

# JAMES PAUL HOLLOWAY

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## MAJOR ADMINISTRATIVE APPOINTMENTS

07/2019 – PRESENT

### **Provost And Executive Vice President For Academic Affairs, UNIVERSITY OF NEW MEXICO**

Oversee academic activities at a flagship R1 public university, including faculty affairs, student affairs, research, branch campuses, and budgeting for these units. Major direct reports include deans of 11 schools/colleges, 4 branch campus chancellors, VP for research, VP for student affairs, VP for enrollment management, AVP for Academic Resource Management, university secretary, institutional analytics, industrial security (classified research), senior vice provost, two associate vice provosts. Key advisors include faculty senate president, staff council president, undergraduate and graduate student body presidents, and vice president for diversity, equity, and inclusion.

07/2016 – 06/2019

### **VICE PROVOST FOR GLOBAL ENGAGEMENT & INTERDISCIPLINARY ACADEMIC AFFAIRS, UNIVERSITY OF MICHIGAN**

Foster interdisciplinary scholarship and learning across the university, including sustainability, poverty alleviation, Detroit engagement, and address emergent university needs including accreditation. Support engaged experiential learning on and off campus, domestically and internationally. Serve as Senior International Officer and identify and support strategic global engagement platforms.

07/2013 – 06/2016

### **VICE PROVOST FOR GLOBAL AND ENGAGED EDUCATION, UNIVERSITY OF MICHIGAN**

Encourage and give coherence to engaged, action-based learning at the university, including by leading the Transforming Learning for the Third Century initiative. Serve as Senior International Officer and provide strategic vision for engagement in specific regions (China, India, Ethiopia).

07/2007 – 06/2013

### **ASSOCIATE DEAN FOR UNDERGRADUATE EDUCATION, COLLEGE OF ENGINEERING, UNIVERSITY OF MICHIGAN**

Make experiential learning the norm for engineering students through student projects, international experiences, and entrepreneurship education. Develop capacity for engineering education research. Oversee overall college curriculum and open it up for students to pursue humanities, social sciences, arts, and other creative pursuits as part of their engineering education. Build bridges with the arts and creative disciplines.

## EDUCATION

01/1989 PH. D. IN ENGINEERING PHYSICS, UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE, VA

06/1985 CERTIFICATE IN ADVANCED STUDY IN MATHEMATICS, CAMBRIDGE UNIVERSITY, ENGLAND

05/1984 M.S. IN NUCLEAR ENGINEERING, UNIVERSITY OF ILLINOIS, URBANA, IL

01/1982 B.S. IN NUCLEAR ENGINEERING, UNIVERSITY OF ILLINOIS, URBANA, IL

## ACADEMIC APPOINTMENTS

- 07/2019 – PRESENT PROFESSOR OF NUCLEAR ENGINEERING, UNIVERSITY OF NEW MEXICO
- 07/2019 – PRESENT PROFESSOR EMERITUS OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCES AND ARTHUR F. THURNAU PROFESSOR EMERITUS, UNIVERSITY OF MICHIGAN
- 09/2007 – 06/2019 ARTHUR F. THURNAU PROFESSOR, UNIVERSITY OF MICHIGAN
- 09/2005 – 06/2019 PROFESSOR OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCES, UNIVERSITY OF MICHIGAN
- 09/1996 – 08/2005 ASSOCIATE PROFESSOR OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCES, UNIVERSITY OF MICHIGAN
- 05/1996 – 07/1996 GUEST SCIENTIST, INSTITUT FUR REAKTORSICHERHEIT, FORSCHUNGSZENTRUM KARLSRUHE, TECHNIK UND UMWELT
- 01/1990 – 08/1996 ASSISTANT PROFESSOR OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCES, UNIVERSITY OF MICHIGAN
- 01/1989 – 12/1989 ASSISTANT RESEARCH PROFESSOR OF APPLIED MATHEMATICS AND ENGINEERING PHYSICS, UNIVERSITY OF VIRGINIA

## OTHER PROFESSIONAL POSITIONS

- 12/2021 – PRESENT INNOVATE ABQ ADVISORY BOARD  
University of New Mexico innovation district board
- 07/2019 – PRESENT WESTERN ACADEMIC LEADERSHIP FORUM EXECUTIVE COMMITTEE (WICHE)
- 07/2019 – PRESENT LOBO DEVELOPMENT CORPORATION BOARD OF DIRECTORS  
University of New Mexico affiliated entity responsible for development of university owned real estate for the benefit of UNM
- 07/2019 – PRESENT LOBO RAINFOREST INNOVATIONS BOARD OF DIRECTORS, VICE CHAIR & EXECUTIVE COMMITTEE  
University of New Mexico affiliated entity focused on licensing, start-ups, and economic development based on UNM IP and expertise
- 07/2018 – PRESENT PLAKSHA UNIVERSITY ACADEMIC ADVISORY BOARD  
Advisor to new technology focused university in Punjab, India
- 01/2020 – 04/2023 JUDICIAL EDUCATION TRAINING ADVISORY COMMITTEE  
Appointed by Order of the Supreme Court of New Mexico. Advises on programs for training of magistrates, judges, and elected judicial officials in New Mexico
- 11/2014 – 06/2019 WILLIAM DAVIDSON INSTITUTE BOARD  
Guided institute focused on using market-based approaches to drive economic development and improve social welfare in low and middle-income countries
- 07/2007 – 06/2019 UM-SJTU JOINT INSTITUTE ACADEMIC PROGRAMS GROUP  
Executive Committee member for English language engineering college at Shanghai Jiao Tong University, Shanghai China
- 2011 INTERIM DIRECTOR, WILSON STUDENT TEAM PROJECT CENTER, UNIVERSITY OF MICHIGAN
- 2009 – 2013 EDITOR-IN-CHIEF, TRANSPORT THEORY AND STATISTICAL PHYSICS, TAYLOR & FRANCIS  
Took over editorship of struggling academic journal and turned it around

## ACADEMIC HONORS AND AWARDS

- 2022 HONORARY MEMBER OF THE NATIONAL ACADEMY OF INVENTORS IN RECOGNITION OF SUPPORT FOR INVENTION AND ECONOMIC DEVELOPMENT.
- 2014 TED KENNEDY FAMILY TEAM EXCELLENCE AWARD, UNIVERSITY OF MICHIGAN  
PRODUCTION OF AN EXTRAORDINARY AND SIGNIFICANT PIECE OF WORK FROM CURRENT OR RECENT COLLABORATION IN TEACHING OR RESEARCH AT THE COLLEGE OF ENGINEERING – AWARDED FOR THE WORK OF THE CRASH CENTER (CENTER FOR RADIATIVE SHOCK HYDRODYNAMICS)
- 2011 HAROLD R. JOHNSON DIVERSITY SERVICE AWARD, UNIVERSITY OF MICHIGAN
- 2007 NAMED ARTHUR F. THURNAU PROFESSOR, THE UNIVERSITY OF MICHIGAN’S HIGHEST RECOGNITION FOR OUTSTANDING CONTRIBUTIONS TO UNDERGRADUATE EDUCATION
- 2005 COMMITTEE ON INSTITUTIONAL COOPERATION ACADEMIC LEADERSHIP PROGRAM FELLOW
- 2004 NUCLEAR ENGINEERING & RADIOLOGICAL SCIENCES ALPHA NU SIGMA FACULTY TEACHING AWARD (THIS IS AWARDED BY VOTE OF THE STUDENTS OF THE DEPARTMENT.)
- 2004 NUCLEAR ENGINEERING & RADIOLOGICAL SCIENCES OUTSTANDING ACHIEVEMENT AWARD
- 2001 UNIVERSITY OF MICHIGAN ASEE STUDENT CHAPTER ANNUAL DISTINGUISHED LECTURER
- 2000 AMERICAN NUCLEAR SOCIETY YOUNG MEMBER ENGINEERING ACHIEVEMENT AWARD
- 2000 ALPHA NU SIGMA FACULTY TEACHING AWARD
- 1997 DEPARTMENT OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCES SERVICE AWARD
- 1996 ALPHA NU SIGMA MICHIGAN ALPHA OUTSTANDING FACULTY MEMBER AWARD
- 1994 1938E AWARD: UNIVERSITY OF MICHIGAN COLLEGE OF ENGINEERING AWARD FOR EXCELLENCE IN TEACHING AND STUDENT MENTORING
- 1993 - 1998 NATIONAL SCIENCE FOUNDATION YOUNG INVESTIGATOR
- 1993 DEPARTMENT OF NUCLEAR ENGINEERING TEACHING AWARD/ALPHA NU SIGMA OUTSTANDING FACULTY MEMBER AWARD
- 1989 ALLAN TALBOTT GWATHMEY MEMORIAL AWARD  
UNIVERSITY OF VIRGINIA’S AWARD FOR OUTSTANDING EVIDENCE OF RESEARCH ABILITY IN A FUNDAMENTAL PROBLEM OF THE PHYSICAL SCIENCES

