W. David Pointer, Ph.D.

Oak Ridge National Laboratory
Reactor and Nuclear Systems Division
PO Box 2008, MS-6167
Oak Ridge, TN 37803-6167

Email: pointerwd@ornl.gov
Phone: (865) 241 4472

PROFILE

W. David Pointer is a recognized expert in the thermal hydraulics and safety of both conventional and advanced nuclear energy systems. He has extensive experience in the application, validation and development of computational fluid dynamics software as well as a strong background in experimental fluid dynamics methods for nuclear energy system and component design and licensing. Dr. Pointer has contributed to a wide variety of technical initiatives including:

- The development of integrated multi-physics simulation toolsets for advanced reactor design and safety analysis which leverage high performance computing to provide unprecedented predictive power and precision.
- The development and calibration of CFD-based simulation capabilities for boiling flows to support industry application to current fuel performance issues.
- The development and execution of advanced separate effects experiments to support the design of advanced reactor concepts, including VHTR and SFR systems.
- The design and execution of dual use experiments that address physics questions related to specific reactor design features and provide opportunities for validation of higher fidelity methods.
- The identification and prioritization of phenomena occurring in postulated events in advanced reactor designs, including VHTR and SFR concepts.
- The application of CFD methods to a variety of engineering problems in the areas of power generation, energy efficiency and transportation.

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

EXPERIENCE

2014 - present

Technical and Program Integrator, Nuclear Energy Advance Modeling and Simulation Program

Under the auspices of the U.S. DOE Office of Nuclear Energy, Advanced Modeling and Simulation Office

- Responsible for the integration of the NEAMS ToolKit, including the Fuels and Reactor Product Lines

- Manages multi-institution effort with contributions from 6 National Laboratories and many universities.
- Oversees technical work in areas of multi-physics integration, visualization, productization and user interaction.
- Maintains requirements and planning documents based on input of industry and DOE customers and collaborators.
- Responsible for coordination of NEAMS Leadership Council and advisory groups.
- Develops scope for NEAMS-funded Nuclear Energy University Programs.
- Coordinates NEAMS international collaboration commitments.

2012 – Present

Distinguished Computational Fluid Dynamics Nuclear Engineer

Oak Ridge National Laboratory

- Support the development of a comprehensive computational fluid dynamic capability to support the objectives 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; completed initial CFD design assessments of the AHTR fuel assembly concept.
- Establish stronger ties with U.S. and international universities with relevant expertise in nuclear reactor thermal hydraulics and system design.

2010-2014

Technical Area Lead, Reactor Performance and Safety Analysis Product Line

Under the auspices of the U.S. Doe Office of Nuclear Energy, Nuclear Energy Advance 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 multi-institution effort with contributions from 6 National Laboratories and 9 Universities.
- Oversaw work in areas of multi-physics 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 maintained international collaborations with Russian Federation, the Netherlands, Belgium, France, Japan and 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 20-30 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 was used to define clear functional requirements and prioritized use cases that are 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 4 technical staff plus visiting post-docs and students who were responsible for providing computational fluid dynamics support to a wide-ranging variety of Argonne programs.
- Supported engineering simulation planning of multiple reactor design and analysis programs and activities, including NGNP, ARC and GTRI

2001-2012

Principal Nuclear Engineer*

Argonne National Laboratory

- Supported development and validation of computational fluid dynamics toolsets and provide thermal hydraulic analysis and optimization of engineering systems including fast-spectrum nuclear reactors, high-power accelerator targets, and heavy vehicle transportation 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 Next Generation Nuclear Plant (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 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 INL Matched Index of Refraction (MIR) facility, and many smaller-scale experiments to support a wide variety of component design activities.

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

- 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

- Supported a variety of programs at Oak Ridge National Laboratory while completing Masters and Doctoral degrees.
  - Supported the design of the mercury target and associated systems for the Spallation Neutron source through scaled prototypic experiments and thermal hydraulic analysis.
  - Supported the design of the HFIR Cold Neutron Source with thermal hydraulic analysis and leak detection assessment algorithm for the hydrogen cryostat.
  - Completed independent safety assessments for VVER-1000 reactors burning mixed oxide fuel for plutonium disposition.
  - Evaluated triggering options for vapor explosions in drift columns as a means of fine metal powder production.

