 2014-2015 Colorado Mesa University Faculty Development Grant, $880.
- Member, Kappa Mu Epsilon, Pi Mu Epsilon Mathematics Honor Societies.
- Member, American Statistical Association.

- Serve(d) as reviewer for North American Journal of Fisheries Management, Journal of Applied Statistics and Journal of Modern Applied Statistical Methods.
- Mathematical Association of America outstanding senior award at Fort Lewis College, 1996.
- President, CO Gamma Chapter of Kappa Mu Epsilon, Fall 1995-Spring 1996.
- Passed Course 1 Actuarial Exam.