## MISCELLANEOUS POSITIONS

- 1985 – 1989 GRADUATE RESEARCH ASSISTANT, UNIVERSITY OF VIRGINIA
- 1982 – 1984 GRADUATE RESEARCH ASSISTANT, UNIVERSITY OF ILLINOIS
- 1980 – 1982 AUDIO CENTER – PATRON SERVICE & EQUIPMENT MAINTENANCE, UNIVERSITY OF ILLINOIS
- 1980 UNITED STATES CENSUS TELEPHONE ASSISTANT
- 1979 RESEARCH ASSISTANT, DEPT OF ECONOMIC ENTOMOLOGY  
Soybean Insect Research Program, Citation Searching
- 1978 SECURITY GUARD, SMITHSONIAN INSTITUTION, NATIONAL AIR & SPACE MUSEUM

## RESEARCH FIELDS

Neutron and photon radiation transport theory, uncertainty quantification, nuclear reactor physics and control, nonlinear dynamics, inverse problems, plasma kinetic theory, applied mathematical analysis, computational physics and engineering, appropriate technology development.

## PUBLICATIONS

### *Books and Book Chapters:*

James Paul Holloway, *A Brief History of Arthur F. Thurnau*, University of Michigan, Ann Arbor, MI, 2009.

James Paul Holloway. *Introduction to Engineering Programming*. John Wiley & Sons, New York, 2004. (ISBN 0-471-20215-0)

*Symposium on Energy and the Environment: The Role of Nuclear Power*, James Paul Holloway and John C. Lee, Eds, Proceedings of a Symposium, October 2-4, 2002. DEStech Publications, Lancaster PA, 2003.

J. J. Dorning, William J. Decker and James Paul Holloway. "Controlling the Dynamics of Chaotic Convective Flows," *Applied Chaos*, J. H. Kim (Ed.), John Wiley & Sons, New York, 1992. Chapter 7.

### *Refereed Archival Journals:*

1. R. V. Duncan, James P. Holloway, & Richard Lange, "The Emergence and Impact of Regional Research University Collaborations: The Rapidly Changing Landscape in University Research and Innovation," to appear: *Technology and Innovation*, 2023.
2. L. Sanchez-Parkinson, N. Moses, G. Bureson, S. Daly, J. Holloway, A. Conger, K. Sienko, & L. Meadows, "Intercultural Experiences of Engineering Students During Immersive Design Projects," *International Journal for Service Learning in Engineering, Humanitarian Engineering and Social Entrepreneurship*, **18**, pp 35-51 (2023).
3. J. R. Fein, J. P. Holloway, M. R. Trantham, P. A. Keiter, D. H. Edgell, D. H. Froula, D. Habbergerger, Y. Frank, M. Fraenkel, E. Raicher, D. Shvarts, and R. P. Drake, "Mitigation of hot electrons from laser-plasma instabilities in high-Z, highly ionized plasmas," *Physics of Plasmas*, **24** (2017) (<http://dx.doi.org/10.1063/1.4978625>).
4. J. R. Fein, P. A. Keiter, J. P. Holloway, S. R. Klein, J. S. Davis and R. P. Drake, "Mitigation of hard x-ray background in backlit pinhole imagers," *Reviews of Scientific Instruments*, **87**, 11E341 (2016) (<http://dx.doi.org/10.1063/1.4962192>).
5. A. Chakraborty, D. Bingham, S. S. Dhavala, C. C. Kuranz, R. P. Drake, M. J. Grosskopf, E. Rutter, B. R. Torralva, J. P. Holloway, R. G. McClarren and B. K. Mallick, "Emulation of Numerical Models with Over-specified Basis Functions," *Technometrics* DOI: 10.1080/00401706.2016.1164078 (2016).
6. Robert B. Gramacy, Derek Bingham, James Paul Holloway, Michael J. Grosskopf, Carolyn C. Kuranz, Erica Rutter, Matt Trantham, R. Paul Drake, "Calibrating a large computer experiment simulating radiative shock hydrodynamics," *The Annals of Applied Statistics*, **9**, pp 1141–1168 (<http://dx.doi.org/10.1214/15-AOAS850>) (2015).
7. J. R. Fein, J. L. Peebles, P. A. Keiter, J. P. Holloway, S. R. Klein, C. C. Kuranz, M. J.-E. Manuel, R. P. Drake, "Investigation of the hard x-ray background in backlit pinhole imagers," *Reviews of Scientific Instruments*, **85**, 11E610 (2014) (<http://dx.doi.org/10.1063/1.4891051>).
8. C. C. Kuranz, R. P. Drake, C. M. Krauland, D. C. Marion, M. J. Grosskopf, E. Rutter, B. Torralva, J. P. Holloway, D. Bingham, J. Goh, T. R. Boehly and A. T. Sorce, "Initial conditions of radiative shock experiments," *Physics of Plasmas*, **20**, 056321 (2013) (<http://dx.doi.org/10.1063/1.4805021>).
9. Joslin Goh, Derek Bingham, James Paul Holloway, Michael J. Grosskopf, Carolyn C. Kuranz, Erica Rutter, "Prediction and Computer Model Calibration Using Outputs From Multi-fidelity Simulators," *Technometrics*, **55** pp 501-512 (2013).
10. Pritam Ranjan, Wilson Lu, Derek Bingham, Shane Reese, Brian J. Williams, Chuan-Chih Chou, Forrest Doss, Michael Grosskopf, James Paul Holloway, "Follow-up Experimental Designs for Computer Models and Physical Processes," *Journal of Statistical Theory and Practice*, **5**, 119–136 (2011). doi:10.1080/15598608.2011.10412055
11. Jeremy Lloyd Conlin and James Paul Holloway, "Monte Carlo Application of Arnoldi's Method for Acceleration of Eigenvalue and Fission Source Convergence," *Nuclear Science and Engineering*,

169, 168–177 (2011).

