

Leadership CV

James Paul Holloway

Administrative and Leadership Positions:

- Vice Provost for Global Engagement and Interdisciplinary Academic Affairs, University of Michigan (2016 – present)
Responsibilities: Foster interdisciplinary scholarship and learning across the university, including in sustainability, poverty alleviation, Detroit engagement, and address other emergent university needs. Support engaged experiential learning on and off campus, domestically and internationally. Serve as Senior International Officer and identify and support strategic global engagement platforms.
- William Davidson Institute Board (2014 – present)
Responsibilities: Provide governance for non-profit institute focused on providing private-sector solutions in low- and middle-income countries.
- Vice Provost for Global and Engaged Learning, University of Michigan (2013 – 2016)
Responsibilities: 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).
- Associate Dean for Undergraduate Education, College of Engineering, University of Michigan (2007 – 2013)
Responsibilities: Make experiential learning the norm for engineering students through student projects, international experiences, entrepreneurship education. Develop our capacity for engineering education research. Oversee the overall college curriculum and open it up for students to pursue arts, humanities, social sciences, and other creative pursuits as part of their engineering education.
- Interim Director, Wilson Student Team Project Center, College of Engineering, University of Michigan (2011)
Responsibilities: Overall management of a large engineering student team project center, including safety.
- Editor-in-Chief, *Transport Theory and Statistical Physics*, Taylor & Francis (2009-2013)
Turned around a journal that was consistently publishing late and losing reputation from the discipline.

Leadership:

- Exercised academic leadership in associate dean and vice provost roles at University of Michigan.
- Worked across multiple units and disciplines ranging from business, engineering, humanities, social sciences, education, public policy, social work, information, medical school and other health science schools, and others, to create shared vision in a number of areas, including education, civic engagement, international engagement, interdisciplinary scholarship and research, and university policy development.
- Ten years of experience in managing complex international partnerships in multiple countries, including managing our relationship with SJTU and the UM-SJTU Joint Institute in Shanghai, and deepening engagement in Ethiopia and in India along the dimensions of scholarship, student mobility, capacity building, and philanthropy.
- Led University of Michigan's restructuring of sustainability and environment programs across two schools and one central institute.
- Leading University of Michigan's strategic reengagement with and deepening relationships with communities, government and institutions in Detroit, and organizing central units for Detroit engagement.
- Leading development of University of Michigan's strategic vision for continued engagement in Africa.
- Experience participating in and leading implementation of university-wide IT infrastructure projects.

Curriculum:

- 20 years of experience on curriculum committees at the department and school/college level, including committee chair roles and as an associate dean for undergraduate education.
- Involved in major curriculum reforms including two decadal reformations of engineering curricula at the University of Michigan.

- Introduced the proposal to allow liberal arts minors for engineering students, and created the structure for minors in engineering, leading to the creation of the international minor for engineers, multidisciplinary design minor, electrical engineering minor and others.
- Grew engineering student participation in co-curricular and experiential learning, including student teams and projects, international experiences, and in entrepreneurship.
- Created the structure for supplemental studies programs (mini-minors) for the University of Michigan.
- Created, taught, & wrote textbook for first year computing course for all Michigan Engineers.
- Supervised the Engineering division in our College of Engineering, providing & staffing 2 large courses required of all Michigan Engineers, and a number of other course experiences.

Accreditation Experience:

- Multiple successful experiences leading specialized ABET accreditation for engineering, at departmental and college levels.
- Participated in developing special emphasis plan on Internationalization for University of Michigan's 2010 accreditation.
- Leading University of Michigan's accreditation for the Higher Learning Commission in 2020.

Unit management, resource and budget supervision:

- In various roles, have supervised staff, faculty and multiple units.
- As associate dean, supervised multiple units including over 60 staff and faculty in engineering undergraduate education with an annual budget of over \$10M. As vice-provost, supervise reporting units with over 50 faculty and staff, and annual budgets over \$14M.
- Balanced needs of different units for funding and staff and made strategic reallocation of human and financial resources.
- Participated in budget reviews and provided strategic advice for the University of Michigan provost budget team for multiple schools, colleges, and non-academic units.
- Managed continuous budget reductions as part of organized cost containment program.
- Managed staff reductions.
- Organized and managed faculty leadership transitions in high-visibility roles.

Fundraising:

Have engaged in donor cultivation and stewardship, including with high-net-worth donors giving 8-figure gifts. Engage in close coordination with U-M's international giving team on cultivation in both China and India. Have personally closed 7-figure gifts.

