

George Bieberbach Jr

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Aeris LLC
1314 Main Street, Suite 101, Louisville, CO, USA 80027
gbieber@aerisllc.com
720-370-9012 Ext-2

EDUCATION

- 1999 **M.S.**, Meteorology, Department of Meteorology, Florida State University, Tallahassee, FL.
Advisor: Henry Fuelberg, Professor.
- 1995 **B.S.**, Engineering and Environmental Science, Department of Civil Engineering, University of Notre Dame, Notre Dame, IN.

OVERVIEW OF EXPERIENCE

Aeris LLC

2015 - Present

Managing Partner, Scientist, Facility Security Officer

Co-founded a small atmospheric science and engineering consulting firm, Aeris LLC, based in Louisville, CO and currently serving as one of three managing partners. In tandem with the other two managing partners, responsible for the overall management and operation of the business, including business development, marketing, contract development/execution, and facility/personnel security.

Science and Technology in Atmospheric Research (STAR) LLC

2010 - 2015

Project Scientist

Provided both project management and technical support to a variety of Research and Development (R&D) efforts, funded by agencies within the U.S. Department of Defense (DoD) and Intelligence Community (IC). These efforts generally involved the implementation, optimization, and operation of numerical weather prediction (NWP) modeling systems, such as the Weather Research and Forecast (WRF) model, to provide both high resolution regional short term forecast and local scale historical reanalysis products (and associated climatologies) for particular locations of interest. Specific responsibilities included project budget/contract monitoring/reporting, project resource management, technical progress reporting, technical advice/assistance, mentoring/supervision of project staff, and customer communications.

Science and Technology in Atmospheric Research (STAR) Institute

2006 - 2013

Project Scientist

Provided both project management and technical support on a variety of DoD funded projects, related to atmospheric transport and dispersion (AT&D). Relevant projects included development of a Contamination Avoidance System Performance Model (CA SPM), which will support the Virtual Test and Evaluation (VT&E) of new and emerging CA sensor platforms; field deployment/operation of meteorological observation networks in support of several atmospheric transport and dispersion related field experiments; and, lastly, providing limited technical advise/support to the development and maintenance of a facility protection system, which utilizes a combination of atmospheric instrumentation and numerical models to provide a Chemical, Biological, and Radiological (CBR) atmospheric release early warning capability.

National Center for Atmospheric Research (NCAR)

2013 – 2015

Associate Scientist IV

Provided both project management and technical support to a variety of Research and Development (R&D) efforts, funded by agencies within the DoD. Duties include providing technical and management oversight of a team consisting of five junior level scientists/engineers; development of project technical direction, schedules, and milestones; monitoring progress of project tasks, deliverables, and budgets; presentation of project related topics at technical conferences and program reviews; interaction and communication with the project sponsors; and development of project technical reports.

National Center for Atmospheric Research (NCAR)

2004 – 2013

Associate Scientist III

Provided both project management and technical support to a variety of Research and Development (R&D) efforts, funded by agencies within the DoD. Particular efforts included VT&E of emerging CB standoff detector technologies, development and deployment of an operational Meteorological Data Server (MDS) system, which provides customized observational and forecasted meteorological products to various DoD Chemical Biological Radiological Nuclear (CBRN) Consequence Assessment modeling tools, and analysis of the effectiveness of aerosol LIDARs for detecting and characterizing biological attacks.

Northrop Grumman Information Technology (NGIT)

2000 – 2004

Physicist II (2003 – 2004)

Provided on-site technical, programmatic, and operational support to DTRA as part of the Northrop Grumman Advisory & Assistance Support (A&AS) contract. Primary responsibility was to serve as the lead A&AS representative to the DTRA Transport and Dispersion (T&D) Modeling Program Manager. Associated duties included investigations of emerging T&D modeling techniques to enhance DTRA's CBRN modeling capabilities, program plan development, program budget

analysis, acquisition guidance, program coordination between participating organizations (both national and international), and operational CA modeling support.

Physicist I (2000 – 2003)

Served as the lead A&AS representative to the DTRA Meteorology Program Management Team, while also serving as one of two on-site operational consequence assessment analysts. Associated duties included the operation of the agency's on-site NWP modeling capability, management of associated research and development activities, operational consequence assessment modeling support, and advanced HPAC training support.

Research & Data Systems Corporation

1999 – 2000

Scientific Programmer

Provided on-site programming support to the National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite, Data and Information Service (NESDIS), involving software testing of various operational satellite software systems for Y2K compliance.

National Aeronautics and Space Administration (NASA)

1999 - 1999

Student Field Observer

Supported Radiosonde launch operations during the NASA Kwajalein Experiment (KWAJEX)

HONORS AND AWARDS

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| 2002 | Letter of Appreciation , DTRA HPAC Simulation Support, Lt Col Eric J McKinley, Director of Air and Space Science, USAF |
| 2001 | Letter of Appreciation , DTRA HPAC Training Support, R.P. Garrett, Commanding Officer of the US Naval European Meteorology and Oceanography Center |
| 2000 | Letter of Appreciation , DTRA HPAC Training Support, Capt T.E. Bosse, Commanding Officer of the US Naval Atlantic Meteorology and Oceanography Center |