SKILLS

- Experienced nuclear reactor performance and safety analysts and with specific focus on the design of sodium cooled fast reactors, lead cooled fast reactors, high temperature gas cooled reactors, and associated systems. Relevant experience working with commercial vendors on performance and safety analysis of conventional LWR component designs.
- Expert in multi-dimensional single- and two-phase flow, computational fluid dynamics, and flow instability identification and mitigation, with practical experience in the integration of advanced modeling and simulation tools for analysis of multi-physics and multi-scale phenomena.
- Skilled in liquid metal systems design, scaled experiment development using a wide variety of working fluids, and validation of numerical simulations.
- Knowledgeable in the application of conventional and advance thermal fluid instrumentation including, Particle Image Velocimetry (PIV) and Laser Doppler Velocimetry (LDV) and Ultrasonic Doppler Velocity Profilimetry (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.

AWARDS AND HONORS

- 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 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

- Argonne National Laboratory Pacesetter Award (2007) in recognition of work to benchmark/validate computational fluid dynamics simulations of 2-phase boiling flows using an extended boiling framework
- Argonne National Laboratory Pacesetter Award (2003) in recognition of work on external aerodynamic simulations for tractor-trailer vehicles

PROFESSIONAL ACTIVITIES

- Member of the American Nuclear Society (ANS) since 1996.
  - Member of Thermal Hydraulic Division, Mathematics and Computations Division, and Young Members Group
  - Current Roles
    - Chair, ANS Membership Committee
    - Treasurer, ANS Thermal Hydraulics Division
    - Member, ANS Planning Committee
  - Past roles:
    - Executive Committee Member At-Large, Thermal Hydraulics Division (2013-2015)
    - Member, Communications Committee (2003-2015)
      - Led the establishment of communications skills development opportunities for ANS members on behalf of the Public Information Committee. Also led development of numerous communications resource projects including the ANS Focused Messages and the Insider's View series of handout materials.
    - Chair, Strategic Communications Task Force (2012-2014)
      - Led development of the inaugural ANS Strategic Communications Plan
    - Chair, Communications Committee (2011-2013)
      - Championed restructuring the committee to enable participation of broader group of ex officio members and to enable to committee to more effectively recruit volunteers for specific projects.
    - Vice Chair, Communications Committee (2008-2011)
    - Member, Student Sections Committee (2004-2010)
      - Championed inclusion of ANS Student Members in social networking events at ANS National and Topical Meetings.
    - Executive Committee Member At-Large, ANS Education and Training Division (2007-2010)
      - Led the establishment of a series of communications-focused technical sessions as part of the ANS National Meetings.
    - Chair, Chicago Local Section (2007-2009)
    - Vice Chair, Special Committee on Young Member Issues (2004-2007)
    - Chair, Young Members Group (2005-2006)
      - Championed the establishment of the ANS Young Members Group and the ANS/NA-YGN Young Professionals Congress, serving as founding chair of both.
- Member of the North American Young Generation (NAYGN) in Nuclear since 2002.
  - Current Roles
    - Member, NA-YGN Sustainability Committee
  - Past Roles
    - Member of the NA-YGN Core, the elected Board of Directors (2003-2008)
    - Past President (2007-2008)
      - Led establishment of the Executive Advisory Council
    - President (2006-2007)
      - Membership grew from approximately 500 members to nearly 3000 members across North America in course of term on Board of directors, and 700 members

(an increase of 30%) and 9 local chapters (an increase of 30%) were added during one-year term as President.
    - Vice President (2005-2006)
    - Communications Chair (2003-2005)
- Member, American Society of Mechanical Engineers

PUBLICATIONS

Journal Articles and Book Chapters

- 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, 2013.
- E. Merzari, W. D. Pointer, J. G. Smith, A. Tentner, 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.
- Tentner, W. D. Pointer, S. Lo, and A. Splawski, "Integral Validation of a CFD Model for the Simulation of Two-Phase Flow Phenomena in a Boiling Water Reactor: Analyses of the BFBT Full Bundle Tests," Nuclear Engineering and Design, in review for BFBT benchmark special issue.
- W. David 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, 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