12. B. van der Holst, G. Toth, I.V. Sokolov, K.G. Powell, J.P. Holloway, E.S. Myra, Q. Stout, M.L. Adams, J.E. Morel, R.P. Drake, “Crash: A Block-Adaptive-Mesh Code for Radiative Shock Hydrodynamics - Implementation and Verification,” *The Astrophysical Journal Supplement Series*, **194:23** (2011). doi:10.1088/0067-0049/194/2/23
13. R.P. Drake, F.W. Doss, R.G. McClarren, M.L. Adams, N. Amato, D. Bingham, C.C. Chou, C. DiStefano, K. Fidkowsky, B. Fryxell, T.I. Gombosi, M.J. Grosskopf, J.P. Holloway, B. van der Holst, C.M. Huntington, S. Karni, C.M. Krauland, C.C. Kuranz, E. Larsen, B. van Leer, B. Mallick, D. Marion, W. Martin, J.E. Morel, E.S. Myra, V. Nair, K.G. Powell, L. Raushberger, P. Roe, E. Rutter, I.V. Sokolov, Q. Stout, B.R. Torralva, G. Toth, K. Thornton, A.J. Visco, “Radiative Effects in Radiative Shocks in Shock Tubes,” *High Energy Density Physics*, **7**, 130-140 (2011).
14. James Paul Holloway, Derek Bingham, Chuan-Chih Chou, Forrest Doss, R. Paul Drake, Bruce Fryxell, Michael Grosskopf, Bart van der Holst, Bani K. Mallick, Ryan McClarren, Ashin Mukherjee, Vijay Nair, Kenneth G. Powell, D. Ryu, Igor Sokolov, Gabor Toth, Zhanyang Zhang, “Predictive Modeling of a Radiative Shock System,” *Reliability Engineering and System Safety*, doi:10.1016/j.ress.2010.08.011 (2011) **(Invited)**.
15. Ryan G. McClarren, D. Ryu, R. Paul Drake, Michael Grosskopf, Derek Bingham, Chuan-Chih Chou, Bruce Fryxell, Bart van der Holst, James Paul Holloway, Carolyn C. Kuranz, Bani K. Mallick, Erica Rutter, Ben R. Torralva, “A Physics Informed Emulator for Laser-Driven Radiating Shock Simulations,” *Reliability Engineering and System Safety*, doi:10.1016/j.ress.2010.08.011 (2011) **(Invited)**.
16. Ryan McClarren, R. Paul Drake, J. E. Morel & James Paul Holloway, “Theory of radiative shocks in the mixed, optically thick-thin case,” *Physics of Plasmas*, **17**(9), 093301 (2010).
17. Ryan G. McClarren, James Paul Holloway, “A Quasi-Linear Implementation of High-Resolution Time Integration for the  $P_n$  Equations,” *Nuclear Science and Engineering*, **159**, 330-337 (2008).
18. Ryan G. McClarren, James Paul Holloway and Thomas A. Brunner, “Analytic  $P_1$  solutions for time-dependent thermal radiative transfer in several geometries,” *Journal of Quantitative Spectroscopy and Radiative Transfer*, **109**, 389-403 (2008).
19. Ryan G. McClarren, James Paul Holloway and Thomas A. Brunner, “On solutions to the  $P_n$  equations for thermal radiative transfer,” *Journal of Computational Physics*, **227**, 2864-2885 (2008).
20. Ryan G. McClarren, James Paul Holloway, Thomas A. Brunner and Thomas A. Mehlhorn, “A Quasi-Linear Implicit Riemann Solver for the Time-Dependent  $P_n$  Equations,” *Nuclear Science and Engineering*, **155**, 290-299 (2007). **(Invited)**
21. Shannon M. Bragg Sitton and James Paul Holloway, “Autonomous reactor control using model based predictive control for space propulsion applications,” *Annals of Nuclear Energy*, **33**, 1368–1378, (2006)
22. David P. Griesheimer, William R. Martin and James Paul Holloway, “Convergence Properties of Monte Carlo Functional Expansion Tallies,” *Journal of Computational Physics*, **211**, 129–153 (2006).
23. David P. Griesheimer, William R. Martin and James Paul Holloway, “Estimation of flux distributions with Monte Carlo functional expansion tallies,” *Radiation Protection Dosimetry*, 115 pp 428-432 (2005)
24. Thomas Brunner and James Paul Holloway, “Two-Dimensional Time Dependent Riemann Solvers For Neutron Transport,” *Journal of Computational Physics*, **210**, 386-399 (2005).
25. Scott Sepke, Y.Y. Lau, James Paul Holloway and Donald Umstadter, “Thomson scattering and ponderomotive intermodulation within standing laser beat waves in plasma,” *Physical Review E*, **72**, 026501, (2005). (Paper selected to appear in the Virtual Journal of Ultrafast Science).
26. Corey Collard, James Paul Holloway and M. L. Brake, “RF Plasma Conditions for Growth of Carbon

- Nanostructures," *IEEE Transactions on Plasma Science*, **33**, 170-175 (2005).
27. S. P. Song, M. A. Crimp, V. M. Ayres, C. J. Collard, J. P. Holloway, and M. L. Brake, "New Hetero Silicon-Carbon Nanostructure Formation Mechanism," *Journal of Nanoscience and Nanotechnology*, **4**, No. 7, 817-823 (2004).
  28. James Paul Holloway and Hatice Akkurt, "The fixed point formulation for large sample PGNAA—Part 1: Theory," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **522**, 529-544 (2004).
  29. Hatice Akkurt, James Paul Holloway and L. E. Smith, "The fixed point formulation for large sample PGNAA—Part 2: Experimental Demonstration," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **522**, 545-557 (2004).
  30. Bruce Wayne Patton and James Paul Holloway, "Application of Preconditioned GMRES to the Numerical Solution of the Neutron Transport Equation," *Annals of Nuclear Energy*, **29**, 109-136 (2002).
  31. Thomas Brunner and James Paul Holloway, "One-Dimensional Riemann Solvers and the Maximum Entropy Closure," *Journal of Quantitative Spectroscopy and Radiative Transfer*, **69**, 543-566 (2001).
  32. James Paul Holloway, Steve Shannon, Scott M. Sepke and M. L. Brake, "A Reconstruction Algorithm for a Spatially Resolved Plasma Optical Emission Spectroscopy Sensor," *Journal of Quantitative Spectroscopy and Radiative Transfer*, **68**, 101-115 (2001).
  33. Corey Collard, Steve Shannon, James Paul Holloway and Mary L. Brake, "Optical Emission Reference Data for the GEC Reference Cell," *IEEE Transactions on Plasma Science*, **28**, 2187-2193 (2000).
  34. Steven Shannon, James Paul Holloway and M. L. Brake, "Spatially Resolved Fluorine Actinometry," *Journal of Vacuum Science and Technology*, **17**, 2703-2708 (1999).
  35. D. Stuenkel, James Paul Holloway and G. F. Knoll, "Neutron Spectrum Unfolding Using a Modified Truncated Singular Value Decomposition Method," *Nuclear Science and Engineering*, **132**, 261-272 (1999).
  36. Brian Guthrie, James Paul Holloway and Bruce W. Patton, "GMRES as a MultiStep Transport Sweep Accelerator," *Transport Theory and Statistical Physics*, **28**, 83-102 (1999).
  37. A. Ziya Akcasu and James Paul Holloway, "Fokker-Planck Description of Particle Transport in Finite Media: Boundary Conditions," *Physical Review E*, **58**, 4321- 4331 (1998).
  38. Joseph W. Schumer and James Paul Holloway, "Vlasov Simulations Using Velocity-Scaled Hermite Representations," *Journal of Computational Physics*, **144**, 626-661 (1998).
  39. Steve Shannon, James Paul Holloway, Kirk Flippo and M. L. Brake, "A New Spatially Resolved Optical Emission Sensor for Plasma Etch Monitoring," *Applied Physics Letters*, **71**, 1467-1468 (1997).
  40. A. Ziya Akcasu and James Paul Holloway, "Fokker-Planck Description of Electron and Photon Transport in Homogeneous Media," *Physical Review E*, **55**, 6753-6764 (1997).
  41. James Paul Holloway, "On Numerical Methods for Hamiltonian PDEs and a Collocation Method for the Vlasov-Maxwell Equations," *Journal of Computational Physics*, **129**, 121-133 (1996).
  42. M.J. Buie, J.T. Pender, J.P. Holloway and M.L. Brake, "In Situ Sensor of Spatially Resolved Optical Emission," *IEEE Transactions on Plasma Science*, **24**, 111-112 (1996).
  43. M.J. Buie, J.T.P. Pender, J.P. Holloway, T. Vincent, P.L.G. Ventzek and M.L. Brake, "Abel's Inversion Applied to Experimental Spectroscopic Data with Off Axis Peaks," *Journal of Quantitative Spectroscopy and Radiation Transfer*, **55**, 231 - 243 (1996).
  44. James Paul Holloway, "Spectral Velocity Discretizations for the Vlasov-Maxwell Equations," *Transport Theory and Statistical Physics*, **25**, 1-32 (1996).