Vice Provost Responsibilities and Accomplishments:

- Serve as the Provost Office point person for restructuring of Sustainability programs, including helping to launch the new School for Environment and Sustainability (SEAS) and to recruit its first dean; organized the restructuring and created the faculty buy-in to make the undergraduate program in the environment a strongly shared program between SEAS and the College of Literature Sciences and the Arts, including both budget & administrative structures to ensure this; and generated the support to re-envision the role of our Graham Sustainability Institute and recruited its new director from US government service. Maintained this change management effort across three different provosts. Persuaded key donor to provide additional support for our sustainability efforts.
- Lead the university's work to strengthen our engagement in Detroit and make this work coherent, transparent, and aligned with the interests of the city's communities. Developed new funding programs for faculty engagement and scholarship with Detroit, and for student innovation and entrepreneurship projects in the city. Along with the Vice Provost for Budget and Finance, am organizing the planning for a 121,000 sq ft. facility in the cultural heart of Detroit, to support U-M engagement in the city. Developed a successful annual program, um3detroit, to bring together all three U-M campuses work with Detroit. Created the tri-campus Detroit Advisory Group.
- Since 2013, organize our efforts to make Engaged Learning (encompassing experiential and action-based learning engaging external stakeholders) a core mode of learning for the U-M. Lead process to create learning goals for engaged learning, managed the \$25M Transforming Learning for the Third Century grants program, organized a multi-year series of faculty engagement workshops, seminars and lunches to

deepen understanding of learning goals, their assessment, and pedagogical modes to support them. This effort spanned all schools and colleges and disciplines at the university. In our 2017 graduating class 96% of graduates had at least one engaged learning experience and we saw ~50% growth in undergrad research and in education abroad since 2013.

- Develop and support interdisciplinary engaged scholarship, including programs such as Interprofessional Health Education and the interdisciplinary Problem Solving initiative. Launched Poverty Solutions to bring together scholars and students from multiple schools and colleges to bring action-focused scholarship and research modalities to bear on the alleviation of poverty. One accomplishment of this program is the creation of a Partnership for Economic Mobility with the Mayor's Office of Detroit to bring the U-M's intellectual assets to bear on economically challenged populations within the city; Poverty Solutions has raised \$8.7M in external support to-date, on an internal \$5M investment to date. Created a university-wide Council on Civic Engagement, a Special Council on Faculty Civic Engagement, and built a partnership with our Ginsberg Center for Service Learning to further this work and strengthen the connection between Student Life and Academic Affairs. Authored the U-M's principles for civic engagement.
- Created a Global Engagement Team to provide support for all schools and colleges, but especially smaller schools, to support their education abroad efforts and offices (of which there are over 20 at U-M). Provide expertise and consulting and shared policy and IT infrastructure so that units can meet challenges in coordinated and shared ways, while maintaining local autonomy and faculty control. Moved U-M from a top 20 in the US of sending students for study abroad to top of the Big10 and 3rd in the nation as a result of these efforts. Encouraged and supported co-curricular and student-led abroad programs and projects, which now approach for-credit experiences in scale. Supported all schools and colleges in building international collaborations in research and study, established new strategic foci on India and Ethiopia by building bridges with existing faculty efforts, and ensured continued financial support for critical programs connecting UM and African scholars. Continuing to lead the UM-SJTU partnership.
- Current reporting units include: Graham Sustainability Institute, Confucius Institute, Officer Education Programs (ROTC) for Army, Navy and Air Force, Wallace House (fellows program for early and mid-career journalists), Women in Science and Engineering Program, Poverty Solutions, Interprofessional Health Education.
- Successfully brokered the move of our M-Cubed interdisciplinary seed funding program from a college-based program into our Vice President for Research office.
- Represent U-M to Michigan Association of State Universities to coordinate academic affairs across 15 public universities in the state, including supporting responsible practices to simplify student transfer between institutions.
- See <http://engaged.umich.edu>, <http://global.umich.edu>, and <http://detroit.umich.edu>
- Leading U-M HLC 2020 accreditation process.