- 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, 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, 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, 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, D. W. Pointer, "PIV Accuracy and Extending the Field of View for Validation of Multi-Scale CFD Tools," Proc. of ATH'12, San Diego, CA, Nov. 2012.
- E. Merzari, P. Fischer, W.D. Pointer, M. Pelligrini, 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, 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.
- 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, Sept 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, Sept 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 (Jun 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 (Jun 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 (Jun 2010).
- J. W. Thomas, C. H. Lee, W. D. Pointer, 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 (Jun 2010).
- W. D. Pointer, J. Smith, A. Siegel, 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 (Nov 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).
- 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, New York (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, New York (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, California, April 15-19, 2007.
- Tentner, W. D. Pointer, T. Sofu, D. Weber, S. Lo, 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, California, April 15-19, 2007.
- D. Weber, T. Sofu, D. Pointer, A. Tentner, Z. Zhong, T. Downar, J. Thomas, S. Lo, 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, Sept. 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.
- W. D. Pointer, "Evaluation of Commercial CFD Code Capabilities for Prediction of Heavy Vehicle Drag Coefficients," Proceedings of the 2004 AIAA Fluid Dynamics Conference and Exhibition, Portland, OR, June 2004, AIAA-2004-2254.
- W. D. Pointer, " Development of Compact Neutron Generator Design Options for the Rare Isotope Accelerator," Proceedings of the International Youth Nuclear Congress 2004, Toronto, Ontario, Canada, May 2004, IYNC2004-143.
- W. D. Pointer, T. Sofu, and D. Weber, "Commercial CFD Code Validation for Simulation of Heavy-Vehicle External Aerodynamics," Proceedings of the 2003 ASME Fluids Engineering Division Summer Meeting, Honolulu, HI, July 2003.
- W. D. Pointer, J. E. Herceg, J. Roglans, Y. Gohar, L. Krajtl, "High Power Spallation Target Design for Accelerator-Driven Waste Transmutation," Proceedings of the Accelerator Applications of Nuclear Technology (AccApp'03), San Diego, CA, June 2003.
- W. D. Pointer, T. Sofu, and D. Weber, "Commercial CFD Code Validation for Heavy-Vehicle External Aerodynamics Simulation," Proceedings of the United Engineering Foundation Meeting on the Aerodynamics of Heavy Vehicles: Trucks, Buses and Trains, Monterey-Pacific Grove, CA, December, 2002
- D. Pointer, T.Sofu, Y. Gohar, "Optimization of a Liquid Lead-Bismuth Eutectic Spallation Target Using Computational Fluid Dynamics," Proceedings of the 2002 ASME Fluids Engineering Division Meeting, Montreal, Canada, July 14-18 2002.
- Y. Gohar, et al., "Lead-Bismuth Spallation Target Design of the Accelerator-Driven Test Facility (ADTF)," Proceedings of the Third International Workshop on Utilization and Reliability of High-Power Proton Accelerators, Santa Fe, NM, May 12-16, 2002.

- W. D. Pointer, et al., "Scaled Experiments and CFD Simulations Supporting the Design of the Spallation Neutron Source Mercury Target," Proceedings of the 2000 International Mechanical Engineering Congress & Exposition, Orlando, FL, 2000.
- W. D. Pointer, and A. E. Ruggles, Preliminary Performance Evaluation Of Vessel Integrity Monitoring System For Water-Cooled Vacuum Vessels In Cold Neutron Source Applications, Proceedings of the 6th International Conference on Nuclear Engineering (ICONE-6), San Diego, CA, 1998.

