W. David Pointer, Ph.D.

nuclear energy research & development engineer

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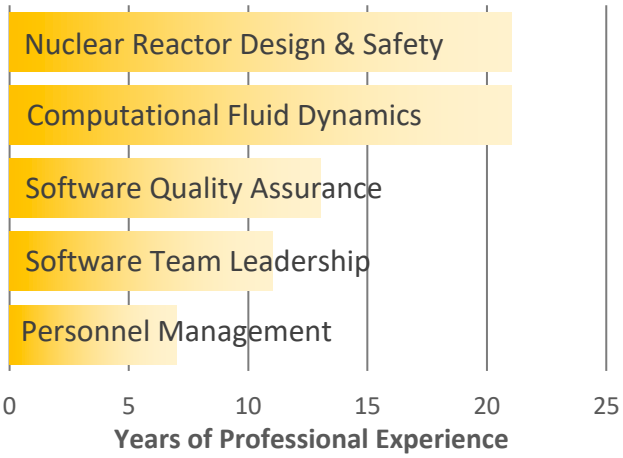
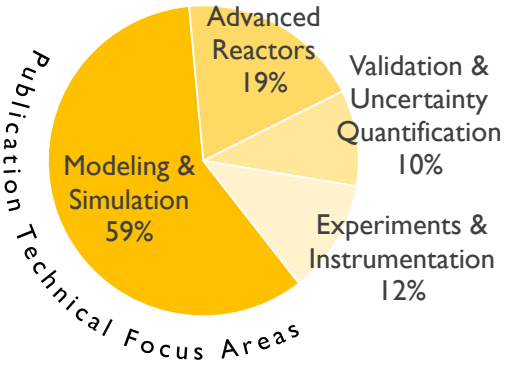
0000-0003-0946-7937

Experienced Leader, Team Builder, Problem Solver, Mentor & Communicator



20+ Years Post Ph.D.



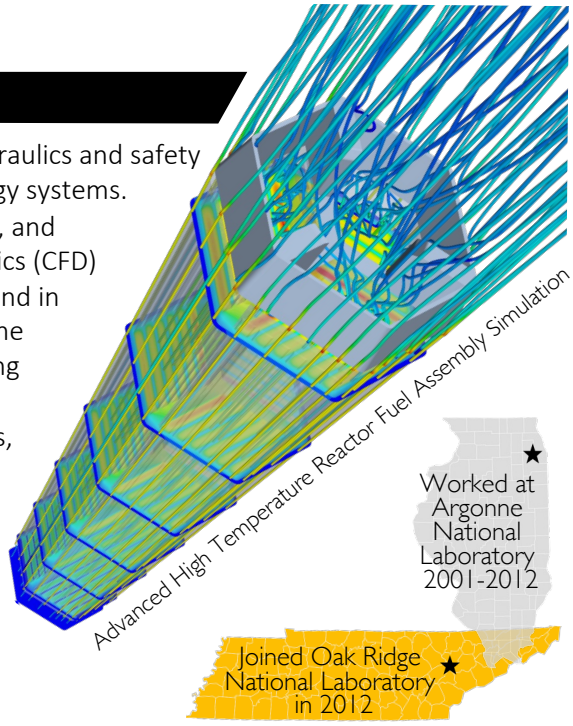
Google Scholar	Since 2001	Since 2017
Citations	1237	596
h-index	17	12
i10-index	34	14

2020 – Present
Section Head, Advanced Reactor Engineering & Development at Oak Ridge National Laboratory

- Expanded ORNL core capabilities for engineering analysis, design and licensing of advanced nuclear reactors
- Grew team from 16 to 52 staff
- Diversified funding sources beyond DOE-NE
- Strengthened relationships with ORNL facilities

Short Bio

I am a recognized expert in the thermal hydraulics and safety of conventional and advanced nuclear energy systems. My experience in the application, validation, and development of computational fluid dynamics (CFD) software is balanced with a strong background in experimental fluid dynamics methods and the development and qualification of engineering components. I have successfully managed research groups at two national laboratories, led multiple multi-disciplinary software development teams, and served as the technical integrator of significant national research programs.



