Tara M. Pandya
Radiation Transport Group, Reactor and Nuclear Systems Division, Oak Ridge National Laboratory, P.O. Box 2008, Bldg. 5700, Oak Ridge, TN 37831-6170, <pandyatm@ornl.gov>

PROFESSIONAL EDUCATION

Texas A&M University	Nuclear Engineering	B.S. 2006
Texas A&M University	Nuclear Engineering	M.S. 2009
Texas A&M University	Nuclear Engineering	PhD 2012

RESEARCH AND PROFESSIONAL EXPERIENCE

Radiation Transport Group, Oak Ridge National Laboratory — 2014–present
Research and Development Staff
Develop computational methods and algorithms and implement them in massively parallel Monte Carlo and deterministic radiation transport codes. Analyze these methods and algorithms as applied to various nuclear applications.

Radiation Transport Group, Oak Ridge National Laboratory — 2012–2014
Postdoctoral Research Associate
Develop computational methods and apply algorithms in a massively parallel Monte Carlo radiation transport code for analysis of HFIR on leadership-class machines.

WCI A/X Division, Lawrence Livermore National Laboratory — 2010
Research Practicum
Derived a parallel performance model for method of characteristics (MOC) sweeps. Implemented MOC into a massively parallel code (PDT) for verification.

Radiation Transport Group, Sandia National Laboratory — 2008
Internship
Derived the theoretical parallel efficiency for a parallel prefix solver in a radiation transport code. Tested the scalability of this solver on unstructured tetrahedral meshes.

RELEVANT PUBLICATIONS

1. T.M. Pandya, S.R. Johnson, T.M. Evans, G.G. Davidson, S.P. Hamilton, A.T. Godfrey. Implementation, Capabilities, and Benchmarking of Shift, a Massively Parallel Monte Carlo Radiation Transport Code. *J. Comp. Phys.*, Under Review.
2. T.M. Pandya, S.R. Johnson, G.G. Davidson, T.M. Evans, and S.P. Hamilton. Shift: A Massively Parallel Monte Carlo Radiation Transport Package. Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method. April 19-23, Nashville, TN, 2015.
3. T.M. Evans, et. al. Three-Dimensional Discrete Ordinates Reactor Assembly Calculations on Gpus. Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method. April 19-23, Nashville, TN, 2015.
4. G.G. Davidson, T.M. Evans, J.J. Jarrell, S.P. Hamilton, and T.M. Pandya, and R.N. Slaybaugh. Massively Parallel, Three-Dimensional Transport Solutions for the k-Eigenvalue Problem. *Nuc. Sci. Eng.*, **177**, 111–125, 2014.

5. T.M. Pandya, M. Adams, W.D. Hawkins. Long Characteristics with Piecewise Linear Sources Designed for Unstructured Grids. International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2011). May 8-12, Rio de Janeiro, Brazil, 2011.
6. S. Pautz, M. Adams, T.M. Pandya. Scalable Parallel Prefix Solvers for Discrete Ordinates Transport. *Nucl. Sci. Eng.*, **169**, 1-17, 2009.
7. S. Pautz, T.M. Pandya, M. Adams. Scalable Parallel Prefix Solvers for Discrete Ordinates Transport. International Conference on Advances in Mathematics, Computational Methods and Reactor Physics (M&C 2009). American Nuclear Society, May 3-7, Saratoga Springs, NY, 2009.
8. T.M. Pandya, M. Adams. Method of Long Characteristics Applied in Space and Time. International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics (M&C 2009). American Nuclear Society, May 3-7, Saratoga Springs, NY, 2009.
9. R. Lipinski, C. Peters, T.M. Pandya, S. Wright. Proposed Design and Operation of a Heat Pipe Reactor Using the Sandia National Laboratories Annular Core Test Facility and Existing UZrH Fuel Pins. STAIF 2005, Albuquerque, NM.

SYNERGISTIC ACTIVITIES

Pandya specializes in the development of deterministic and Monte Carlo-based radiation transport methods with applications to reactor analysis and radiation shielding. Her interests include massively-parallel deterministic, Monte Carlo, and hybrid radiation transport methods, as well as parallel algorithm analysis, radiation hydrodynamics, and uncertainty quantification. She is an INPO Fellowship recipient, and currently works as a developer on the Denovo deterministic transport code and the Shift Monte Carlo transport code at Oak Ridge National Laboratory.

RECENT COLLABORATIONS AND CO-EDITORS

Marvin Adams, Texas A&M University; Cihangir Celik, Oak Ridge National Laboratory; David Chandler, Oak Ridge National Laboratory; Gregory Davidson, Oak Ridge National Laboratory; Thomas Evans, Oak Ridge National Laboratory; Andrew Godfrey, Oak Ridge National Laboratory; Steven Hamilton, Oak Ridge National Laboratory; W. Daryl Hawkins, Texas A&M University; Joshua Jarrell, Oak Ridge National Laboratory; Prashant Jain, Oak Ridge National Laboratory; Seth Johnson, Oak Ridge National Laboratory; Wayne Joubert, Oak Ridge National Laboratory; Shawn Pautz, Sandia National Laboratory; Josh Peterson, Oak Ridge National Laboratory; Joel Risner, Oak Ridge National Laboratory; Stuart Slattery, Oak Ridge National Laboratory; Rachel Slaybaugh, University of California-Berkeley; Shane Stimpson, Oak Ridge National Laboratory; Jon Walsh, Massachussets Institute of Technology