Summaries, Abstracts, and Other Publications

- V. Mahadevan, E. Merzari, R. Jain, A. Obabko, M. Smith, T. Tautges, P. Fischer, W. D. Pointer, R. Ferencz, "SHARP Fuel Assembly Coupled Simulation Demonstrations," Transactions of the American Nuclear Society, 109, November 2013.
- W. D. Pointer, "The Next Generation Nuclear Engineer: A Vision for a New Era of Computer Aided Engineering," Proceedings of the 2013 International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering, Sun Valley, ID, May 2013.
- T.K. Kim, W.D. Pointer, T.H. Bauer, and A.E. Wright, "Fission Gas Venting for Ultra-high Burnup SFR Metallic Fuel Pin Design," Transactions of the American Nuclear Society, 106, June 2012.
- W. D. Pointer, J. Thomas and P. Nardone, "CFD Predictions of Gap Bypass in Prismatic VHTR Cores," Transactions of the American nuclear Society, 103, October 2010.
- E. Merzari, J. G. Smith, and W.D. Pointer," Hydrodynamic analysis of different spacing strategies for a tight-lattice SFR bundle", Transaction of the American nuclear Society, 103, October 2010.
- W. D. Pointer, J. Smith, P. Fischer and A. Siegel, "Application of CFD Methods to Advanced Liquid Metal Cooled Fast Reactor Design & Safety Analysis" Proceedings of Star America Users Conference, Dearborn, MI, June 23, 2008.
- W. D. Pointer, et al., "Eulerian Two-Phase Boiling Model Development for Boiling Water Reactor Fuel Assembly Applications" Transactions of the American Nuclear Society, v. 94, Albuquerque, NM, November 2006
- T. Sofu, Y. Gohar and D. Pointer, "Thermal-hydraulic analysis of electron targets for neutron generation in a subcritical system," Transactions of the American Nuclear Society, v 94, Albuquerque, NM, November 2006
- W. D. Pointer, J. Polonscik, J. Herceg, J. Saiveau, C. Grandy, "Simplification of System Design through Optimization of Fluid Dynamic Characteristics of a 300 MWe Advanced Fast Reactor (AFR-300)," Transactions of the American Nuclear Society, v. 87, Washington, DC, November 2002.
- H.-M. Unger, W. D. Pointer, Y. Gohar, J. Herceg, J. Saiveau, J. Roglans, X. Cheng, "Parametric Evaluations using Computational Fluid Dynamics for Development of a Liquid Sodium Cooled Spallation Neutron Source," Transactions of the American Nuclear Society, v. 87, Washington, DC, November 2002.
- W. D. Pointer and T. Sofu, "An Assessment of Commercial CFD Software for Simulation of Natural Convection," Transactions of the American Nuclear Society, v. 85, Reno, NV, November 2001.
- W. D. Pointer, A. Ruggles, M. Wendel, J. Crye, "Investigation of Flow Asymmetry and Instability in the Liquid Mercury Target of the Spallation Neutron Source," Transactions of the American Nuclear Society, v. 82, San Diego, CA, 2000.
- J. J. Carbajo, G. L. Yoder, W. D. Pointer, and V. Ivanov, "LOCA Simulation in a VVER-1000 with MOX Fuel," Transactions of the American Nuclear Society, v. 81, Long Beach, CA, 1999.
- J. J. Carbajo, G. L. Yoder, W. D. Pointer, and V. Ivanov, "VVER-1000 Thermal-Hydraulic Transients Modeled with the RELAP5/MOD3.2 Code," Transactions of the American Nuclear Society, v. 80, Boston, MA, 1999.

- Invited Presentations at Major Conferences and Symposia
- W. D. Pointer, "The Next Generation Nuclear Engineer," Opening Plenary Keynote, 2013 International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C2013), Sun Valley, ID, May 2013
- W. D. Pointer, "The NNR and SHARP," 2009 MeV Summer School Lecture, Idaho Falls, ID, July 24, 2009.
- R. Faibish, D. Pointer, B. Roux, and A. Tentner, "Membrane Analysis and Simulation System," Invited Keynote Presentation, International Congress on Membranes and Membrane Processes, Honolulu, Hawaii, July 12-18, 2008.
- W. D. Pointer, et al., "Fast Reactor Safety Simulation Verification and Validation: Past, Present, and Future," 2008 Verification and Validation Workshop, Idaho Falls, ID, July 23, 2008.