COMPETITIVE GRANTS/CONTRACTS

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| 2013 - Present | Principal Investigator , Joint Effects Model (JEM) Increment 2 Development, General Dynamics Information Technology (GDIT) |
| 2012 - 2015 | Principal Investigator , High Resolution Climate Reanalysis, U.S. IC |
| 2006 - 2015 | Co-Investigator , Sensor Data Fusion, Defense Threat Reduction Agency |
| 2009 - 2013 | Co-Investigator , Contamination Avoidance System Performance Model, Defense Threat Reduction Agency |
| 2010 – 2012 | Principal Investigator , A Site Specific Risk Assessment (SSRA) for the National Bio and Agro-Defense Facility (NBAF), Department of Homeland Security (DHS) |
| 2005 - 2009 | Principal Investigator , Next Generation Meteorological Data Server, Defense Threat Reduction Agency. |
| 2004 - 2005 | Principal Investigator , Determining the Effectiveness of Aerosol LIDAR for Biological Attack Characterization and Verification, Department of Homeland Security |

PUBLICATIONS

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| 2016 | Meir, T, J. Pullen, A.F. Blumberg, T. Holt, P.E. Bieringer, G. Bieberbach , 2016: Simulation of Airborne Transport and Dispersion for Urban Waterside Releases, <i>J. Appl. Meteor. Climatol.</i> , 56 ,

Nelson, M.A., M.J. Brown, S.A. Halverson, P.E. Bieringer, A.J. Annunzio, G. Bieberbach , 2016: Assimilation of WRF Meso-Scale Meteorological Simulations into the QUIC Atmospheric Dispersion Modeling System. Part 1: Wind and Turbulence. <i>Bound-Lay. Meteorol.</i> , 158 , Issue 2, 285-309.

Nelson, M.A., M.J. Brown, S.A. Halverson, P.E. Bieringer, A.J. Annunzio, G. Bieberbach , 2016: A Case Study of the Weather Research and Forecasting Model Applied to the Joint Urban 2003 Tracer Field Experiment. Part 2: Contaminant Dispersion. <i>Bound-Lay. Meteorol.</i> , 161 , Issue3, 461-490. |
| 2013 | Bieringer, P.E., S. Longmore, G. Bieberbach , L.M. Rodriguez, J. Copeland, and J. Hannan, 2013: A method for targeting air samplers for facility monitoring in an urban environment, <i>Atmospheric Environment</i> , 80 , 1-12 |

- 2012 Platt, N., D. DeRiggi, S. Warner, P. Bieringer, **G. Bieberbach**, A. Wyszogrodzki and J. Weil, 2012: Method for comparison of large eddy simulation generated wind fluctuations with short-range observations, *Int. J. Environment and Pollution*, **48**, No. 1/2/3/4, 22–30.
- Bieberbach, G.**, P. Bieringer, S. Longmore, J. Copeland, and D. Rife, 2012: Aerosol Fate and Transport (Plume) Modeling. *Volume I, National Bio and Agro-Defense Facility Updated Site-Specific Biosafety and Biosecurity Mitigation Risk Assessment*, Department of Homeland Security, Science and Technology Directorate, 237-322.
- Bieringer, P. and **G. Bieberbach**, 2012: Appendix A5: NBAF Updated SSRA Tornado Hazard Analysis. *Appendices, National Bio and Agro-Defense Facility Updated Site-Specific Biosafety and Biosecurity Mitigation Risk Assessment*, Department of Homeland Security, Science and Technology Directorate, A5-1 - A5-18.
- 2010 **Bieberbach, G.**, P. Bieringer, S. Longmore, J. Copeland, and D. Rife, 2010: Appendix J: Aerosol Fate and Transport (Plume) Modeling. *Appendices to Final Report, National Bio and Agro-Defense Facility Site-Specific Biosafety and Biosecurity Mitigation Risk Assessment*, Department of Homeland Security, Science and Technology Directorate, J1-J71.
- 2006 Warner, S., N. Platt, J.F. Heagy, J.E. Jordan, and **G. Bieberbach**, 2006: Comparisons of Transport and Dispersion Model Predictions of the Mock Urban Setting Test Field Experiment. *J. Appl. Meteor. Climatol.*, **45**, 1414–1428.
- 2001 Warner, S., J.F. Heagy, N. Platt, D. Larson, G. Sugiyama, J.S. Nasstrom, K.T. Foster, S. Bradley, and **G. Bieberbach**, 2001: Evaluation of transport and dispersion models: A controlled comparison of HPAC and NARAC predictions, *Institute for Defense Analysis*, P-3555.
- Warner, S., N. Platt, J.F. Heagy, S. Bradley, **G. Bieberbach**, G. Sugiyama, J.S. Nasstrom, K.T. Foster, and D. Larson, 2001: User-oriented measures of effectiveness for the evaluation of transport and dispersion models, *Institute for Defense Analysis*, P-3554.
- 2000 **Bieberbach, G.**, H.E. Fuelberg, A.M. Thompson, A. Schmitt, J.R. Hannan, G.L. Gregory, Y. Kondo, R.D. Knabb, G.W. Sachse, and R.W. Talbot, 2000: Mesoscale numerical simulations of air traffic emissions over the North Atlantic during SONEX flight 10: A case study, *J. Geophys. Res.*, **105**, 3821-3832.
- Fuelberg, H.E., J.R. Hannan, P.F.J. van Velthoven, E.V. Browell, **G. Bieberbach Jr.**, R.D. Knabb, G.L. Gregory, K.E. Pickering, and H.B. Selkirk, 2000: A meteorological overview of the Subsonic Assessment Ozone and Nitrogen Oxide Experiment (SONEX) period, *J. Geophys. Res.*, **105**, No. 3, 3633-3652.
- Hannan, J.R., H.E. Fuelberg, A.M. Thompson, **G. Bieberbach Jr.**, R.D. Knabb, Y. Kondo, B.E. Anderson, E.V. Browell, G.L. Gregory, G.W. Sachse, and H.B. Singh, 2000: Atmospheric chemical transport based on high resolution model-derived winds: A case study, *J. Geophys. Res.*, **105**, No. 3, 3807-3820.