

H. JUSTIN MOHLER
President, Bridger Scientific, Inc.

Education

M.S., Environmental Health Physics, Colorado State University, Fort Collins, Colorado, 1997
B.S., Biology, Southwest Missouri State, Springfield, Missouri, 1993

Professional Experience

Scientific Consultant

(January 1997–present)

Analyzing spatial and temporal trends of plutonium distribution in soil and investigating the potential impacts of burrowing animals on plutonium dispersal at U.S. Department of Energy and Colorado Department of Public Health and Environment sites.

Providing environmental monitoring assessment services for dose reconstruction projects. Working with *Risk Assessment Corporation (RAC)* to conduct studies for the Centers for Disease Control and Prevention and the Colorado Department of Public Health and Environment. These studies focus on historical releases of radioactive and nonradioactive materials and estimating potential risk to surrounding populations.

For the Savannah River Site Dose Reconstruction Project, summarizing environmental monitoring data and evaluating its usefulness for direct exposure assessment and source term model validation. Evaluating temporal and spatial trends in radionuclide concentrations measured for fish, wild game, and vegetation. Assessing mercury concentrations in several environmental media and estimating uranium and plutonium atmospheric releases and associated uncertainty. Maintaining and utilizing a fully relational database containing data for more than 9000 historical documents identified during Phase I of the dose reconstruction project. Developing and producing an electronic report on CD, including reference and glossary hyperlinks as well as embedded and linked spreadsheets.

For Task Order 5, screening and prioritizing historical radionuclide releases from the Idaho National Environmental and Engineering Laboratory. Reconstructing and calculating source term or release estimates for various episodic release events, including reactor operations and accidents as well as fuel element burning tests. Evaluating downwind dispersion and potential exposure by pathway for each event. For Task Order 6, managing and coordinating the review of historical documents to identify information that may be useful for completing a future detailed dose reconstruction. Maintaining and developing a fully relational database to store information for identified useful documents.

Working with *RAC* to conduct three technical audits focused on assessing the Los Alamos National Laboratory's compliance with the Clean Air Act. Evaluating the accuracy and completeness of radionuclide usage at Site facilities and reviewing various other components of the compliance program. Responsible for interviewing laboratory personnel, working with interested members of the public, and assessing the methodology in place during 1996, 1999, and 2001 for its adequacy in demonstrating compliance with the Clean Air Act.

Assisting *RAC* to assess the appropriateness of soil action levels or cleanup criteria developed by the Department of Energy, Environmental Protection Agency, and Colorado Department of Public Health and Environment for the Rocky Flats Environmental Technology Site. Evaluating distributions and assessing uncertainty and sensitivity for the parameters used in a dose calculation model.

Working with *RAC* to assess exposure and risk through both the air and surface water pathways as a result of the Cerro Grande Fire at the Los Alamos National Laboratory. Managing the collection and compilation of all relevant environmental monitoring data, as well as data available for source term characterization of contaminated sites impacted by the fire. Leading Task 3, which documented observations and recommendations resulting from the process of completing this risk assessment.

Currently, assisting *RAC* to develop an independent and comprehensive risk assessment process to guide the management of risk from both chemical and radionuclide sources at LANL in an understandable, consistent, and transparent manner. Leading data identification and management activities, as well as development of web- and pc-based applications designed to enable automated, timely, and effective use of large quantities of environmental measurement data, ranging from basic data analysis to complex risk calculations.

For all of the above projects, presenting technical material to various panels and committees and interested members of the public. Working with the public and Site personnel to obtain data and understand issues of concern.

Colorado State University

Research Associate, Fort Collins, Colorado (September 1996–January 1997)

Performed gamma spectra analyses of Rocky Flats Plant soil samples. Operated and calibrated HPGe and Ge(Li) detector and conducted spectral analysis and interpretation using Acuspec®, Peakfit®, Minitab®, and various spreadsheet applications.

Laboratory Technician (September 1993–May 1994)

Involved with environmental sampling. Collected and prepared soil samples from the U.S. Department of Energy's Rocky Flats Environmental Technology Site for actinide analysis.

Additional Experience

Courses

Microsoft Access advanced programming course for application developers (summer 1999)

Enhanced understanding of the data modeling requirements for developing a relational database. Focused on the programming necessary for custom database design as well as the fundamental structural elements of a relational database.