Associate Dean Responsibilities and Accomplishments:

- Responsible for overall undergraduate education experience in the College of Engineering, in and out of the classroom, including overall curriculum, common first year curriculum and courses, integration of first year and writing-across the curriculum programs with departmental curricula, academic integrity and student success programs. Through illumination of benefits to departments and through a new budget structure, created a culture where departmental chairs and faculty sought out teaching opportunities in the first-year program. Increased the number of free electives in engineering and restructured requirements so students could better take advantage of the opportunities in the rest of the university.
- Responsible for development of experiential educational experiences including entrepreneurship (later moved under separate associate dean), international experiences for engineering, team project and multidisciplinary design-build-test program. Developed the Engineering Plus concept as learning goals cutting across all of the experiential curriculum. Established minors in the college of engineering, including the International Minor for Engineers (now one of the largest at U-M), and helped to launch the Multidisciplinary Design Program and Multidisciplinary Design Minor. Through creative curricular and co-curricular programming, grew participation in international experiences for engineering students by nearly a factor of 3, with nearly 25% of graduates having an international experience at the end of my tenure. Institutionalized these programs and managed them through programmatic leadership transitions and ensured they would thrive across college leadership transitions also.
- Responsible for cross campus collaborations with the creative schools: Art; Music, Theater & Dance;

Architecture and Urban Planning; Engineering. Helped to initiate co-taught courses across these units, including in the first-year engineering design class (casting bells is a wonderful blend of engineering, materials, visual aesthetics, music, and physics). Helped shape the ArtsEngin creativity program as one of the 4 co-leads of the executive committee, and helped to launch the LivingArts living learning community (the first living-learning community not based in our liberal arts school).

- Starting in 2007 managed the University of Michigan-Shanghai Jiao Tong University relationship, including serving on the UM-SJTU Joint Institute Academic Programs Group (executive committee), helping to design academic and administrative processes to launch the Joint Institute, and engaging in faculty review for hiring, promotion, and tenure. Participated in program review, chaired the dean search for the Joint Institute and recruited the second dean.
 - Reporting units included: Technical Communication (~20 faculty), International Programs in Engineering, Wilson Student Team Project Center, Center for Research on Learning and Teaching in Engineering (faculty development), Multidisciplinary Design Program, Student Affairs (including Engineering Advising Center, Engineering Career Resource Center, Financial Aid, Registrar, Student Wellness, and Academic Integrity), Center for Engineering Diversity and Outreach, which I restructured from 3 existing and disconnected programs, and through it directed the growth of the successful M-STEM academic support program for engineering students.
 - Other accomplishments of note:
 - Recruited and retained the first faculty member in the College of Engineering's program in Engineering Education Research, laying the groundwork to institutionalize this program within the college.
 - Led the College of Engineering in a successful ABET accreditation process, and kept it fun.
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Curriculum Vitae

James Paul Holloway

Education

01/1989	Ph. D. in Engineering Physics. University of Virginia, Charlottesville, VA
06/1985	CAS in Mathematics. Cambridge University, Cambridge, 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

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.

Professional Experience

07/2016–	Vice Provost for Global Engagement and Interdisciplinary Academic Affairs, University of Michigan
11/2014–	William Davidson Institute Board
07/2013–06/2016	Vice Provost for Global and Engaged Education, University of Michigan
07/2007–06/2013	Associate Dean for Undergraduate Education, College of Engineering. University of Michigan, Ann Arbor, MI
06/2011–09/2011	Interim Director, Wilson Student Team Project Center
09/2007–	Arthur F. Thurnau Professor
09/2005–	Professor of Nuclear Engineering and Radiological Sciences. University of Michigan, Ann Arbor, MI
09/1996–08/2005	Associate Professor of Nuclear Engineering and Radiological Sciences. University of Michigan, Ann Arbor, MI
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, Ann Arbor
01/1989–12/1989	Research Assistant Professor of Applied Mathematics and Engineering Physics. University of Virginia, Charlottesville, VA

Academic Honors and Awards

2014	Ted Kennedy Family Team Excellence Award 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
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	the CRASH Center
2011	Harold R. Johnson Diversity Service Award
2007	Named Arthur F. Thurnau Professor by the University of Michigan in recognition of outstanding contributions to undergraduate education
2005	Committee on Institutional Cooperation Academic Leadership Program Fellow (CIC-ALP 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
2000	Teaching Excellence Award, University of Michigan College of Engineering
2000	Certificate of Appreciation for exemplary service on the ABET99 working group within the College of Engineering at the University of Michigan
1997	Department of Nuclear Engineering and Radiological Sciences Service Award
1996	Certificate of Special Recognition, Mentorship Program, Macomb Mathematics Science & Technology Center
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 Award
1993	Department of Nuclear Engineering Teaching Award/Alpha Nu Sigma Outstanding Faculty Member Award
1989	Allan Talbott Gwathmey Memorial Award The University of Virginia's award for outstanding evidence of research ability in a fundamental problem of the physical sciences.
1987 & 1988	National Aeronautics and Space Administration Office of Space Science and Applications Graduate Student Researchers Program Awards
1986	American Nuclear Society Robert A. Dannels Memorial Award ANS National award to the outstanding graduate student in nuclear science and engineering