EDUCATION

2001
University of Tennessee
PhD Nuclear Engineering

1999
University of Tennessee
MS Nuclear Engineering

1997
University of Tennessee
BS Nuclear Engineering

Professional Activities

- Technical Program Co-Chair, 19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (2022)
- Technical Program Chair, Advances in Thermal Hydraulics 2022
- 2022-2024 Elected Member of the Thermal Hydraulics Division Executive Committee, American Nuclear Society
- Appointed Member of American Nuclear Society Program Committee and Finance Committee

Personal

On weekends, I like to spend time with my family exploring outdoors or playing games.

When I have some time for myself, I enjoy woodworking, especially cabinetry and furniture making. I also enjoy the arts as an amateur painter, marching band equipment mover, ballet roadie and aspiring guitarist.

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Oak Ridge National Laboratory

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CURRICULUM VITAE

EDUCATION

University of Tennessee, Knoxville, TN -- Ph.D. in Nuclear Engineering, May 2001
University of Tennessee, Knoxville, TN -- M.S. in Nuclear Engineering, August 1999
University of Tennessee, Knoxville, TN -- B.S. in Nuclear Engineering, May 1997

CAPABILITIES

- Recruit the best talent and build successful multi-disciplinary teams to tackle big challenge problems, as demonstrated at two national laboratories.
- Lead diverse multi-institution software team deploying multiphysics simulation toolsets for advanced reactor design and safety analysis which leverage high-performance computing to provide unprecedented predictive power and precision.
- Drive significant national research campaigns which integrate contributions from many institutions.
- Innovate in the application, validation, and development of multiphase computational fluid dynamics (CFD) software on leadership class computing architectures.
- Design, develop, construct and execute of large-scale thermal hydraulics experiments to support the design of advanced reactor concepts by addressing physics questions for specific reactor design features and validating high fidelity simulation methods.
- Define best practices for application of CFD methods for a variety of engineering problems in the areas of power generation, energy efficiency, and transportation.
- Evaluate performance and safety of advanced nuclear reactor designs, including gas, liquid metal, salt and water-cooled concepts.

SKILLS

- Experienced nuclear reactor performance and safety analysts and with specific focus on the design of sodium-cooled fast reactors (SFRs), lead-cooled fast reactors (LFRs), high-temperature gas-cooled reactors (HTGRs), molten salt reactors (MSRs) and associated systems. Relevant experience working with commercial vendors on performance and safety analysis of conventional LWR component designs, contemporary small modular reactor (SMR) designs, and microreactor concepts.
- Expert in multidimensional single- and two-phase flow, CFD, and flow instability identification and mitigation, with practical experience in the integration of advanced modeling and simulation tools for analysis of multiphysics and multiscale phenomena.
- Skilled in systems designs using alternative coolants such as liquid metals and molten salts, scaled experiment development using a wide variety of working fluids, and validation of numerical simulations.
- Knowledgeable in the application of conventional and advanced thermal fluid instrumentation, including Particle Image Velocimetry (PIV), Laser Doppler Velocimetry (LDV), and Ultrasonic Doppler Velocity Profilometry (UVP) systems.
- Effective in the combination and extension of existing capabilities to provide innovative solutions for engineering problems.
- Resourceful project manager with excellent interpersonal and communication skills.
- Trained in media and public communications.

EXPERIENCE

October 2020–Present

Section Head, Advanced Reactor Engineering and Development

Oak Ridge National Laboratory

- Lead a section of 51 technical staff and postdoctoral associates, assigned to eight technical groups, providing the expertise that is needed to take new advanced reactor designs from concept to concrete-and-steel reality – system engineering, licensing and safety, thermal hydraulics and structural analysis, physical testing of components, instrumentation, control systems, and, quite literally, concrete and steel.

2012–Present

Distinguished Computational Fluid Dynamics Nuclear Engineer

Oak Ridge National Laboratory

- Support the development of a comprehensive CFD capability to achieve the mission of the Reactor and Nuclear Systems Division and the Nuclear Science and Engineering Directorate.
- Support nuclear reactor and nuclear system development activities of the Reactor and Nuclear Systems Division with thermal fluid and system safety analysis including initial CFD design assessments of the advanced high-temperature reactor (AHTR) fuel assembly concept, design assessments of advanced steam generator design, and analysis of SFR fuel assembly designs.
- Establish stronger ties with US universities and international partners with relevant expertise in nuclear reactor thermal hydraulics and system design.
- Drafted white paper summarizing proposed ModSimX program goals and objectives.