45. Gregory Wojtowicz and James Paul Holloway, "Variationally Derived Coarse Mesh Methods Based On An Alternative Flux Representation," *Nuclear Science and Engineering*, **121**, 89-102 (1995). (Invited)
46. J. Pender, M. Buie, T. Vincent, J. Holloway, M. Elta and M. L. Brake, "Radial Optical Emission Profiles of Radio Frequency Glow Discharges," *Journal of Applied Physics*, **74**, 3590-3592 (1993).
47. Stephen B. Swanekamp, James Paul Holloway, Terry Kammash and Ronald M. Gilgenbach. "The Theory and Simulation of Relativistic Electron Beam Transport in the Ion-Focused Regime," *Physics of Fluids B*, **4**, 1332-1348 (1992).
48. James Paul Holloway and J. J. Dorning. "Undamped Plasma Waves," *Physical Review A*, **44**, 3856-3868 (1991).
49. Lucio Demeio and James Paul Holloway. "Numerical Simulations of BGK Modes," *Journal of Plasma Physics*, **46**, 63-84 (1991).
50. James Paul Holloway and J. J. Dorning. "Undamped Longitudinal Plasma Waves," *Physics Letters A*, **138**, 279-284 (1989).
51. James Paul Holloway and J. J. Dorning. "The Dynamics of Coupled Nonlinear Model Boltzmann Equations," *Journal of Statistical Physics*, **49**, 607-660 (1987).
52. James Paul Holloway and James F. Stubbins. "Thermodynamics of Multiphase Systems: A Treatment of Closed Systems with Homogeneous Free-Energy Functions," *Philosophical Magazine*, **52**, 475-491, (1985).
53. James Paul Holloway and James F. Stubbins. "Application of Constrained Equilibrium Thermodynamics to Irradiated Alloy Systems," *Journal of Nuclear Materials*, **122**, 591-596, (1984).
54. James F. Stubbins and James Paul Holloway. "Thermionic Diode Materials Selection and Performance for Fusion Reactor Power Applications," *Journal of Nuclear Materials*, **122**, 858-863, (1984).

#### *Selection of Refereed Conference Papers:*

1. Laura Sanchez-Parkinson, Shanna R. Daly, James Paul Holloway, Amy J. Conger, Kathleen H. Sienko, Lorelle Meadows, "Mapping Student Development in Culturally Contextualized Design" *Proceedings of the 122<sup>nd</sup> ASEE Annual Conference and Exposition*, Seattle, AW, June 2015 (10.18260/p.24468).
2. J. Tiberius Morán-López, Oleg Schilling, James P. Holloway, "Reynolds-Averaged Navier–Stokes Modeling of Reshocked Richtmyer–Meshkov Instability Experiments and Simulations" in *29th International Symposium on Shock Waves*, Riccardo Bonazza and Devesh Ranjan, Editors, Vol 2, pp 1047-1052 (2015).
3. Jeffrey R. Fein, James Paul Holloway, C. C. Kuranz, Uncertainty quantification and sensitivity analysis of backlit x-ray radiographs, IEEE International Conference on Plasma Science December 2012, DOI: 10.1109/PLASMA.2013.6633438.
4. Shanna Daly, Harvey Bell, Brian Gilchrist, Gail Hohner, James Paul Holloway, "Making a College-Level Multidisciplinary Design Program Effective and Understanding the Outcomes," *Proceedings of the Annual Meeting of the American Society of Engineering Education* (2011).
5. Bulent Alpay and James Paul Holloway, "Utilizing degradation monitoring for operational risk assessment," International Topical Meeting on Probabilistic Safety Assessment and Analysis 2011, PSA 2011, pp 107-120 (2011).
6. Jesse R. Cheatham, William R. Martin, & James Paul Holloway, "Spatial Discretization Error Reduction in Thermal Radiative Transfer," *Transactions of the American Nuclear Society*, **102**, 222–223, American Nuclear Society, LaGrange Park, IL (2010).
7. Jesse R. Cheatham, James Paul Holloway, & William R. Martin, "Physics-Based Time Step Controller Improvements in Thermal Radiative Transfer," *Transactions of the American Nuclear Society*, **102**, 224–226, American Nuclear Society, LaGrange Park, IL (2010).

8. Amy J. Conger, Brian Gilchrist, James Paul Holloway, Aileen Huang-Saad, Volker Sick & Thomas H. Zurbuchen, "Experiential Learning Programs for the Future of Engineering Education," *Proceedings of the IEEE Transforming Engineering Education Conference*, April 6-9, 2010, Dublin, Ireland.
9. Jessica Brakora, Brian Gilchrist, James Paul Holloway, Nilton Renno, Steven Skerlos, Toby Teorey, Peter Washabaugh, & Daryl Weinert, "Integrating Real-World Experience into a College Curriculum Using a Multidisciplinary Design Minor," *Proceedings of the ASEE Annual Conference and Exposition*, Austin, TX, June 2009, (AC 2009-2282).
10. R.P. Drake, F.W. Doss, B. Fryxell, M.J. Grosskopf, J.P. Holloway, B. van der Holst, C.M. Huntington, C.C. Kuranz, E.S. Myra, V.N. Nair, K.G. Powell, I.V. Sokolov, Q.F. Stout, G. Toth, A.J. Visco, A.J. Visco, M.L. Adams, J.E. Morel, B. Mallick, D. Bingham, "Using High Power Lasers to Create Radiative Shock Waves," *2009 Lasers & Electro-optics & The Pacific Rim Conference on Lasers and Electro-optics*, 1 & 2, 317-318, 2009.
11. R.P. Drake; F.W. Doss; B. Fryxell; M.J. Grosskopf; J.P. Holloway; B. Van Der Holst; C. Huntington; C.C. Kuranz; E.S. Myra; V.J. Nair; K.G. Powell; I.V. Sokolov; Q.F. Stout; G. Toth; A.J. Visco; M.L. Adams; J.E. Morel; D. Bingham, "Challenges to understanding radiative shocks", IEEE International Conference on Plasma Science. 2009
12. J. L. Conlin & James Paul Holloway, "Second order approximations for spatial discretization in Arnoldi's method for monte carlo criticality calculations," *Transactions of the American Nuclear Society*, **101**, 441-443, American Nuclear Society, LaGrange Park, IL (2009).
13. Kyeong Sam Oh & James Paul Holloway, "Nonlinear  $P_1$  closure for rapid transients in radiation transport," *Transactions of the American Nuclear Society*, **101**, American Nuclear Society, LaGrange Park, IL (2009).
14. Jeremy Lloyd Conlin & James Paul Holloway, "Relaxation scheme for Monte Carlo explicitly restarted Arnoldi's method for criticality calculations," *International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009)*, Saratoga Springs, New York, May 3-7, 2009, American Nuclear Society - International Conference on Mathematics, Computational Methods and Reactor Physics 2009, M and C 2009. 2009;1:295-307.
15. Jesse Cheatham, James Paul Holloway & William R. Martin, "Radiative Transfer with Monte Carlo Predictor-Corrector Methods," *International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009)*, Saratoga Springs, New York, May 3-7, 2009, American Nuclear Society - International Conference on Mathematics, Computational Methods and Reactor Physics 2009, M and C 2009. 2009;3:1647-1660.
16. Stephen Asbury & James Paul Holloway, "Multi-Grid Genetic Algorithms for Space Shield Design," *International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009)*, Saratoga Springs, New York, May 3-7, 2009, American Nuclear Society - International Conference on Mathematics, Computational Methods and Reactor Physics 2009, M and C 2009. 2009;5:3105-3114.
17. Kyeong Sam Oh & James Paul Holloway, "A quasi-static closure for 3<sup>rd</sup> order spherical harmonics time-dependent radiation transport in 2D," *International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009)*, Saratoga Springs, New York, May 3-7, 2009, American Nuclear Society - International Conference on Mathematics, Computational Methods and Reactor Physics 2009, M and C 2009. 2009;3:1938-1948.
18. Jeremy Conlin & James Paul Holloway, "Arnoldi's Method of Minimized Iterations for Monte Carlo Criticality Computations," *Proceedings of PHYSOR 2008*, Interlaken, Switzerland, September 2008.
19. Bulent Alpay & James Paul Holloway, "Degradation monitoring for living PSA applications," American Nuclear Society - International Topical Meeting on Probabilistic Safety Assessment and Analysis, PSA 2008. 1478-1491
20. Bulent Alpay & James Paul Holloway, "Degradation Estimation by Particle Filtering Using Multiple Data Sources," *Transactions of the American Nuclear Society*, **97**, (2007)