Editorial Service

2009—2013	Editor-in-Chief, <i>Transport Theory and Statistical Physics</i> , Taylor & Francis
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Inductions into Honor Societies

2003	Order of the Engineer
1985	Sigma Xi
1983	Alpha Nu Sigma
1982	Tau Beta Pi

Current Professional Society Memberships

AIEA	Association of International Education Administrators
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ANS	American Nuclear Society Service Posts: Alpha Nu Sigma Michigan Alpha Advisor, Graduate Scholarship Selection Committee, Scholarships Policy Committee, Executive Committee for the Michigan Section, Executive Committee for the Mathematics & Computation Division
ASEE	American Society for Engineering Education Service Posts: Chair for the Nuclear & Radiological Engineering Division, Vice Chair, Program Chair (2006 ASEE National Meeting), Secretary & Treasurer, Glen Murphy Awards Chairman, Executive Committee member, all for the Nuclear & Radiological Engineering Division
Forum	Forum on Education Abroad
IEEE	Institute of Electrical and Electronics Engineers

Doctoral Committees Chaired

2017	Jeffery Fein, “Mitigation of Laser-Plasma Instabilities in Laser-Generated X-Ray Sources”
2013	Lloyd Rhodes, “Model Based Predictive Control of a High Temperature Gas Cooled Power Plant Coupled to a Hydrogen Production Facility”
2013	Tiberius Moran, “Radiation Hydrodynamics Modeling of Blast Waves”
2011	Stephen Asbury, “Genetic Algorithms in Radiation Transport Optimization”
2010	Sy Stange, “CeF ₃ Nanocomposite Detectors”
2009	Jesse Cheatam, “High Order Methods for Monte Carlo Radiative Transfer”
2009	Jeremy Lloyd Conlin, “Explicitly Restarted Arnoldi’s Method for Monte Carlo Nuclear Criticality Calculations”
2009	Kyeong Sam Oh, “A Study of Low Order Spherical Harmonic Closures for Rapid Transients in Radiation Transport”
2008	Bulent Alpay, “Degradation Monitoring using Probabilistic Inference”
2006	Ryan G. McClarren, “Spherical Harmonics Methods for Thermal Radiation Transport”
2004	David Griesheimer, “Functional Expansion Tallies for Monte Carlo Simulations” Co-Chair with William Martin
2004	Shannon M. Bragg-Sitton, “Analysis of Space Reactor System Components: Investigation Through Simulation and Non-Nuclear Testing”
2002	Hatice Akkurt, “Composition Analysis of Large Samples with PGNA Using a Fixed Point Iteration”
2002	Corey J. Collard, “Spatially Resolved Analysis of Rare Gas and Carbon-Based Plasmas in RF Systems” Co-Chair with Prof. Mary L. Brake
2002	Scott A. Anderson, “Spectroscopic Study of a Microwave Resonant Cavity Excited XeCl Excimer Discharge” Co-Chair with Prof. Mary L. Brake
2000	Thomas A. Brunner, “Riemann Solvers for Time-Dependent Transport Based on the Maximum Entropy and Spherical Harmonics Closures”
1999	Steven Christopher Shannon, “Spatially Resolved Analysis of Plasma Etch Discharges Using a Novel Optical Emission Spectroscopy Sensor” Co-Chair with Prof. Mary L. Brake
1997	Joseph Wade Schumer, “Optimized 1D–1V Vlasov-Poisson Simulations Using Fourier-Hermite Spectral Discretizations”
1996	Bruce Wayne Patton, “Application of Krylov Subspace Iterative Techniques to the Numerical Solution of the Neutron Transport Equation”

- 1995 Roque Donizete de Oliveria, “Whistler Mode Electron Cyclotron Emission in Magnetic Mirror Plasmas”
- 1995 Gregory M. Wjotowicz, “Spectral Element Lattice Calculations Based on an Asymptotic Flux Representation”

Courses Taught

- ENGR 599 Uncertainty Quantification for Large-Scale Engineering Simulations
Co-taught with Prof. Ken Powell and Prof. Vijay Nair
- ENGR 599 Engineering in the K12 Classroom
Co-taught with Charles Dershimier 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, The Theory and Practice of the Monte Carlo Method (with William R. Martin), on Particle-in-Cell Methods for Plasma Kinetics, and assisted in a section on Nuclear Non-Proliferation (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 I
- NERS 400 Elements of Nuclear Energy
- NERS 312 Elements of Nuclear Engineering II
- NERS 311 Elements of Nuclear Engineering I
In the mid 1990’s converted NERS 311 & NERS 312 into a 6-credit sequence in modern and nuclear physics for nuclear engineers, after changes to the physics curriculum resulted in the loss of our previously favored modern physics course.
- NERS 250 Fundamentals of Nuclear Engineering and Radiological Science
- ENGR 260 Engineering Across Cultures
Sometimes Co-taught with Dr. Amy Conger; twice taught abroad at Chiang Mai University to U-M and CMU students.
- ENGR 200X Engineering Appropriate Technologies: Needs, Design and Entrepreneurship
Taught at Kwame Nkrumah University of Science and Technology for both U-M and KNUST students. 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.