2018–2020

Group Leader, Advanced Reactor Engineering

Oak Ridge National Laboratory

- Lead a group of eight technical staff focused on system level design and operations optimization, subchannel thermal hydraulics analysis and fuel performance analysis supporting deployment of advanced nuclear reactor concepts and continued operation of the existing commercial fleet.
- Grew the Advanced Reactor Engineering Group from 16 staff plus two postdocs in March 2018 to 41 staff plus 3 postdocs. In February 2020 the group divided into five more topically focused groups, retaining leadership of one of the five groups bearing the same name.
- Lead or support the planning and execution of research tasks sponsored by DOE Office of Nuclear Energy, DOE Office of Energy Efficiency and Renewable, Energy, DOE Office of Science, National Nuclear Security Administration, National Aeronautics and Space Administration, and the Nuclear Regulatory Commission.
- Support operations at the High Flux Isotope Reactor and the Spallation Neutron Source.
- Facilitate collaboration with industry through Strategic Partnerships Programs, Cooperative Research and Development Agreements, Memoranda of Understanding and Non-Disclosure Agreements.
- Serve as manager, mentor and performance evaluator for team leads, staff, postdocs and student program participants.

2015–2020

Deputy Lead for Thermal Hydraulics Methods

Consortium for Advanced Simulation of Light Water Reactors (CASL), a US DOE Energy Innovation Hub

Oak Ridge National Laboratory

- Lead the verification and validation of advanced thermal hydraulics simulation tools developed by the CASL consortium.
- Coordinate the development of hi2lo multiscale integration methods.
- Support the development of advanced two-phase boiling simulation capabilities within the framework of the CFD code STAR-CCM+ based on prior validation experience.

- Support operations of the CASL consortium as part of the Extended Leadership Team.

2018 (February – March)

Acting Director

Consortium for Advanced Simulation of Light Water Reactors (CASL), a US DOE Energy Innovation Hub

Oak Ridge National Laboratory

- Led the execution of fiscal year 2019 plan of record while CASL director was on extended leave.
- Planned and executed the 2019 annual meeting of the CASL Board of Directors in Washington, DC.
- Insured continuity in efforts to define CASL software licensing strategies, distribute second quarter funding allocations to partners and collaborators, respond to DOE requests, and regularly review program progress.

2014–2015

Technical and Program Integrator, Nuclear Energy Advanced Modeling and Simulation (NEAMS) Program under the auspices of the US DOE Office of Nuclear Energy, Advanced Modeling and Simulation Office (AMSO)

- Responsible for the integration of the NEAMS ToolKit, the principal product of the US DOE NEAMS program, which includes the Fuels, Reactor, and Integration Product Lines.
- Successfully integrated multi-institution team efforts with contributions from six national laboratories and many universities while maintaining program scope, schedule, and spending plans for $24M annual program.
- Defined and supervised technical work in areas of multiphysics integration, visualization, productization and user interaction.
- Maintained program requirements and planning documents based on input of industry and DOE customers and collaborators.
- Responsible for coordination of NEAMS Leadership Council and advisory groups.
- Developed scope for NEAMS-funded Nuclear Energy University Programs (NEUP).
- Coordinated NEAMS international collaboration commitments.

2010–2014

Technical Area Lead, NEAMS Reactor Performance and Safety Analysis Product Line

Under the auspices of the US Doe Office of Nuclear Energy, Nuclear Energy Advanced Modeling and Simulation Program

- Responsible for the development of simulation toolsets for the simulation of problems of interest related to nuclear reactor design and safety.
- Managed a multi-institution effort with contributions from six national laboratories, nine universities, and up to 40 individual contributors.
- Oversaw work in areas of multiphysics high-fidelity reactor simulation, system-level nuclear plant simulation, seismic response simulation, and advanced instrumentation methods for validation experiments.
- Maintained requirements and planning documents based on input of industry customers and collaborators.
- Coordinated connectivity among the Reactor Product Line development teams, as well as with the NEAMS Fuels Product Line and other DOE programs.
- Developed and supported international collaborations with the Russian Federation, the Netherlands, Belgium, France, Japan, and the Republic of Korea.