21. James Paul Holloway, "Teaching Flux in the Age of Desktop Monte Carlo," Proceedings of the ASEE Annual Conference, June 2007, Honolulu (2007).
22. Bulent Alpay & James Paul Holloway, "Degradation Monitoring in IRIS Steam Generators," Proceedings of M&C 2007: Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications, April 15–19, 2007, Monterey CA, on CD ROM, The American Nuclear Society (2007).
23. James Paul Holloway, "Nonlinear Reactor Control using the Power Derivative in Feedback and Multiple Time-Scale Analysis," Proceedings of M&C 2007: Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications, April 15–19, 2007, Monterey CA, on CD ROM, The American Nuclear Society (2007).
24. Ryan McClarren, James Paul Holloway & Thomas A Brunner, "A  $P_1$  Benchmark for Time Dependent Thermal Radiative Transfer," Proceedings of M&C 2007: Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications, April 15–19, 2007, Monterey CA, on CD ROM, The American Nuclear Society (2007).
25. Ryan McClarren & James Paul Holloway, "High Resolution Time Integration for the Spherical Harmonics Equations," Proceedings of M&C 2007: Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications, April 15–19, 2007, Monterey CA, on CD ROM, The American Nuclear Society (2007).
26. Bulent Alpay and James Paul Holloway, "Degradation estimation by particle filtering using multiple data sources," *Transactions of the American Nuclear Society*, **97**:634-636, (2007).
27. Bulent Alpay and James Paul Holloway, "Improved convergence of a filter for degraded state estimation using multiple data sources," *Transactions of the American Nuclear Society*, **96**:543-544, (2007).
28. Jesse Cheatham, James Paul Holloway and William R. Martin, "Improving Monte Carlo Source Convergence with the Functional Expansion Technique," *Transactions of the American Nuclear Society*, **96**:838-841, (2007).
29. Ryan McClarren, James Paul Holloway & Thomas A Brunner, "An Upwind Spherical Harmonics Method for Thermal X-ray Transfer," *Transactions of the American Nuclear Society*, **95**, (2006)
30. Ryan McClarren, James Paul Holloway, Thomas Brunner and Thomas Mehlhorn, "Implicit Riemann Solvers for the  $P_n$  Equations," *Lecture Notes in Computational Science and Engineering*, **48**, pp 457-467 (2006).
31. Helen Burn & James Paul Holloway, "Why Should I Care? Student Motivation in an Introductory Programming Course," Proceedings of the ASEE Annual Conference, June 2006, Chicago (2006).
32. James Paul Holloway, Shikha Prasad, Natallia Pinchuk & Katie Woch, "Prompt Gamma Emission for Water Prospecting in Martian Regolith," in *Proceedings of the 2006 Symposium on Radiation Measurements* May 23-26, 2006, David Wehe, Ed., pp. 43 (2006).
33. Shikha Prasad, Natallia Pinchuk, Katie Woch & James Paul Holloway, "The Problem of Prompt Gamma Emission for Water Prospecting in Martian Regolith," *Transactions of the American Nuclear Society*, **94**, 583–584 (2006)
34. David P. Griesheimer, Jesse Cheatham, James Paul Holloway & William R. Martin, "Improving Monte Carlo Source Convergence with the Functional Expansion Technique," *Transactions of the American Nuclear Society*, **93**, 461–463, (2005).
35. Bulent Alpay & James Paul Holloway, "Segmenting Space Shields," Proceedings of the Space Nuclear Conference 2005, June 5–9, 2005, San Diego, pages 563–567, on CD ROM, The American Nuclear Society.
36. Ryan McClarren, James Paul Holloway & Thomas Brunner, "Establishing an Asymptotic Diffusion Limit for Riemann Solvers on the Time-Dependent  $P_n$  Equations," Proceedings of M & C 2005: International Topical Meeting on Mathematics and Computation: Supercomputing, Reactor Physics and Nuclear and Biological Applications, September 12–15, 2005, Avignon France, on CD ROM, The American Nuclear Society.