Publications: Books & 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.

Publications: Refereed Archival Journals

1. J. R. Fein, J. P. Holloway, M. R. Trantham, P. A. Keiter, D. H. Edgell, D. H. Froula, D Habeggerger, 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>).
2. 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>).
3. 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).
4. 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).
5. 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>.
6. 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>.
7. 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).
8. 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
9. 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).
10. 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
11. 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).

12. 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)**.
13. 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)**.
14. 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).
15. 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).
16. 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).
17. 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).
18. 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)**
19. 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)
20. 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).
21. 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)
22. Thomas Brunner and James Paul Holloway, “Two-Dimensional Time Dependent Riemann Solvers For Neutron Transport,” *Journal of Computational Physics*, **210**, 386-399 (2005).
23. 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).
24. 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).
25. 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).
26. 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).
27. 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).
28. 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).
29. 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).
 30. 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).
 31. 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).
 32. Steven Shannon, James Paul Holloway and M. L. Brake, “Spatially Resolved Fluorine Actinometry,” *Journal of Vacuum Science and Technology*, **17**, 2703-2708 (1999).
 33. 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).
 34. 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).
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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, & and 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

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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.
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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.
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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.
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81. James Paul Holloway. "The Hausdorff-Besicovitch Dimension," *Transactions of the American Nuclear Society*, **60**, pp. 342-343 (1989). (Invited)
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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.

Diverse other 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.

Educational Workshops, Seminars and Related Publications

1. University of Michigan Honors Convocation Speaker: *Horseless Innovation*, April 2010.
2. 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.
3. Speaker at the University of Michigan CRLT Lecture Capture Roundtable, "Use of Video Capture in Large Courses," March 2006.
4. Speaker at the University of Michigan CRLT North Workshop on Faculty Research on Student Retention in Engineering, March 2006.
5. James Holloway & Helen Burn, "Why should I care? A research study of student motivation in Engineering 101," *CRLT North News*, Fall 2005.
6. Panel speaker at University of Michigan CRLT North Workshop "Faculty Talk about Effective Teaching," November 2004.
7. Panel speaker at University of Michigan CRLT North Workshop "Engineering and Pedagogy for Retention of Under-Represented Students," March 2004.
8. 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.

Provost Seminars on Teaching Organized

1. What is a Master's Degree? December 13, 2018.
2. Building Structures that Encourage Interprofessional Education, May 1, 2018.
3. Beyond Grades: How Do We Represent Student Accomplishment? November 28, 2017.
4. Teaching at the Bicentennial: Building the Evidence Base for Engaged Learning, March 14, 2017.
5. Thinking Long-term: Next Steps for Engaged Learning at Michigan and Beyond, May 16, 2016.
6. Unscripted: Engaged Learning Experiences for U-M Students, March 10, 2015.
7. 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.

Selected Service and Committee Work

- U-M President's Commission on Carbon Neutrality, 2019 – present
- U-M Energy Institute Executive Committee, 2019 – present
- U-M 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 – present
- U-M Information Technology Council, 2014 – present (chair)
- Council for Civic Engagement, 2013 – present (founder)
- Council for Global Engagement, 2013 – present
- Thurnau Professor Selection Committee, 2013 – present (Executive sponsor)
- Big10 Academic Alliance Senior International Officers Group, 2013 – present
- UM-SJTU Joint Institute Academic Programs Group (Executive committee), 2007 – present
- Institutional Autonomous Systems Committee, 2016 – 2017
- President's China Steering Committee, 2010 – 2012
- U-M Presidential Committee on the Bicentennial, 2011 – 2012
- U-M Coursera Steering Committee, 2011 – 2012
- Alpha Nu Sigma Student Chapter Advisor, 2006 – 2012
- U-M 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
- U-M Teaching Evaluation Steering Committee, 2009 – 2010
- U-M Peace Corps @ 50 Committee – Learning Dimensions, 2009 – 2010
- International Institute Steering Committee, 2009 – 2010
- U-M 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