Other Presentations and Symposia

- W. D. Pointer, "Nuclear Energy Advanced Modeling and Simulation," Departmental Seminar, George Washington University, Washington, DC, December 18, 2014.
- W. D. Pointer, "Technical and Program Integration Overview," NEAMS Annual Review Meeting, Washington, DC, December 3, 2014.
- W. D. Pointer, "Advanced Modeling and Simulation for Nuclear Energy: The End of the Era of Experiments?" Nuclear Engineering Seminar, The Ohio State University and University of Cincinnati, November 19, 2014.
- W.D. Pointer, "A Survivor's Guide to Practical Application of CFD to Nuclear Systems," 2015 American Nuclear Society Student Conference, Computational Fluid Dynamics Workshop, College Station, TX, April 8, 2014.
- W.D. Pointer, "Challenges and Opportunities in Thermal Hydraulics for Nuclear Systems," 2nd Annual Two-Phase Flow Workshop, North Carolina State University, May 2, 2013.
- W.D. Pointer, "The Evils of Symmetry and Other Lessons Learned from High-Fidelity Nuclear Energy Simulations," Nuclear Engineering Seminar, North Carolina State University, April 11, 2013.
- W.D. Pointer, "The Evils of Symmetry and Other Lessons Learned from High-Fidelity Nuclear Energy Simulations," Nuclear Engineering Seminar, Iowa State University, March 28, 2013.
- W.D. Pointer, "The Evils of Symmetry and Other Lessons Learned from High-Fidelity Nuclear Energy Simulations," Mechanical Engineering Seminar, George Washington University, February 18, 2012.
- W.D. Pointer, "The Evils of Symmetry and Other Lessons Learned from High-Fidelity Nuclear Energy Simulations," Nuclear Engineering Seminar, Oregon State University, October 18, 2011.
- W.D. Pointer, et al., "US DOE Research on Advanced Modeling and Simulation Tools for Safety Analysis," Central Europe Nuclear Safety Workshop, Prague, Czech Republic, October 10-13 2011
- W. D. Pointer, et al., "NEAMS Reactor IPSC FY12 Planning Package," NEAMS PMT Meeting, Denver, CO, July 12, 2011.
- W. D. Pointer, et al., "NEAMS Reactor IPSC," ARC Working Group Summer Meeting, Argonne National Laboratory, June 15, 2011.
- W. D. Pointer, et al., "NEAMS Reactor IPSC," NEAMS Capability Transfer Workshop, Chattanooga, TN, April 4-5, 2011.
- W. D. Pointer, et al. "SHARP Challenge Problems," NEAMS Winter Project Management Team Meeting, Las Vegas Marriott, Las Vegas, NV, January 26-27, 2011.
- W. D. Pointer, et al., "The SHARP project: A Transformational Approach to Advanced Reactor Design," Technical Meeting on the Use of CFD for Design of Advanced Water Cooled Reactors, IAEA, Vienna, Austria, Dec. 10, 2010

- P. Fischer, W. D. Pointer, E. Merzari, A. Obabko, J. Smith, S. Kerkemeier "Advances in SHARP thermal hydraulics modeling, verification, and validation," NEAMS Fall Principal Investigators Meeting, Washington, DC, October 18-20, 2010.
- W. D. Pointer, "Advanced Nuclear Engineering Simulations and the Future of Reactor Design," 2009 American Nuclear Society Student Conference, Thermal Hydraulics Session Keynote Address, April 4, 2009.
- W. D. Pointer, "Advanced Nuclear Engineering Simulations and the Future of Reactor Design," University of Wisconsin Engineering Physics Department Colloquium, October 28, 2008.
- D. Pointer and A. Tentner, "Recent Results from CFD Modeling for Exercise I-2 using the STAR-CD Code," presented to OECD/, NRC Benchmark based on NUPEC BWR Full-size Bundle Test Fifth Workshop – BFBT5, hosted by GRS, Garching, Germany, March 31-April 1, 2008.
- D. Pointer, M. Farmer, S. Lomperski, C. Tzanos, R. Vilim and T. Wei, "Needs: CFD Analyses of Flow in Cavities," CFD Seminar: Requirements & Capabilities For CFD Analysis Of Reactors, November 6, 2007, Idaho Falls, ID
- W. D. Pointer, et al. "Bench Top Experiments for NGNP Thermal Hydraulic Method Validation," Joint INL-NRC Meeting on NGNP, April 22, 2008
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