

## Paul W. Talbot

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### EDUCATION

<i>Doctor of Philosophy</i> , Nuclear Engineering University of New Mexico, Albuquerque, New Mexico, GPA 4.08	December 2016
<i>Master of Science</i> , Nuclear Engineering Oregon State University, Corvallis, Oregon, GPA 3.75	March 2013
<i>Bachelor of Science</i> , Physics BYU-Idaho, Rexburg, Idaho, GPA 3.84	April 2010

### PROFESSIONAL EXPERIENCE

<i>Idaho National Laboratory, Idaho Falls, ID</i> RAVEN project <ul style="list-style-type: none"><li>• High-dimension model reduction method implementation</li><li>• Sparse grid collocation method implementation</li><li>• Extensive framework improvement, refactoring, development</li><li>• Uncertainty quantification for BISON, MAMMOTH, RATTLESNAKE</li><li>• Python, C++</li></ul>	Fall 2014 - Present
MOOSE projects <ul style="list-style-type: none"><li>• Worked within multiphysics object-oriented software environment (MOOSE)</li><li>• Used method of manufactured solutions to test functionality</li><li>• Optimized polynomial fits for interstitials and voids in MARMOT</li><li>• C++, Python</li></ul>	Summers 2010, 2012
<i>Los Alamos National Laboratory, Los Alamos, NM</i> CCS-2 <ul style="list-style-type: none"><li>• Extrapolated existing pseudo-analytic single-dimensional discrete maximum principle for the implicit Monte Carlo equations governing radiative heat transfer to include multiple dimensions, non-equilibrium conditions, and multigroup energies.</li><li>• Implemented predictive capacity into use codes at LANL to predict boundedness in choices of spatial and time discretization.</li></ul>	Summer 2011
<i>AREVA, NP</i> BWR Neutronics <ul style="list-style-type: none"><li>• Assisted in benchmarking software version update</li><li>• Used simulation codes CASMO4 and MICROBURN-B2</li><li>• Researched effect of BLEU fuel in Browns Ferry Unit 2 reactor</li></ul>	Summers 2008, 2009

## COMPUTING SKILLS

Experienced with Python, C++, Git, Bash, MatLab, Visual Basic  
Some experience in Java, Javascript, Fortran, C

## PUBLICATIONS

- P. W. Talbot, “Advanced Stochastic Collocation Methods for Polynomial Chaos in RAVEN,” Ph. D. Dissertation, Department of Nuclear Engineering, University of New Mexico, December 2016
- P. W. Talbot, C. Wang, et al, “Multistep Input Reduction for High Dimensional Uncertainty Quantification in RAVEN Code,” ANS PHYSOR 2016
- P. W. Talbot, K. Gamble, et al, “Time-Dependent Sensitivity Analysis of OECD Benchmark using BISON and RAVEN,” 2016 ANS winter conference transactions
- P. W. Talbot, A. K. Prinja, C. Rabiti, “Adaptive Sparse-Grid Stochastic Collocation Uncertainty Quantification Convergence for Multigroup Diffusion,” 2016 ANS annual conference transactions
- C. Wang, P. W. Talbot, et al, “An efficient Sampling-Based Method for Sensitivity and Uncertainty Analysis through RAVEN,” 2016 ANS annual conference transactions
- P. W. Talbot, A. K. Prinja, C. Rabiti, “High Density Model Reduction Uncertainty Quantification for Multigroup Diffusion Neutronics,” 2015 ANS M&C topical conference transactions
- P. W. Talbot, A. K. Prinja, “Sparse-Grid Stochastic Collocation Uncertainty Quantification Convergence for Multigroup Diffusion,” 2014 ANS winter conference transactions
- P. W. Talbot, “Extending the Discrete Maximum Principle for the IMC equations,” Oregon State University masters thesis, September 2012
- P. W. Talbot, A. B. Wollaber, T. Palmer, “Implementing a Discrete Maximum Principle for the IMC Equations,” 2012 ANS general conference transactions, M & C division
- M. R. Tonks, D. Gaston, P. C. Millett, D. Andrs, P. W. Talbot, “An object-oriented finite element framework for multiphysics phase field simulations,” J. Computational Materials Science, Vol. 50 issue 3, January 2011

## MEMBERSHIPS

American Nuclear Society - Alpha Nu Sigma  
Society of Physics Students