2010–2012

Lead, SHARP Reactor Simulation Suite Development Project

Argonne National Laboratory

- Responsible for the development of the SHARP reactor simulation suite, which provides high-fidelity integrated simulations of neutronics, thermal fluids, and structural mechanics phenomena in advanced nuclear reactor designs under a wide variety of plant conditions.
- Managed a team of up to 20 individual contributors who are responsible for the development of physics simulation modules and supporting elements such as mesh generation tools.
- Engaged industry representatives and DOE program leads for the first SHARP Requirements Meeting in 2011. This meeting defined clear functional requirements and prioritize use cases that are still being used to maintain focus on customer needs and product delivery.

2010–2012

Manager, Engineering Simulations Section

Argonne National Laboratory

- Served as the line supervisor of four technical staff plus assigned postdocs and students who were responsible for providing CFD support to a wide variety of Argonne programs.
- Supported engineering simulation planning of multiple reactor design and analysis programs and activities, including the Next Generation Nuclear Plant (NGNP) program, the US DOE Advanced Reactor Concepts (ARC) program, and the Global Threat Reduction Initiative (GTRI).

2001–2012

Principal Nuclear Engineer[*]

Argonne National Laboratory

- Supported development and validation of CFD toolsets and provided thermal hydraulic analysis and optimization of engineering systems including fast-spectrum nuclear reactors, high-power accelerator targets, and heavy vehicle systems.
- Contributed to the thermal hydraulic and system design of multiple liquid metal– cooled nuclear reactor concepts including the Advanced Burner Reactor (ABR), the Advanced Burner Test Reactor (ABTR), and the Encapsulated Nuclear Heat Source (ENHS).
- Contributed to the thermal hydraulic and system design of multiple accelerator-driven transmutation system concepts, including subcritical assembly and target system design.
- Contributed to the development of thermal hydraulic and system safety design and assessment plans for both prismatic and pebble bed high-temperature gas-cooled reactor concepts considered by the NGNP program and supported the development of initial Phenomena Identification and Ranking Tables (PIRTs) for both designs.
- Worked with experts from Argonne, CD-adapco, and other collaborators to develop and demonstrate a first-of-a-kind topology-based two-phase boiling capability in the commercial CFD code STAR-CD, which could represent all flow regimes expected during light water reactor (LWR) operations and transients. Supported adoption of the capability by industry early users.
- Contributed to the design, construction, and execution of thermal hydraulics experiments for concept development and code validation including the updated Natural Shutdown Test Facility (NSTF), the MAX thermal mixing facility, testing at the Idaho National Laboratory Matched Index of Refraction (MIR) facility, and many smaller scale experiments to support a wide variety of component design activities.
- Supported the establishment of the Transportation Research and Computing Center (TRACC), including initial applications in evacuation simulation and fluid structure interaction simulations.
- Led efforts related to improving energy efficiency of heavy vehicles (trucks, busses, and trains) through reduced aerodynamic drag and enhanced under-hood cooling.

1997–2001

Graduate Research Assistant

University of Tennessee

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[*] Advanced from Assistant Nuclear Engineer to Nuclear Engineer in 2004 and from Nuclear Engineer to Principal Nuclear Engineer in 2008.

- Supported multiple programs in the Energy Technology Division at Oak Ridge National Laboratory while completing master's and doctoral degrees.
  - Supported the design of the mercury target and associated systems for the Spallation Neutron Source (SNS) through scaled prototypic experiments and thermal hydraulic analysis.
  - Supported the design of the High Flux Isotope Reactor (HFIR) Cold Neutron Source with thermal hydraulic analysis and development of a leak detection assessment algorithm for the hydrogen cryostat.
  - Completed independent safety assessments for the Soviet-designed light water reactor, the 1000-megawatt Voda (water-moderated) Voda (water-cooled) Energy Reactor or VVER-1000, burning mixed oxide fuel for plutonium disposition.
  - Evaluated triggering options to drive vapor explosions in drift columns as a means of fine metal powder production.

ACADEMIC APPOINTMENTS

2017–Present
Adjunct Associate Professor
North Carolina State University, Department of Nuclear Engineering

2017-2022
Honorary Assistant Professor
Oregon State University, Nuclear Science and Engineering Department

2017-Present
Nuclear Engineering Program Advisory Board
Virginia Commonwealth University, Mechanical & Nuclear Engineering Department

Serve or have served as on graduate research committees at Texas A&M University, the University of Michigan, the University of Tennessee, George Washington University and the Ohio State University.

