

Gordon R. Bower

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Education:

M.S. Statistics, University of Alaska Fairbanks, 1998.

B.S. Geology, B.S. Mathematics, University of Alaska Fairbanks, 1997, magna cum laude. Barry Goldwater scholar 1995, National Merit Scholar 1993.

Present position:

Statistics consultant, Excelsior Statistics and Optimization, Fortine, MT.

Experimental design and data analysis support for clients all over North America.

Specializing in mathematical modeling of natural processes and exact maximum likelihood estimation.

Experience includes logistic and Poisson regression; nonparametric methods; principal components analysis; multi-way ANOVA; Bayesian Gamma-Poisson models for rare events and equipment unreliability.

Research experience:

Statistician, Idaho National Laboratory, Idaho Falls, ID (2011—2017)

Supported a wide range of research efforts in the energy industry, including the following:

Modeling the reliability of emergency equipment at nuclear power plants, including modeling seasonal variation, trends over time, and variation among similar plants.

Comparing the speed, accuracy, and situational awareness of operators in a simulated industrial process, across different user interfaces and different levels of automation

Estimating the dimensional change of irradiated fuel that could not be directly observed

Analyzing the driving habits of electric vehicle owners, and describing changes in vehicle efficiency as a function of geography and climate

Designing experiments to estimate the yield and quality of biofuels feedstocks

Taught mini-courses about statistical methodology to colleagues

Research Associate, Office of Planning, Analysis, and Institutional Research, University of Alaska Fairbanks (2007—2011)

Student-success research, following the college careers of students existing the developmental mathematics program, including making recommendations for changes to prerequisites

Presented results of research at 2-3 regional and national conferences per year.

Data analysis in support of accreditation renewal efforts

SAS and Oracle SQL programming, including creating software to automate the process of responding to annual surveys and reports

Research Analyst, Alaska Mental Health Board / Advisory Board on Alcoholism and Drug Abuse, Juneau AK (2005—2006)

Analyzed and interpreted data from statewide surveys of mental health providers and patients

Conducted literature searches for national data on prevalence of conditions and effectiveness of treatment and wrote reports comparing these to Alaska-specific data

Research Technician, International Arctic Research Center, Fairbanks AK (2000—2005)

Operated a Finnigan MAT252 stable isotope mass spectrometer: inventory, preparation, and analysis of water samples; fieldwork to collect samples of ice, water, and snow; designing and conducting experiments to improve quality of analytical methods.

Computer programming and debugging, statistical consulting, and technical writing assistance for colleagues

Seismic Data Specialist, Alaska Volcano Observatory, Fairbanks AK (1998—2000)

Responsible for routine earthquake epicenter and magnitude determination and monitoring volcanoes for signs of unrest. Participated in 24-hour response to volcanic eruptions and large earthquakes.

Contributed to the development of automated monitoring methods, particularly automatic discrimination between volcanic tremor, environmental noise, and tectonic earthquakes.

Volunteer thermal observer, Yellowstone National Park (1992—present)

Observed and recorded geyser eruptions; compiled and analyzed the resulting data, and disseminated findings through published articles, oral presentations, and informal notes and newsletters.

Teaching experience:

Adjunct Lecturer in Statistics, University of Alaska Fairbanks (Spring and Fall 2008)

Taught 3-credit statistics courses. Responsible for preparing and delivering lectures, creating my own syllabus, grading all tests and homework, holding regular office hours.

Teacher and tournament director, TaigaBridge (2002—present)

Taught beginning and advanced bridge lessons for the Farthest North Bridge Club (Fairbanks, AK, 1995—2005); Osher Lifelong Learning Institute (2002—2004); Idaho Falls Unit 396 (2011—2015); and private clients, both face-to-face and via internet delivery.

Prepared extensive teaching material, and published a weekly bridge column on the web

As a tournament director ensured the smooth flow of the game, including resolving disputes among contestants during the play, tabulating and posting scores, and developing and modifying tournament formats as needed to suit varying attendance

Teaching Assistant, Department of Mathematical Sciences, University of Alaska Fairbanks (1997—1998)

Tutor, Associated Students of UAF (1993—1994), Student Support Services Project (1994-1997), Department of Mathematical Sciences math lab (1997—1998), and by private appointment (1998—present)

References and copies of recent publications available upon request.