Research

U.S. Department of Energy's Par Pond Radioecology Laboratory
Savannah River Site, Aiken, South Carolina (summer 1994)

Conducted M.S. thesis research, which focussed on evaluating temporal trends of ^{137}Cs in an aquatic system. Also involved the development of a multi-compartment model to predict the distribution of ^{137}Cs in various ecosystem compartments.

U.S. Department of Energy Health Physics Fellow

Idaho National Engineering Laboratory, Idaho Falls, Idaho (summer 1996)

Analyzed the effects of building downwash for facility regulatory compliance using current air dispersion codes (ISC3) and computer (PC/workstation) software (Surfer® and GIS ARC/INFO®).

Honors

U.S. Department of Energy Applied Health Physics Fellowship, 1994–1996

Burton J. Moyer Memorial Fellowship, 1994–1995

Colorado Graduate Fellowship, 1994–1995

Southwest Missouri State University Scholar (undergraduate academic scholarship)

Graduated Magna Cum Laude in the Honors College

Member in Phi Eta Sigma (honor society)

Peer-Reviewed Publications

Mohler, H.J., F.Ward Whicker, and T.G. Hinton. 1997. "Temporal Trends of ^{137}Cs in an Abandoned Reactor Cooling Reservoir". *Journal of Environmental Radioactivity* 37 (3): 251-268.

Till, J.E., A.S. Rood, P.G. Voillequé, P.D. McGavran, K.R. Meyer, H.A. Grogan, W.K. Sinclari, J.W. Aanenson, H.R. Meyer, **H.J. Mohler**, S.K. Rope, and M.J. Case. 2002. "Risks to the Public from Historical Releases of Radionuclides and Chemicals at the Rocky Flats Environmental Technology Site." *Journal of Exposure Analysis and Environmental Epidemiology* 12: 355-372.

Mohler, H.J., K.R. Meyer, H.A. Grogan, J.W. Aanenson, and J.E. Till. 2004. Application of NCRP Air Screening Factors for Evaluating both Routine and Episodic Radionuclide Releases to the Atmosphere. *Health Physics* 86(2):135-144.

Mohler, H.J., J.W. Aanenson, T.B. Kirchner, H.A. Grogan, J.E. Till. 2007. RACER: Dynamic Use of Environmental Measurement Data for Decision-Making and Communication. Submitted to *Risk Analysis*.

Technical Reports

Whicker, F.W., T.E. Hakonson, and **J. Mohler**. 1997. "Environmental Plutonium at Hanford: A Review of Literature and Monitoring Data." Prepared for Kirkland and Ellis, 200 East

Randolph Drive, Chicago, IL 60601. May.

Grogan, H.A., P.D. McGavran, H.R. Meyer, K.R. Meyer, **H.J. Mohler**, A.S. Rood, W.K. Sinclair, P.G. Voillequé and J.M. Weber. 1999. *Technical Summary Report for the Historical Public Exposures Studies for Rocky Flats Phase II*. RAC Report No. 14-CDPHE-RFP-1999-FINAL. *Radiological Assessments Corporation*. Neeses, South Carolina. September.

Weber J.M., S.J. Maheras, **H.J. Mohler**, P.G. Voillequé, and J.E. Till. 1999. *Independent Audit of Los Alamos National Laboratory for Compliance with the Clean Air Act, 40 CFR 61, Subpart H*. RAC Report No. 3-DOJ-LANL Audit-1998-Final. *Risk Assessment Corporation*, Neeses, South Carolina. November.

Aanenson, J.W., **H.J. Mohler**, P.G. Voillequé, S.J. Maheras, A.S. Rood, H.A. Grogan, and J.E. Till. 2000. *Independent Technical Audit of Los Alamos National Laboratory for Compliance with the Clean Air Act, 40 CFR 61, Subpart H in 1999*. RAC Report No. 4-DOJ-LANL Audit-2000-Final. *Risk Assessment Corporation*, Neeses, South Carolina. November.