AWARDS AND HONORS

- 2017–2020 Elected At-Large Member of the Board of Directors, American Nuclear Society
- 2017–2018 Elected Vice Chair, American Nuclear Society Thermal Hydraulics Division
- 2016–2017 Elected Secretary, American Nuclear Society Thermal Hydraulics Division
- 2015–2016 Elected Treasurer, American Nuclear Society Thermal Hydraulics Division
- 2014 American Nuclear Society Thermal Hydraulics Division Best Paper Award
- 2012 American Nuclear Society Landis Young Member Engineering Achievement Award in recognition of an outstanding young career, exceptional technical achievements, and excellence in leadership to support the development of next generation simulation tools on high-performance computing platforms
- 2011 Argonne National Laboratory 10-Year Service Award
- 2009 International Conference on Fast Reactors (FR09) Best Young Professional Paper Award
- 2007 American Nuclear Society Young Member Excellence Award
- 2007 Argonne National Laboratory Pacesetter Award in recognition of work to benchmark/validate CFD simulations of two-phase boiling flows using an extended boiling framework
- 2006–2007 Elected President, North American Young Generation in Nuclear

- 2005-2006 Founding Chair, American Nuclear Society Young Members Group
- 2004-2006 Elected Communications Chair, North American Young Generation in Nuclear
- 2003 Argonne National Laboratory Pacesetter Award in recognition of work on external aerodynamic simulations for tractor-trailer vehicles

PUBLICATIONS

Journal Articles and Book Chapters

- R. Salko, et. al., "CTF: A modernized, production-level, thermal hydraulic solver for the solution of industry-relevant challenge problems in pressurized water reactors", *Nuclear Engineering and Design*, v. 387, 2022.
- X. Zhao, A. Huning, J. Burek, F. Guo, D. Kropaczek, W. D. Pointer, "The pursuit of net-positive sustainability for industrial decarbonization with hybrid energy systems," *Journal of Cleaner Production,* v. 362, 2022.
- D. R. Shaver, N. Salpeter, A. Tomboulides, P. Vegendla, A. Tentner, W. D. Pointer & E. Merzari, "Simulation of Boiling Two-Phase Flow in a Helical Coil Steam Generator Using the Spectral Element Code Nek-2P", *Nuclear Technology*, v. 206, issue 2, 2020, Pages 375-387.
- Robert K. Salko, William D. Pointer, Marc-Oliver Delchini, William L. Gurecky, Kevin T. Clarno, Stuart R. Slattery, Victor Petrov & Annalisa Manera, "Implementation of a Spacer Grid Rod Thermal-Hydraulic Reconstruction (ROTHCON) Capability into the Thermal-Hydraulic Subchannel Code CTF", *Nuclear Technology*, online, 2019.
- F. Roelofs, A. Gerschenfeld, M. Tarantino, K. Van Tichelen, W. D. Pointer, "Thermal-hydraulic challenges in liquid-metal-cooled reactors", in *Thermal Hydraulics Aspects of Liquid Metal Cooled Nuclear Reactors,* Ferry Roelofs, ed., Woodhead Publishing, 2019, Pages 17-43.
- C. Geffray, A. Gerschenfeld, P. Kudinov, I. Mickus, M. Jeltsov, K. Kööp, D. Grishchenko, D. Pointer, "Verification and validation and uncertainty quantification", in *Thermal Hydraulics Aspects of Liquid Metal Cooled Nuclear Reactors,* Ferry Roelofs, ed., Woodhead Publishing, 2019, Pages 383-405.
- S. Lomperski, A. Obabko, E. Merzari, P. Fischer, and W. D. Pointer, "Jet stability and wall impingement flow field in a thermal striping experiment," International Journal of Heat and Mass Transfer, v. 115, July 2017.
- E. Baglietto and W. D. Pointer, "Taking a fresh look at boiling heat transfer on the road to improved nuclear economics and efficiency," Nuclear Espana, May 2016.
- D. Wang, G. L. Yoder, W. D. Pointer, and D.E. Holcomb, "Thermal Hydraulics Analysis of the Advanced High Temperature Reactor," Nuclear Engineering and Design, v. 294, December 2015.
- S. Lomperski, C. Gerardi, and W. D. Pointer, "Fiber optic distributed temperature sensor mapping of a jet-mixing flow field," Experiments in Fluids, v. 56, n. 3, March 2015.
- E. Merzari, W. D. Pointer, P. Fischer, "Numerical Simulation and Proper Orthogonal Decomposition of the Flow in a Counter-Flow T-Junction," Journal of Fluids Engineering, accepted for publication, v. 135, n. 9, July 2013.
- E. Merzari, W. D. Pointer, J. G. Smith, A. Tentner, and P. Fischer, "Numerical simulation of the flow in wire-wrapped pin bundles: Effect of pin-wire contact modeling," Nuclear Engineering and Design, v. 253, December 2012.
- W. D. Pointer and A. E. Ruggles, "An approach for selection of flow regime and models for conservative evaluation of a vessel integrity monitoring system for water-cooled vacuum vessels," Nuclear Technology, v. 141, n. 2, February 2003.
- G. Yoder, Jr., J. M. Crye, A. E. Ruggles, W. D. Pointer, D. K. Felde, P. A. Jalouk, M. T. McFee, and M. W. Wendel, "Measurement of the Heat Transfer Coefficient for Mercury Flowing in a Narrow Channel," Journal of Heat Transfer, v. 124, n. 6, December 2002.

