JORDAN PHILIP LEFEBVRE

Oak Ridge National Laboratory
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Work Experience

10/2015-Present Oak Ridge National Laboratory, Nuclear Security and Isotope Technology Division, Nuclear Security Modeling Group
Research and Development Staff

Responsibilities include:

- Management of software development life cycle for Nuclear Security Modeling Group
- Development of the Airborne Debris Collection Planning Tool, the integration of the DELFIC: Department of Defense Fallout Prediction System with the HYSPLIT modeling system
- Development of Fallout Analysis Tools
- Programming languages including C, C++, CMake, TriBITS, Fortran, language bindings, Python, Java

Projects include:

- Fallout Inject Tool
- INDEPTH for IAEA Environmental Sampling
- Quantitative Uncertainty Analysis for Inverse Transport Methods
- Ground Base Collection of Fine Particulates for Volatile Samples
- Transform Prompt Effects Methodology
- Predictive Modeling and Uncertainty Quantification with Application to Emergency Response

04/2010-9/2015 Oak Ridge National Laboratory, Reactor and Nuclear Systems Division, Design, Safety and Simulation Integration Group, SCALE Code System,
Research and Development Staff

Responsibilities include:

- SCALE code developer and Infrastructure Team Convener
- Fallout and Forensics code manager
- Test Engineer for 1+ million lines of Fortran/C/C++ code on Linux/Darwin and Windows
- FogBugz/Kiln Server administrator
- GForge Advanced Server administrator
- Version Control experience with GIT, Mercurial and SVN
- Programming languages include C, C++, CMake, TriBITS, Fortran, C/C++/Fortran Language Bindings, Java, GWT, PHP, JavaScript, AJAX, ANT, XHTML, XML, SQL, Qt.

05/2009-04/2010 **Oak Ridge National Laboratory, Post Master Research Associate**

Responsibilities included:

- Working with SCALE code managers to maintain and enhance existing tools used to input and visualize data to radiation transport codes

- Development and maintenance of Fallout Analysis Tools and Fallout Planning Tools
- Development of Yield Prediction Software, Nuclear Fallout Data Backbone, and Nuclear Cloud Rise Visualization Software
- Programming languages include Java, PHP, JavaScript, AJAX, ANT, XHTML, XML, PostgreSQL, Fortran

05/2008-05/2009 **University of Tennessee Knoxville, Graduate Research Assistant**
Responsibilities included:

- Conception and development of GrAPPA, Graph Algorithms Pipeline for Pathway Analysis
- Working with a Computational Biologist research team at ORNL to obtain requirements for constructing remote access methods for their computational resources
- Development of graphical user interface for remote access methods
- Programming languages include PHP, MySQL, JavaScript, AJAX, Java, XHTML, and C

05/2008-08/2008 **Radio Systems Corporation Knoxville, Web Developer**
Responsibilities included:

- Web site search engine optimization (SEO)
- Communication with Strategic Business Units for web content deployment
- Maintenance and development of an international web site
- Programming languages included PHP, MySQL, and XHTML

08/2007-07/2008 **Daxor Corporation, Software Engineering Consultant**
Responsibilities included software, and web site consultation for FDA regulated nuclear medicine instrumentation suite. Programming languages included C# .Net, ASP, and Visual Basic.

01/2007-12/2007 **University of Tennessee Knoxville, Computer Science Teaching Assistant**
Responsibilities included instructing students in scripting languages. (PHP, JavaScript, Python, XHTML, XML, etc.)

Education

May 2009 **University of Tennessee –** Knoxville
Master of Computer Science
Overall GPA: 3.83/4.0

Fall 2007 **University of Tennessee -** Knoxville
Bachelor of Science, Computer Science
Overall GPA: 3.79/4.0 Magna cum Laude

Publications

Rearden, B. T., Dunn, M. E., Wiarda, D., Celik, C., Bekar, K., Williams, M. L., ... & Dugan, K. J. SCALE AND AMPX ADVANCEMENTS TO SUPPORT NCS APPLICATIONS.

Rearden, B. T., Bekar, K. B., Celik, C., Clarno, K. T., Dunn, M. E., Hart, S. W., ... & Lefebvre, R. A. (2015). *CRITICALITY SAFETY ENHANCEMENTS FOR SCALE 6.2 AND BEYOND*. Oak Ridge National Laboratory (ORNL), Oak Ridge, TN (United States).

Rearden, B. T., Lefebvre, R. A., Lefebvre, J. P., Clarno, K. T., Williams, M. L., Petrie Jr, L. M., ... & Thompson, A. (2015). *MODERNIZATION STRATEGIES FOR SCALE 6.2*. Oak Ridge National Laboratory (ORNL).