Aanenson, J.W., Boelter, P.J., M.J. Case, M. Dreicer, H.A. Grogan, M.O. Langan, P.D. McGavran, K.R. Meyer, R. Meyer, **H.J. Mohler**, A.S. Rood, R.C. Rope, S.K. Rope, L.A. Stetar, J.E. Till, P.G. Voillequé, T.F. Winsor, W. Yang. 2001. *Evaluation of Materials Released from the Savannah River Site. Savannah River Site Environmental Dose Reconstruction Project. Phase II: Source Term Calculation and Ingestion Pathway Data Retrieval*. RAC Report No.1-CDC-SRS-1999-Final. April 30. *Risk Assessment Corporation*.

Mohler, H.J., K.R. Meyer, J.W. Aanenson, H.A. Grogan, and J.E. Till. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Task 3: Calculating and Communicating Risks: Observations and Recommendations*. RAC Report No.15-NMED-2001-FINAL(Rev.1). *Risk Assessment Corporation*, Neeses, South Carolina. June 12.

Rocco, J.R., K.R. Meyer, **H.J. Mohler**, J.W. Aanenson, L. Hay Wilson, A.S. Rood, P.D. McGavran, and J.E. Till. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Task 2.7: Estimated Risks from Releases to Surface Water*. Final Report, RAC Report No.4-NMED-2002-FINAL(Rev.1). *Risk Assessment Corporation*, Neeses, South Carolina. June 12.

Rood, A.S., J.W. Aanenson, S.S. Mohler, P.D. McGavran, **H.J. Mohler**, H.A. Grogan, and J.E. Till. 2002. *Analysis of Exposure and Risks to the Public from Radionuclides and Chemicals Released by the Cerro Grande Fire at Los Alamos. Task 1.7: Final Report on Estimated Risks from Releases to Air*. RAC Report No. 3-NMED-2002-FINAL(Rev.1). June 12.

Aanenson, J.W., H.A. Grogan, S.J. Maheras, **H.J. Mohler**, A.S. Rood, P.G. Voillequé, J.E. Till. 2002. *Independent Technical Audit of Los Alamos National Laboratory for Compliance with the Clean Air Act, 40 CFR 61, Subpart H in 2001*. RAC Report No. 6-DOJ-LANL Audit-2002-FINAL. Risk Assessment Corporation, Neeses, South Carolina. October.

K.R. Meyer, **H.J. Mohler**, J.W. Aanenson, and J.E. Till. 2002. *Identification and Prioritization of Radionuclide Releases from the Idaho National Engineering and Environmental Laboratory*. Task Order 5-Center for Disease Control and Prevention. RAC Report No. 3-CDC Task Order 5-2000-FINAL. Risk Assessment Corporation, Neeses, South Carolina. October 8.

Aanenson, J.W., J. Goldberg, H.A. Grogan, L. Hay Wilson, G.G. Killough, K.R. Meyer, **H.J. Mohler**, S. Mohler, J.R. Rocco, A.S. Rood, P. Shanahan, W.K. Sinclair, C. Slack, E.A. Stetar, P.G. Voillequé, J. Wilson, and J.E. Till. 2004. *Risk Analysis, Communication, Evaluation, and Reduction at LANL. Contemporary Risk Assessment: Demonstration of an Integrated Methodology*. RAC Report No. 11-RACER LANL-2004-DRAFT. July.

Hay Wilson, L., J.R. Rocco, S.S. Mohler, and **H.J. Mohler**. 2005. *Decision Support Tool Methodology*. RAC Report No. 18-RACER LANL-2005-DRAFT. Risk Assessment Corporation, Neeses, SC. November.

Other Papers

Mohler, H. Justin, Jill Weber Aanenson, Helen Grogan, and John Till. 2005. "Creating Spatially-Linked Data and Risk Evaluation Tools to Support Community Participation and Decision Making for a Contaminated Site." Presented at 19th International Conference on Informatics for Environmental Protection, Brno, Czech Republic, September 7-9.

H.A. Grogan, J.W. Aanenson, P.D. McGavran, K.R. Meyer, S.S. Mohler, **H. J. Mohler**, J.R. Rocco, A.S. Rood, J.E. Till and L.H. Wilson. 2006 "Applied Modeling of the Cerro Grande Fire at Los Alamos: An Independent Analysis of Exposure, Health Risk, and Communication with the Public." In *Applied Modeling and Computations in Nuclear Science*. ACS Symposium Series 945. Edited by T.M. Semkow, S. Pommé, S.M. Jerome, and D.J. Strome. American Chemical Society, Washington, DC.