37. Ryan McClarren, James Paul Holloway, Thomas Brunner & Thomas Mehlhorn, "An Implicit Riemann Solver for the Time-Dependent  $P_n$  Equations," Proceedings of M & C 2005: International Topical Meeting on Mathematics and Computation: Supercomputing, Reactor Physics and Nuclear and Biological Applications, September 12–15, 2005, Avignon France, on CD ROM, The American Nuclear Society.
38. David P. Griesheimer, William R. Martin & James P. Holloway, "A Functional Expansion Method for Monte Carlo Eigenvalue Calculations," *The Monte Carlo Method: Versatility Unbounded in a Dynamic Computing World*, Proceedings of the Monte Carlo 2005 Topical, Chattanooga TN, April 17-21 (2005), on CD ROM, The American Nuclear Society.
39. James Paul Holloway, "State Identification in Nonlinear Systems," *Proceedings of Space Technology and Applications International Forum STAIF 2005*, M. El-Genk, Editor, AIP Conference Proceedings. 2005;746:782-790 (2005).
40. Shannon Bragg-Sitton and James Paul Holloway, "Autonomous Reactor Control Using Model Based Predictive Control for Space Propulsion Applications" *Proceedings of Space Technology and Applications International Forum STAIF 2005*, M. El-Genk, Editor, (2005).
41. David P. Griesheimer, William R. Martin & James P. Holloway, "Estimation of Fluence Distributions with Monte Carlo Functional Expansion Tallies," *Proceedings of the 10th International Conference on Radiation Shielding (ICRS-10)*, Madeira, Portugal, May 2004.
42. Hatice Akkurt and James Paul Holloway, "Sensitivity of the Fixed Point Iteration to Neutron Source Spectrum for Large Sample PGNA," *Transactions of the American Nuclear Society*, **90**, 370–372, (2004).
43. Hatice Akkurt and James Paul Holloway, "Sensitivity of the Fixed Point Formulation to Density for Large Sample PGNA," *Transactions of the American Nuclear Society*, **90**, 367–369, (2004).
44. Shannon Bragg-Sitton & James Paul Holloway, "Reactor Start-up and Control Methodologies," *Proceedings of Space Technology and Applications Industrial Forum STAIF 2004*, M. El-Genk, Editor, AIP Conference Proceedings **699**, New York, 614–622, (2004).
45. S. M. Bragg-Sitton and James Paul Holloway, "Consideration of the Space Radiation Environment in Reactor Startup," *Transactions of the American Nuclear Society*, **89**, 913–914, (2003).
46. Hatice Akkurt and James Paul Holloway, "An Existence Proof for a Problem in Prompt Gamma Neutron Activation Analysis," *Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew*, Gatlinburg, TN April 6-11, 2003. On CD-ROM, American Nuclear Society (2003).
47. Bruce W. Patton and James Paul Holloway, "Some remarks on GMRES for Transport Theory," *Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew*, Gatlinburg, TN April 6-11, 2003. On CD-ROM, American Nuclear Society (2003).
48. Scott Sepke, Donald Umstadter, James Holloway, Y.Y. Lau, "Electron Motion and Thomson Scattering of Interfering Counter Propagating High-Intensity Laser Beams" Proceedings of ICENES 2002, 11<sup>th</sup> International Conference on Emerging Nuclear Energy Systems, 29 Sept – 4 Oct, Albuquerque NM, 2002.
49. Sumeet Raj Gopwani, James Paul Holloway and Reuben Sorenson, "Comparison of Spectrum Computations for 14 MeV Neutrons in Lead," *Transactions of the American Nuclear Society*, **87**, 541–542, 2002.
50. Hatice Akkurt, James Paul Holloway, and L. Eric Smith. "Testing the Fixed Point Iteration for Composition Determination of Large Samples Using PGNA," *Transactions of the American Nuclear Society*, **86**, 388-389 (2002).
51. Hatice Akkurt, James Paul Holloway, and L. Eric Smith. "Testing an iteration for prompt gamma composition analysis," *Transactions of the American Nuclear Society*, **85**, 438-440 (2002).
52. James Paul Holloway "Fast Flux Depressions Due to Nonelastic Effects in Lead and Bismuth," Proceedings of the AccApp/ADTTA 2001 Meeting, November 2001, Reno.

53. Jeff Davis, David Griesheimer, Rich Kowalezyk, Ruben Sorenson, James Paul Holloway, and John C. Lee "Cross-Validation of Neutronics Tools for ATW System Design," Proceedings of the AccApp/ADTTA 2001 Meeting, November 2001, Reno.
54. Thomas A. Brunner and James Paul Holloway, "Two-Dimensional Time Dependent Riemann Solvers for Neutron Transport," Proceedings of the 2001 ANS International Meeting on Mathematical Methods for Nuclear Applications, September 2001, Salt Lake City.
55. James Paul Holloway, "Nonelastic Effects on the Fast Neutron Spectrum in Pb 208," Proceedings of the 2001 ANS International Meeting on Mathematical Methods for Nuclear Applications, September 2001, Salt Lake City.
56. James Paul Holloway and Hatice Akkurt, "Some Aspects of the Mathematical Modeling of Prompt Gamma Neutron Activation Analysis," in *Proceedings of Physor 2000*, May 2000.
57. Thomas A. Brunner and James Paul Holloway, "Two Boundary Conditions for Use with the Maximum Entropy Closure and an Approximate Riemann Solver," in *Proceedings of Physor 2000*, May 2000.
58. Thomas A. Brunner, James Paul Holloway and Kenneth G. Powell, "Using an Approximate Riemann Solver with the Maximum Entropy Closure," *Transactions of the American Nuclear Society*, **79**, 128-129, November 1998.
59. Steven C. Shannon, Greg Hebner, James Paul Holloway and Mary L. Brake, "Radial Analysis of a C<sub>2</sub>F<sub>6</sub> Inductively Coupled Plasma Using Optical Emission Spectroscopy and Laser Induced Fluorescence," *Proceedings of the 1998 IEEE International Conference on Plasma Science*, (1998).
60. Thomas A. Brunner, James Paul Holloway and Edward W. Larsen, "On the Use of Maximum Entropy Eddington Factors in Shielding Calculations," *Transactions of the American Nuclear Society*, **77**, 195-196, November 1997.
61. Joseph W. Schumer and James Paul Holloway, "Optimized 1d-1v Vlasov-Poisson Simulations Using a Filtered Fourier-Hermite Spectral Discretization," *Proceedings of the 1996 IEEE International Conference on Plasma Science*, (1996).
62. Steven C. Shannon, Samuela Pollack, James Paul Holloway and Mary L. Brake, "Plasma Tomography Systems for Industrial Plasma Tools," *Proceedings of the 1996 IEEE International Conference on Plasma Science*, (1996).
63. Bruce W. Patton and James Paul Holloway, "Application of Krylov Subspace Iterative Methods to the Slab Geometry Transport Equation," *Advancements and Applications in Radiation Protection and Shielding*, Proceedings of the ANS Topical on Radiation Protection and Shielding, Cape Cod, April 21-25, 1996, **Vol. 1**, pp 384 (1996).
64. James Paul Holloway and Samuela Pollack, "Recovering Plasma Emissivity Using Optical Fibers with Large Acceptance Angle," *IEEE Conference Record – Abstracts*, IEEE International Conference on Plasma Science, June 1995, Madison, Wisconsin, USA, pg 154 (1995).
65. James Paul Holloway, "A Comparison of Three Velocity Discretizations for the Vlasov Equation," *IEEE Conference Record – Abstracts*, IEEE International Conference on Plasma Science, June 1995, Madison, Wisconsin, USA, pg 95 (1995).
66. James Paul Holloway, "The Asymmetric Hermite Method for the Velocity Dependence of the Vlasov Equation" *Transactions of the American Nuclear Society*, **72**, pp. 154-155 (1995).
67. James Paul Holloway, Edward W. Larsen and Gregory Wojtowicz, "New Exact Solutions of the Neutron Transport Equation For Periodic Lattices," *Transactions of the American Nuclear Society*, **72**, pp. 156-157 (1995).
68. Gregory Wojtowicz, James Paul Holloway, and Edward W. Larsen, "New Trial Functions for Reactor Lattice Calculations," *Transactions of the American Nuclear Society*, **72**, pp. 157-158 (1995).
69. Gregory Wojtowicz and James Paul Holloway, "Variationally Derived Coarse Mesh Methods