Bledsoe, K. C., Favorite, J. A., Lefebvre, J. P., Lefebvre, R. A., & Jessee, M. A. (2014). Application of the DiffeRential Evolution Adaptive Metropolis (DREAM) Method for Uncertainty Quantification in Inverse Transport Problems. *Transactions of the American Nuclear Society, 111*.

Rearden, Bradley T, Lefebvre, Robert A, Lefebvre, Jordan P, Clarno, Kevin T, Williams, Mark L, Petrie Jr, Lester M, & Mertyurek, Ugur. (2014). Modernization Enhancements in SCALE 6.2. United States.

Jessee, M. A., Wieselquist, W. A., Evans, T. M., Hamilton, S. P., Jarrell, J. J., Kim, K. S., ... & Williams, M. L. (2014). Polaris: A New Two-Dimensional Lattice Physics Analysis Capability for the SCALE Code System. *Proc. PHYSOR 2014*.

Rearden, B. T., Dunn, M. E., Wiarda, D., Celik, C., Bekar, K. B., Williams, M. L., ... & Lefebvre, J. P. (2013). *Overview of SCALE 6.2*. Oak Ridge National Laboratory (ORNL).

M. Monterial, V. J. Jodoin, J. P. Lefebvre, D. E. Peplow, and D. A. Hooper, "Automating the Coupling of ORIGEN with GADRAS via the Fallout Analysis Tool for National Technical Nuclear Forensics," *Proc. INMM 53rd Annual Meeting*, Orlando, FL, July 2012.

B. T. Rearden, L. M. Petrie, D. E. Peplow, M. A. Jessee, D. Wiarda, M. L. Williams, R. A. Lefebvre, J. P. Lefebvre, I. C. Gauld, and S. Goluoglu, "Enhancements in SCALE 6.1," *Proc. PHYSOR 2012 – Advances in Reactor Physics – Linking Research, Industry, and Education*, Knoxville, Tenn., April 15-20, 2012, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2012).

M. W. Francis, V. J. Jodoin, and J. P. Lefebvre, *Study on the Ability to Predict Yield from the Stabilized Height of a Nuclear Cloud*, ORNL/TM-2010/209, Oak Ridge National Laboratory, Oak Ridge, Tenn., October 2011.

B. T. Rearden, L. M. Petrie, D. E. Peplow, M. A. Jessee, D. Wiarda, M. L. Williams, R. A. Lefebvre, J. P. Lefebvre, I. C. Gauld, and S. Goluoglu, "SCALE 6.1 Enhancements for Nuclear Criticality Safety," *Proc. ICNC 2011*, Edinburgh, U.K., September 19-22, 2011.

V. J. Jodoin, R. W. Lee, D. E. Peplow, and J. P. Lefebvre, "Application of the ORIGEN Fallout Analysis Tool and the DELFIC Fallout Planning Tool to National Technical Nuclear Forensics," *Proc. ANS EPRRSD - 13th Robotics & Remote Systems for Hazardous Environments • 11th Emergency Preparedness & Response*, Knoxville, TN,

August 7-10, 2011.

V. J. Jodoin, R. W. Lee, D. E. Peplow, and J. P. Lefebvre, "Application of the DELFIC Fallout Planning Tool and the ORIGEN Fallout Analysis Tool to National Technical Nuclear Forensics (NTNF)," *Proc. 3rd International Joint Topical Meeting on Emergency Preparedness & Response Robotics & Remote Systems*, Knoxville, TN, August 7-10, 2011.

V. Jodoin, R. Lee, D. Peplow, and J. Lefebvre, "Application of the Oak Ridge Isotope Generation Code and the Defense Land Fallout Interpretive Code to National Technical Nuclear Forensics," *Proc. 56th Annual Meeting of the Health Physics Society*, West Palm Beach, FL, June 26-30, 2011.

M. W. Francis, V. J. Jodoin, and J. P. Lefebvre, *Study on the Ability to Predict Yield from the Stabilized Height of a Nuclear Cloud*, ORNL/TM-2010/209, Oak Ridge National Laboratory, Oak Ridge, Tenn., January 2011.

V. Jodoin, R. Lee, D. Peplow, and J. Lefebvre, "Application of the DELFIC Fallout Planning Tool and ORIGEN Fallout Analysis Tool to National Technical Nuclear Forensics (NTNF)" *Proc. 5th Joint DoD/DOE Nuclear Survivability/Weapon Effects Modeling & Simulation Workshop*, December 2010.