Published Refereed Proceedings

- X. Zhao, A. Huning, J. Burek, F. Guo, D. Kropaczek, W. D. Pointer, "The Role of Hybrid Energy Systems in Decarbonizing Industry: A Carbon Handprint–Based Case Study", 2022 ANS Annual Meeting, Anaheim, CA, June 12-16, 2022.

- Y. Fan, M. Li, W. D. Pointer, and I. A. Bolotnov, “Interface Capturing Simulations on Pool Boiling Performance with Multiple Nucleation Sites”, 2022 ANS Annual Meeting, Anaheim, CA, June 12-16, 2022.
- Nolan Goth, Thien Duy Nguyen, and W. David Pointer, “Investigation of Point-Contact Strategies for CFD Simulations of Pebble Bed Reactor Cores”, 2022 ANS Annual Meeting, Anaheim, CA, June 12-16, 2022.
- W. D. Pointer and M.-O. Delchini, “Development of a Crud Induced Localized Corrosion Analysis Capability in VERA,” Proceedings of CASL Virtual Topical Meeting, November 16-19, 2020.
- R. Salko, et al, “Development of a Crud Induced Localized Corrosion Analysis Capability in VERA,” Proceedings of CASL Virtual Topical Meeting, November 16-19, 2020.
- M.-O. Delchini, R. A. Lefebvre, W. D. Pointer, and B. T. Rearden, “Integration of the Nek5000 Computational Fluid Dynamics Code to the NEAMS Workbench,” ANS Meeting 2018, Philadelphia, PA, June 17–21, 2018.
- W. D. Pointer, “An Uncertainty Quantification of the Computational Fluid Dynamics Solution to the Modeling of the Contact Point in a Wire-Wrapped Fuel Assembly,” ANS Meeting 2018, Philadelphia, PA, June 17–21, 2018.
- W. D. Pointer and Y. Liu, “Eulerian Two-Fluid RANS-Based CFD Simulations of a Helical Coil Steam Generator Boiling Tube,” Proceedings of NURETH-17, Xian, China, September 3–8, 2017.
- D. Holcomb et al., “Fluoride Salt-Cooled High-Temperature Reactor Development Roadmap,” Proceedings of ICAPP 2014, Charlotte, USA, April 6–9, 2014.
- R. Hu and W. D. Pointer, “CFD Analyses of Natural Circulation in the Air-Cooled Reactor Cavity Cooling System,” International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2013), Sun Valley, ID, USA, May 5–9, 2013.
- S. Lomperski, C. Gerardi, and W. D. Pointer, “Distributed Fiber Optic Temperature Sensing for CFD Code Validation,” The 15th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, NURETH-15 Pisa, ITALY, May 2013.
- W. D. Pointer et al., “Developing a Comprehensive Software Suite for Advanced Reactor Performance and Safety Analysis,” Proceedings of 2013 International Conference on Fast Reactors, Paris, FRANCE, March 2013.
- E. Merzari, P. Fischer, and W. D. Pointer, “Turbulence and Coherent Structures in a Tight 19 Pin Bundle Separated by a Grid Spacer,” Proceedings of 2013 International Conference on Fast Reactors, Paris, FRANCE, March 2013.
- F. Roelofs, V. R. Gopala, K. Van Tichelen, X. Cheng, E. Merzari, and W. D. Pointer, “Status and Future Challenges of CFD for Liquid Metal Cooled Reactors,” Proceedings of 2013 International Conference on Fast Reactors, Paris, FRANCE, March 2013.
- S. Lomperski, C. Gerardi, and W. D. Pointer, “PIV Accuracy and Extending the Field of View for Validation of Multi-Scale CFD Tools,” Proc. of ATH’12, San Diego, CA, November 2012.
- E. Merzari, P. Fischer, W.D. Pointer, M. Pelligrini, and H. Ninokata, “On the Interaction of Boundary Layer and Mixing Layer in Stratified Pipe Flow,” Proceedings of FEDSM2012, Rio Grande, Puerto Rico, July 2012.
- S. Lomperski, E. Merzari, A. Obabko, W. D. Pointer, and P. Fischer, “The MAX Facility for CFD Code Validation,” Proc. of ICAPP’12, Chicago, IL, June 2012.
- E. Merzari, W. D. Pointer, P. F. Fischer, and H. Ninokata. “Numerical simulation of the flow in a tight lattice SFR rod bundle with grid spacers,” Proceedings of NURETH-14, September 2011.
- E. Merzari, W. D. Pointer, and P. F. Fischer, “A POD-Based Solver for the Advection-Diffusion Equation,” Proceedings of ASME-JSME-KSME Joint Fluids Engineering Conference 2011 (AJK2011-FED), Hamamatsu, Shizuoka, JAPAN, July 24–29, 2011.
- A. Tentner, W. D. Pointer, S. Lo, and A. Splawski, “Advances in the development and Validation of CFD-BWR, A Two-Phase Computational Fluid Dynamics Model for the Simulation of Flow and Heat Transfer in Boiling Water Reactors,” Proceedings of CFD4NRS-3, Washington, DC, September 2010.
- E. Merzari, W. D. Pointer, J. Smith, and P. Fischer, “Numerical Simulation of the Flow in Wire-Wrapped Pin Bundles: Effect of the Pin-Wire Contact Modeling,” Proceedings of CFD4NRS-3, September 2010.
- E. Merzari, W. D. Pointer, A. Obabko and P. Fischer, “On the numerical simulation of thermal striping in the upper plenum of a fast reactor,” Proceedings of International Congress on Advances in Nuclear Power Plants, San Diego, CA, June 2010.