- Using An Alternative Flux Representation," in *Proceedings of the 1995 International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses*, April 30-May 4, Portland, Oregon, pp. 773-781 (1995).
70. James Paul Holloway and Greg Wojtowicz, "Spectral and finite element techniques employing an alternative lattice representation," *Transactions of the American Nuclear Society*, **71**, pp. 242-244 (1994). (Invited).
  71. James Paul Holloway, "Spectral collocation, domain decomposition and their parallel implementation for the Vlasov equation in one-D," *IEEE Conference Record*
  72. *Abstracts IEEE International Conference on Plasma Science*, June 1994, Sante Fe, New Mexico, USA, pp. 224-225 (1994).
  73. James Paul Holloway and Greg Wojtowicz, "A Spectral Element Discretization of Diffusion Theory from Transport Theory," in *Proceedings of the 1994 ANS Topical Meeting on Advances in Reactor Physics*, April 11-15, 1994, Knoxville, TN, pp. 85-94, American Nuclear Society, LaGrange Park, IL, 1994.
  74. J. Pender, M. Buie, James Paul Holloway and Mary L. Brake, "Radial Optical Emission Profiles of RF Parallel Plate Glow Discharges," *IEEE Conference Record Abstracts*, 1993 IEEE International Conference on Plasma Science, (1993).
  75. James Paul Holloway, "A Pseudospectral Method for the Vlasov-Maxwell Equations in One Dimension," *Transactions of the American Nuclear Society*, **69**, pp. 232-233 (1993).
  76. James Paul Holloway, "Hamiltonian Chaos and Stochastic Electron Beam Equilibria," *Transactions of the American Nuclear Society*, **64**, pp. 298-299 (1991). (Invited)
  77. John P. Hannon, James Paul Holloway and J. J. Dorning, "A Nodal Integral Method for the Inviscid Shallow Water Equations," *Advances in Mathematics, Computations and Reactor Physics*, Volume 2, Proceedings of the American Nuclear Society International Topical Meeting, April 28-May 2, 1991, Pittsburgh, PA, K. Abu-Shumays (Ed.), pp. 6.2 2-1-13, American Nuclear Society, LaGrange Park, IL, 1991.
  78. James Paul Holloway and J. J. Dorning. "Nonlinear But Small Amplitude Longitudinal Plasma Waves," *Operator Theory: Advances and Applications*, 51, W. Greenberg (Ed.), pp. 188-211, Birkhauser, 1991.
  79. Mark Buchanan, J. J. Dorning and James Paul Holloway, "Recent Applications of Bifurcation Theory to Nonlinear Waves in Collisionless Plasmas," *Research Trends in Nonlinear and Relativistic Effects in Plasmas*, V. Steffan (Ed.), AIP Conference Series, American Institute of Physics, New York (1991).
  80. James Paul Holloway and J. J. Dorning. "Bifurcating Families of Periodic Traveling Waves in Rarefied Plasmas," *Rarefied Gas Dynamics: Space Related Studies*, E. P. Muntz, D. P. Weaver and D. H. Campbell (Eds.), Progress in Astronautics and Aeronautics 116, pp. 115-126, AIAA Washington, 1989.
  81. James Paul Holloway. "The Hausdorff-Besicovitch Dimension," *Transactions of the American Nuclear Society*, **60**, pp. 342-343 (1989). (Invited)
  82. James Paul Holloway and J. J. Dorning. "Spatially Nonuniform Traveling Waves Bifurcating from Single-Humped Vlasov Equilibria," *Transactions of the American Nuclear Society*, **57**, pp. 100-102 (1988).
  83. James Paul Holloway and J. J. Dorning. "Periodic Traveling Waves Bifurcating From Multi-Humped Vlasov Equilibria," *Transactions of the American Nuclear Society*, **56**, pp. 311-313 (1988).
  84. James Paul Holloway. "Nonlinear Dynamics of Multispecies Boltzmann Equations," *Transactions of the American Nuclear Society*, **53**, pp. 241-242 (1986). (Invited)
  85. James Paul Holloway and J. J. Dorning. "On the Nonlinear Dynamics of Multi-species Gas Kinetic Equations," in *Proceedings of the 15th International Symposium on Rarefied Gas*

*Dynamics*, V. Boffi and C. Cercignani (Eds.), pp. 85-99, B. G. Teubner, Stuttgart, 1986.

86. James Paul Holloway and James F. Stubbins. "Phase Stability in Irradiated Alloys by Constrained Equilibrium Thermodynamics," in *Effects of Radiation on Materials: 12th International Symposium*, F. A. Garner and J. S. Perrin (Eds.), pp. 167-183, ASTM STP 870, Philadelphia, 1985.

#### *Selected Additional Publications:*

1. James Paul Holloway and Amy Conger, *There's Plenty of Room in the Co-Curricular*, IIE Networker, Fall 2014.
2. James Paul Holloway and Amy Conger, *The University as a Partner, Not a Competitor*, University World News, March 21, 2014 (<http://www.universityworldnews.com/article.php?story=20140318140444852>)
3. For Love of Teaching, *Michigan Today*, May 12, 2009. (<http://michigantoday.umich.edu/2009/05/story.php?id=7718>)
4. Comparative Book Review: High Tech Heretic by Clifford Stoll, Doubleday (1999) and In the Beginning Was the Command Line by Neal Stephenson, Avon Books (1999), review published in *Linux Journal*, No. 74, June 2000, pp. 190-192 (2000).
5. Global Bifurcations and Chaos: Analytical Methods by S. Wiggins, Springer Verlag, New York (1988), book review published in *Transport Theory and Statistical Physics*, **18**, pp. 539-544 (1990).
6. James Paul Holloway, *A Not Very General Introduction to Matlab*, University of Michigan, Nuclear Computing Report No. UMNC 3, 1992.
7. James Paul Holloway, *A Minimalist MCNP Manual and Local Guide*, University of Michigan, Nuclear Computing Report No. UMNC 1, 1992.
8. James Paul Holloway. *Longitudinal Traveling Waves Bifurcating From Vlasov Plasma Equilibria*. Ph.D. Dissertation, University of Virginia, Charlottesville, VA, January 1989.
9. James Paul Holloway, *The Thermodynamics of Constrained Systems and the Stability of Solid Phases in the Presence of Excess Point Defects*. Masters Thesis, University of Illinois, Urbana, IL, January 1982.
10. James Paul Holloway and Magdi M. H. Ragheb, *RDCS: A Code to Pick Multigroup Cross Sections from a Binary Nuclides-Organized Library and Generate Input Files for Transport Codes*, University of Illinois, Fusion Studies Laboratory Report FSL- 64, 1981.

## **SEMINARS AND WORKSHOPS**

#### *Selected Educational Workshops and Related Presentations:*

- American Nuclear Society Trinity Section Invited Speaker: *Education in a Multicentury Arc*, October 2019.
- University of Michigan Honors Convocation Speaker: *Horseless Innovation*, April 2010.
- Speaker at the University of Michigan Provost's Seminar on Teaching: *What Are They Learning? Approaches for Assessing Student Learning*, "How do we know a curriculum works? Structuring a curriculum review process," September 2009.
- Speaker at the University of Michigan Center for Research on Learning and Teaching Lecture Capture Roundtable, "Use of Video Capture in Large Courses," March 2006.
- Speaker at the University of Michigan Center for Research on Learning and Teaching (North) Workshop on Faculty Research on Student Retention in Engineering, March 2006.
- James Holloway & Helen Burn, "Why should I care? A research study of student motivation in Engineering 101," *CRLT North News*, Fall 2005.
- Panel speaker at University of Michigan Center for Research on Learning and Teaching (North)

Workshop “Faculty Talk about Effective Teaching,” November 2004.

- Panel speaker at University of Michigan Center for Research on Learning and Teaching (North) Workshop “Engineering and Pedagogy for Retention of Under-Represented Students,” March 2004.
- Speaker at the University of Michigan Provost’s Seminar on Teaching: *Unraveling the Complexities: Faculty Investigating Their Students Learning*, “Understanding and Improving a First Year Course in Algorithms and Programming,” November 2003.

#### *Michigan Provost Seminars on Teaching Organized:*

- What is a Master's Degree? December 13, 2018.
- Building Structures that Encourage Interprofessional Education, May 1, 2018.
- Beyond Grades: How Do We Represent Student Accomplishment? November 28, 2017.
- Teaching at the Bicentennial: Building the Evidence Base for Engaged Learning, March 14, 2017.
- Thinking Long-term: Next Steps for Engaged Learning at Michigan and Beyond, May 16, 2016.
- Unscripted: Engaged Learning Experiences for U-M Students, March 10, 2015.
- Tri-Campus Provosts' Seminar: Engaged Learning, Community-Based Research and the Community Engagement Corridor [with Michigan State University and Wayne State University], October 22, 2013.

