

SETH R JOHNSON

EDUCATION

Sep. 2007–Dec. 2011	Ph.D., Nuclear Engineering and Radiological Sciences	University of Michigan, Ann Arbor
	Thesis title: <i>Anisotropic Diffusion Approximations for Time-dependent Particle Transport</i>	
	Committee: Edward W. Larsen (chair), Thomas J. Downar, James P. Holloway, William R. Martin, Katsuyo S. Thornton	
	Research code: PyTRT (http://pytrt.org)	
Apr. 2009	M.S.E., Nuclear Engineering and Radiological Sciences	University of Michigan, Ann Arbor
Sep. 2003–Dec. 2006	B.S., Nuclear Engineering (minor in Mathematics) , Summa cum laude	Texas A&M University, College Station

EMPLOYMENT

Jan. 2012–Present	R&D Staff, Monte Carlo Methods	Oak Ridge National Laboratory, Radiation Transport Group Methods development and implementation with the ADVANTG variance reduction code.
May 2008–Aug. 2008	Graduate Research Assistant	Los Alamos National Laboratory, Computational Physics Group (CCS-2) Implementation of Opacity Distribution Function method in the Implicit Monte Carlo code Milagro; methods development with ODFs.
Jan. 2007–Aug. 2007	Student Intern	Oak Ridge National Laboratory, Reactor Analysis Group Development of massively parallel 3D Sn transport code NEWTRNX: automated regression testing, validation with KENO and NEWT, visualization with VisIT, implementation of acceleration methods.
June 2006–Aug. 2006	Student Intern	Oak Ridge National Laboratory, Reactor Analysis Group Generation and analysis of SCALE and MCNP simplified pebble bed computational simulations.
May 2005–Aug. 2005	Student Intern	Sandia National Laboratories, Advanced Pulsed Power Group Data analysis using IDL; experimental dosimetry; assembly of RITS-6 IVA-type accelerator.
May 2004–Aug. 2004	Student Worker	Texas A&M University, Ocean Drilling Program Macintosh, Windows NT, Windows 2000, and Novell maintenance, troubleshooting, and repair.

MAJOR AWARDS AND SCHOLARSHIPS

2010–2011	U.S. Department of Energy Nuclear Energy University Programs Fellowship
2007–2010	National Science Foundation Graduate Research Program Fellowship
2006	Craig C. Brown Outstanding Senior Engineer Award
2004–2006	U.S. Department of Energy Nuclear Engineering/Health Physics Scholarship
2003–2006	Texas A&M University President's Endowed Scholarship
2003–2006	Stinson Scholarship
2003–2006	National Merit Scholarship

ACTIVE ORGANIZATIONS

2005–Present	Tau Beta Pi Engineering Honor Society (<i>Project leader '09–'10; Grad student coordinator '10–'11; Advisor '11–'12</i>)
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2010–2011	University of Michigan Sailing Club (<i>Instructor</i>)
2003–Present	American Nuclear Society (<i>Vice president '05–'06; Student conference workshop coordinator, '10</i>)
2004–Present	National Sciences Bowl, National Ocean Sciences Bowl (<i>Moderator</i>)
2005–2006	Awana Clubs (<i>Leader</i>)
2004–2005	Lambda Sigma Sophomore Honor Society (<i>Webmaster</i>)

SKILLS

<i>Programming</i>	C++, Python, SWIG, CMake, CUDA, bash, Perl, Fortran 95
<i>Libraries</i>	STL, Boost, Matplotlib, Silo, Trilinos, Numpy, HDF5, PyTables, googletest, MPI, . . .
<i>Development tools</i>	CMake, Doxygen, Git, Subversion, . . .
<i>Programs</i>	VisIT, Vim, MCNP5, Mathematica, SCALE, SolidWorks, Apple Keynote, . . .
<i>Typesetting</i>	LATEX, Adobe Illustrator, Adobe InDesign, Apple Pages, Microsoft Word ¹

PUBLICATIONS

- S. R. Johnson and E. W. Larsen, “Diffusion Boundary Conditions in Flatland Geometry,” *Trans. Am. Nucl. Soc.*, **105**, 446–448 (2011).
- S. R. Johnson and E. W. Larsen, “Boundary Conditions for the Anisotropic Diffusion Approximation,” *Trans. Am. Nucl. Soc.*, **105**, 443–445 (2011).
- S. R. Johnson and E. W. Larsen, “An Anisotropic Diffusion Approximation to Thermal Radiative Transfer,” Proc. Intl. Conf. on Math. and Comput. Methods Applied to Nucl. Sci. Eng. (M&C 2011), Rio de Janeiro, Brazil, May 8–12 (2011), [CD-ROM].
- T. J. Urbatsch, J. D. Densmore, R. G. McClaren, S. Mosher, S. R. Johnson, T. Kelley, P. Henning, G. Rockefeller, M. Buksas, A. Hungerford, and C. Fryer, “Jayenne Implicit Monte Carlo Project: Toward Stability, Robustness, Accuracy, Scalability—All Those Good Things,” Tech. Rep. LA-UR-09-03714, Los Alamos National Laboratory (June 2009), presentation at Oak Ridge National Laboratory.
- S. R. Johnson, “Implementation of and Improvements to the Opacity Distribution Function method,” Tech. Rep. CCS-2:08-52(U), Los Alamos National Laboratory (2008).
- S. R. Johnson and K. T. Clarno, “Implementation of Transport Synthetic Acceleration in NEWTRNX,” *Trans. Am. Nucl. Soc.*, **97**, 491–493 (2007).
- S. R. Johnson and K. T. Clarno, “Comparison of SCALE and MCNP Results for Computational Pebble Bed Benchmarks,” *Trans. Am. Nucl. Soc.*, **96**, 420–422 (2007).

¹If you stretch the definition of typesetting to its breaking point.