- E. Merzari, W. D. Pointer, and P. Fischer, “Proper Orthogonal Decomposition of the flow in a T-junction,” Proceedings of International Congress on Advances in Nuclear Power Plants, San Diego, CA, June 2010.
- W. D. Pointer and J. W. Thomas, “Steady-State, “Whole-Core Prismatic VHTR Simulation Including Core Bypass,” Proceedings of International Congress on Advances in Nuclear Power Plants, San Diego, CA, June 2010.
- J. W. Thomas, C. H. Lee, W. D. Pointer, and W. S. Yang, “Steady State, Whole Core VHTR Simulation with Consistent Coupling of Neutronics and Thermo-Fluid Analysis,” Proceedings of International Congress on Advances in Nuclear Power Plants, San Diego, CA, June 2010.
- W. D. Pointer, J. Smith, A. Siegel, and P. Fischer, “RANS Simulations of Turbulent Diffusion in Wire-Wrapped Sodium Fast Reactor Fuel Assemblies,” Proceedings of International Conference on Fast Reactors and Related Fuel Cycles (FR09), Kyoto, JAPAN, November 2009.
- W. D. Pointer, S. Lomperski, P. Fischer, and A. Obabko, “Proposed Experiment for Validation of CFD Methods for Advanced SFR Design: Upper Plenum Thermal Striping and Stratification,” Proceedings of the 17th International Conference on Nuclear Engineering (ICONE17), Brussels, BELGIUM, ICONE17-75740, July 2009.
- A. Tentner, W. D. Pointer, S. Lo, and A. Splawski, “Development and Validation of a Computational Fluid Dynamics Model for the Simulation of Two-Phase Flow Phenomena in a Boiling Water Reactor Fuel Assembly,” Proceedings of the 17th International Conference on Nuclear Engineering (ICONE17), Brussels, BELGIUM, ICONE17-75740, July 2009.
- W. D. Pointer, J. Thomas, T. Fanning, P. Fischer, and A. Siegel, “RANS-Based CFD Simulations of Sodium Fast Reactor Wire-Wrapped Pin Bundles,” Proceedings of M&C 2009, Saratoga Springs, NY, May 2009.
- T. H. Fanning, W. D. Pointer, and J. W. Thomas, “Multi-Resolution Modeling of Subassembly Pin Bundles for Advanced Fast Reactor Safety Simulations,” Proceedings of M&C 2009, Saratoga Springs, NY, May 2009.
- J. G. Smith, A. Tokuhiro, W. D. Pointer, and P. F. Fischer, “Pressure Loss Predictions in CFD Simulations of Wire-Wrapped SFR Fuel Assemblies,” Proceedings of ICAPP ’09, Tokyo, JAPAN, May 2009.
- P. F. Fischer, J. Lottes, W. D. Pointer, and A. Siegel, “Petascale algorithms for reactor hydrodynamics,” J. Phys. Conf. Series, 2008.
- W. D. Pointer, P. Fischer, A. Siegel, and J. Smith, “RANS-based CFD Simulations of Wire-Wrapped Fast Reactor Fuel Assemblies,” Proceedings of the International Congress on Advanced Power Plants 2008 (ICAPP’08), Anaheim, CA, June 2008, paper no 8252.