## **COURSES TAUGHT**

These courses were taught at the University of Michigan; Kwame Nkrumah University of Science and Technology, Ghana; and Chaing Mai University, Thailand

**ENGR 599** UNCERTAINTY QUANTIFICATION FOR LARGE-SCALE ENGINEERING SIMULATIONS

Co-taught with Ken Powell and Vijay Nair

**ENGR 599** ENGINEERING IN THE K12 CLASSROOM

Co-taught with Charles Dershimer and Lucie Howell for School of Education students

**NERS 590** SPECIAL TOPICS IN NUCLEAR ENGINEERING II - DEVELOPED AND TAUGHT SECTIONS ON:

- NEUTRON/PHOTON MONTE CARLO
- PARTICLE-IN-CELL METHODS FOR PLASMA KINETICS
- THEORY AND PRACTICE OF THE MONTE CARLO METHOD (WITH WILLIAM R. MARTIN)
- NUCLEAR NON-PROLIFERATION (PROVIDED SPECIAL LECTURES IN SECTION DESIGNED BY RODNEY EWING & RONALD FLEMING)

**NERS 554** RADIATION SHIELDING

Introduced modern computational tools into this class and converted it into a design and project-based learning course for both seniors and graduate students

**NERS 571** INTERMEDIATE PLASMA PHYSICS I

**NERS 442** NUCLEAR POWER REACTORS

**NERS 441** NUCLEAR REACTOR THEORY

**NERS 400** ELEMENTS OF NUCLEAR ENERGY

**NERS 312** ELEMENTS OF NUCLEAR ENGINEERING II

**NERS 311** ELEMENTS OF NUCLEAR ENGINEERING I

Converted NERS 311 & NERS 312 into a 6-credit sequence in modern and nuclear physics for nuclear engineers

**NERS 250** FUNDAMENTALS OF NUCLEAR ENGINEERING AND RADIOLOGICAL SCIENCE

**ENGR 260** ENGINEERING ACROSS CULTURES

- Sometimes co-taught with Dr. Amy Conger; twice taught at Chiang Mai University
- ENGR 200X** ENGINEERING APPROPRIATE TECHNOLOGIES: NEEDS, DESIGN AND ENTREPRENEURSHIP  
Taught at Kwame Nkrumah University of Science and Technology. Class co-designed with Amy Conger, Shanna Daly, and Samuel Kwofie
- ENGR 101** INTRODUCTION TO COMPUTERS AND PROGRAMMING  
Created this large first-year class and have taught it to many thousand students

## SELECTED SERVICE AND COMMITTEE WORK

(Only prior to provost role)

- University of Michigan President's Commission on Carbon Neutrality, 2019
- University of Michigan Energy Institute Executive Committee, 2019
- University of Michigan President's sustainability working group, 2018
- Detroit Institute of Art and Detroit Midtown Community Plaza Steering Committee, 2018
- Provost's Taskforce on Undergraduate Education in the Third Century, 2018
- Michigan Association of State Universities Academic Affairs Officers group, 2015 – 2019
- University of Michigan Information Technology Council, 2014 – 2019 (chair)
- Council for Civic Engagement, 2013 – 2019 (founder)
- Council for Global Engagement, 2013 – 2019
- Thurnau Professor Selection Committee, 2013 – 2019 (Executive sponsor)
- Big10 Academic Alliance Senior International Officers Group, 2013 – 2019
- UM-SJTU Joint Institute Academic Programs Group (Executive committee), 2007 – 2019
- Institutional Autonomous Systems Committee, 2016 – 2017
- President's China Steering Committee, 2010 – 2012
- University of Michigan Presidential Committee on the Bicentennial, 2011 – 2012
- University of Michigan Coursera Steering Committee, 2011 – 2012
- Alpha Nu Sigma Student Chapter Advisor, 2006 – 2012
- University of Michigan Engineering Council Advisor, 2008 – 2012
- CIC Undergraduate Education Working Group, 2010 – 2011
- Provost's GAPS Taskforce (taskforce on performance gap for URM students), 2008 – 2011
- Center for Entrepreneurship Board of Directors, 2008 – 2011
- University of Michigan Teaching Evaluation Steering Committee, 2009 – 2010
- University of Michigan Peace Corps @ 50 Committee – Learning Dimensions, 2009 – 2010
- International Institute Steering Committee, 2009 – 2010
- University of Michigan Information Technology Security Council, 2008 – 2010
- Provost's Expansion of Spring/Summer Instruction Task Force, 2009
- University Accreditation Working Group on Internationalization: Academic Dimensions, 2008 – 2009
- CoE Commission on Undergraduate Engineering Education, 2008 – 2009
- CoE Instructional Technology Committee, 2008 – 2009
- CoE Diversity and Outreach Council, 2007 – 2009
- ASEE: Nuclear Engineering Division President, 2008
- Provost's Committee on Instructional Learning Technology, 2008
- Provost's Steering Committee on Multidisciplinary and Team Teaching, 2005 – 2008
- President's Task Force on China, 2007
- Nuclear Engineering & Radiological Sciences Curriculum Committee Chair, 2006 – 2007
- Nuclear Engineering & Radiological Sciences Fission Systems and Radiation Transport Option Chair, 2003 – 2007
- ASEE: Nuclear Engineering Division Vice President, 2005 – 2006
- ASEE: Division Program Chair for the 2006 ASEE National Meeting, 2005 – 2006
- American Nuclear Society Scholarship Policy and Coordination Committee, 2004 – 2006
- American Nuclear Society Graduate Scholarship Selection Committee, 2005 – 2006
- AGEP Advocate (Alliances for Graduate Education in the Professoriate), 2006

- UM-Flint UM-Ann Arbor Partnership, 2006
- CoE Undergraduate Recruiting Scholarship Committee, 2006
- College of Engineering International Programs Committee, 2006
- ASEE Student Section Outstanding Student Instructor Award Selection Committee, 2006
- Engineering Teaching Academy, 2003 – 2006
- NERS First Year Merit Scholarship Committee, 2000 – 2006
- ASEE Glenn Murphy Award Chair, 2005
- CRLT North Advisory Board, 2005
- NERS Executive Committee, 2003 – 2005
- NERS Faculty Search Committee, 2004 – 2005
- CoE Strategic Planning Implementation Committee: Engineering Education & First Year Programs, 2003 – 2004
- CoE Faculty Honors and Awards Committee, 2004
- College of Engineering Curriculum Committee, 2003 – 2004
- NERS Department Head Search, 2004
- ASEE: Nuclear Engineering Division Executive Board Secretary/Treasurer
- CRLT Advisory Board, 2002 – 2003
- College-wide Engineering Design Course Committee, 2003
- American Society of Engineering Education – Nuclear Engineering Division Executive Board, 2002
- CoE Strategic Planning Committee, 2002
- CoE First Year Courses Review Committee, 2001 – 2002
- Nuclear Engineering and Radiological Sciences Curriculum Committee Chair, 2001 – 2002
- Publications Chair, 2002 American Nuclear Society Topical Conference on Probabilistic Safety Analysis, Detroit, 2001 – 2002
- ABET Accreditation Lead for Nuclear Engineering and Radiological Sciences, 2000 – 2001
- College of Engineering Curriculum Committee, 2000 – 2001
- Ford Nuclear Reactor Decommissioning Team, 2001
- Provost's Academic Computing Advisory Committee, 1998 – 2000
- Faculty Reappointment Committee, 2000
- NERS Departmental Review Committee, 2000
- American Nuclear Society Mathematics & Computation Division Executive Committee, 1998 – 2000
- College of Engineering ABET accreditation committee, 1998 – 1999
- Chrysler Center Renovation Committee, 1999
- First Year Computing – Engineering 101 / EECS 100 Merger Study, 1999
- NERS Chief Undergraduate Program Advisor, 1994 – 1999
- Michigan Engineering: Student Honors Committee, 1998