- W. D. Pointer, et al., “Prediction of Boiling Water Reactor Assembly Void Distributions Using A Two-Phase Computational Fluid Dynamics Model,” Proceedings of 16th International Congress on Nuclear Engineering (ICONE-16), Orlando, FL, May 2008, paper no 48452.
- J. Smith, W. D. Pointer, B. Babin, and P. Fischer, “Effects of Mesh Density and Flow Conditioning in Simulating 7-Pin Wire Wrapped Fuel Pins,” Proceedings of 16th International Congress on Nuclear Engineering (ICONE-16), Orlando, FL, May 2008, paper no. 48306.
- W. D. Pointer et al., “Applicability of Commercial CFD Tools for Assessment of Heavy Vehicle Aerodynamic Characteristics,” Proceedings of the Aerodynamics of Heavy Vehicles II: Trucks, Buses and Trains, Tahoe, CA, August 2007.
- W. D. Pointer, “Eulerian Two-Phase Computational Fluid Dynamics for Boiling Water Reactor Analysis,” Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C + SNA 2007), Monterey, CA, April 15–19, 2007.
- A. Tentner, W. D. Pointer, T. Sofu, D. Weber, S. Lo, and A. Splawski, “Development and Validation of an Extended Two-Phase Computational Fluid Dynamics Model for the Analysis of Boiling Flow in Reactor Fuel Assemblies,” Proceedings of ICAPP 2007, Nice, FRANCE, May 13–18, 2007.
- T. Sofu, J. W. Thomas, D. P. Weber, W. D. Pointer, and T. Downar, “Coupled BWR Calculations with the Numerical Nuclear Reactor Software System,” Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C + SNA 2007), Monterey, CA, April 15–19, 2007.
- D. Weber, T. Sofu, D. Pointer, A. Tentner, Z. Zhong, T. Downar, J. Thomas, S. Lo, and A. Splawski, “Extension of Integrated Neutronic and Thermal-Hydraulic Analysis Capabilities of the ‘Numerical Nuclear Reactor’ Software System for BWR Applications,” Proceedings of PHYSOR-2006, American Nuclear Society, Vancouver, CANADA, September 2006.

- W. D. Pointer, T. Sofu, and D. Weber, “Development of Guidelines for the Use of Commercial CFD in Tractor-Trailer Aerodynamic Design,” Proceedings of the 2005 Society of Automotive Engineers Commercial Vehicle Congress and Exhibition, Rosemont, IL, November 2005, SAE Paper No. 05CV-120.
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- R. McCallen et al., “DOE's Effort to Reduce Truck Aerodynamic Drag-Joint Experiments and Computations Lead to Smart Design,” Proceedings of the 2004 AIAA Fluid Dynamics Conference and Exhibition, Portland, OR, June 2004, AIAA-2004-2254.
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