CURRICULUM VITAE

HARRY DANKOWICZ

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Education

1991	M.Sc. in Engineering Physics, KTH Royal Institute of Technology, Sweden (KTH) Thesis title: Stochastically Forced Systems Exhibiting Nondeterministic Chaotic Behavior Advisor: Prof. Martin Lesser
1994/95	Exchange Scholar in the Program of Applied and Computational Mathematics, Princeton University
1995	Ph.D. in Theoretical and Applied Mechanics, Cornell University Dissertation title: Chaos in Low- and High-Dimensional Systems Advisor: Prof. Philip Holmes Minors in Mathematics and Astronomy
2018	M.S. in Journalism, University of Illinois at Urbana-Champaign (UIUC)

Professional History

2025-present	Keystone Professor, A. James Clark School of Engineering, University of Maryland, College Park (UMD)
2023-present	Professor, Department of Mechanical Engineering, UMD
2023-present	Affiliate faculty member in the Applied Mathematics & Statistics, and Scientific Computation Program, UMD
2023-2025	Chair, Department of Mechanical Engineering, UMD
2021-2023	Program Director, Dynamics, Control and Systems Diagnostics, Division of Civil, Mechanical, and Manufacturing Innovation, Directorate of Engineering, the National Science Foundation (NSF)
2022-2022	NSF Embassy Science Fellow, US Embassy in Mexico City
2016-2021	Associate Dean for Graduate, Professional and Online Programs, The Grainger College of Engineering, UIUC
2011-2023	Professor in the Dept. of Mechanical Science and Engineering, UIUC
2005-2011	Associate Professor in the Dept. of Mechanical Science and Engineering, UIUC
2004-2005	Associate Professor in the Dept. of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA (Virginia Tech)
2004-2005	Affiliated faculty member in the Dept. of Aerospace and Ocean Engineering, Virginia Tech

2003-2005	Affiliated faculty member in the School of Biomedical Engineering and Sciences, Virginia Tech
2001-2005	Affiliated faculty member in the Dept. of Mechanical Engineering, Virginia Tech
1999-2004	Assistant Professor in the Dept. of Engineering Science and Mechanics, Virginia Tech
1999-2005	Guest Researcher in the Dept. of Mechanics, KTH
1998	Awarded the title of Docent in Mechanics by the Faculty of Engineering Physics, KTH after external review by Prof. Edwin Kreuzer, Hamburg University of Technology, Germany and Prof. Peter Olsson, Chalmers University of Technology, Sweden
1996-1999	Research Associate in the Dept. of Mechanics, KTH
1995/96	Göran Gustafsson Postdoctoral Fellow in the Dept. of Mechanics, KTH

Past Administrative and Leadership Experience

Chair, Department of Mechanical Engineering, UMD (December 2023-October 2025)

- Responsible for strategic leadership, staffing, hiring, promotion, professional development, community building, communications, facilities, budgeting, financial review, external relations, innovation, and growth for top-ranked academic programs in mechanical and reliability engineering (according to the US News & World Report 2025-26 rankings: the undergraduate program in mechanical engineering was ranked #18 in the nation and #9 among those at public institutions, and the graduate program in mechanical engineering was ranked #17 in the nation and #9 among those at public institutions), as well as for research enterprise with $28.5M in research expenditures in FY24 in a department with 45 tenure-track faculty, 1240 undergraduate students and 252 graduate students in AY24-25.
- Offered strong support for processes of shared governance and transparency that also enabled influence by professional track faculty and staff. Contributed to the articulation of an updated unit plan of organization and bylaws as well as a policy for tenure-track faculty workload, creation and operation of a department honors and awards committee, and strong participation of a department Advisory Council in decision making. Facilitated the development of a new strategic plan for the department and oversaw multiple staff and faculty retreats on and off campus.
- Appointment of new leadership to the Center for Engineering Concepts Development (CECD) and creation of a new seed-funding program administered by CECD. Appointment of new leadership to the Center for Environmental Energy Engineering (CEEE) and allocation of resources for finalizing facilities upgrade of CEEE testing chambers. Facilitated the creation of a consortium membership agreement for the Center for Risk and Reliability (CRR) and associated agreements with the UMD Foundation. Appointment of new faculty leadership in the roles of Associate Chair of Research and Administration, Director of Undergraduate Studies, and Accessibility and Disability Service Department Liaison. Creation and appointment of Assistant Director for Business Development.

- Work with external relations staff to generate support for department activities, including by reconstituting an External Advisory Committee with clearly defined plan of organization, organizing events celebrating long-standing external partnerships, engaging with alumni and other stakeholders, and developing communications material for outreach.
- Member of Dean's administrative council. Close collaboration with Assistant Deans for Finance and Administration, Communications, Continuing Education, Strategic Operations and IT, and Advancement, Associate Deans for Faculty Affairs, Research, and Undergraduate Student Affairs, and Heads of Departments of Aerospace Engineering, Bioengineering, Chemical and Biomolecular Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Materials Science and Engineering, and Fire Protection Engineering.

Program Director, Division of Civil, Mechanical and Manufacturing Innovation, The National Science Foundation (May 2021-December 2023)

- Responsible for long-range planning and budget development for the areas of science represented by the Program of Dynamics, Control and Systems Diagnostics; for managing an effective, timely merit review, award and declination process, and post-award management process; for communicating effectively the promise of the program and in so doing, advising the community of current and future funding opportunities; for coordinating and collaborating with other Programs in NSF, other Federal agencies and organizations; for advising and assisting the Division Director in the development of long-range plans that ensure the Directorate of Engineering's investments are targeted to challenges and opportunities in the directorate's research and education fields; for collaboratively overseeing and managing the merit review process for assigned research, education or infrastructure proposals to ensure that investments are made in a diverse, rich mix of bold, cutting-edge projects that promise to advance the frontier and contribute to the attainment of NSF's strategic goals.
- On assignment as Embassy Science Fellow with the US Embassy in Mexico City, June 10-July 3, 2022, and November 6-23, 2022. Support inclusive growth and sustainable development of the high-tech manufacturing industry in Mexico in collaboration with the National College of Professional Technical Education (CONALEP) and the Government of Mexico's Ministry of Economy (Economía), with emphasis on educational curricula and workforce development in areas of critical demand, especially the semiconductor sector. Outreach to and/or visits with Mexican industry and US-based companies, Mexican research institutions and universities, technical vocational high schools, industry associations, and non-profit organizations. Formal presentations of key recommendations to education, research, and industry stakeholders at public events organized by Economía, as well as to the Economía top leadership team.

Associate Dean for Graduate, Professional and Online Programs,
The Grainger College of Engineering, UIUC (August 2016-May 2021)

- Member of Dean's executive leadership team and representing the Dean in matters pertaining to graduate, professional, and online programs serving some 4,800 (Fall 2020) residential and online engineering graduate students. Close collaboration with Associate Deans for Undergraduate

Programs, Research, Advancement, Entrepreneurship, Administration, and Academic Affairs, as well as Executive Directors and Assistant Deans for Finance, Human Resources, Career Services, and Marketing and Communications.

- Responsible for strategic leadership, revenue and enrollment projection, and critical academic initiatives across all areas of graduate and professional education, including expansion of PhD enrollment and related research infrastructure, growth in (number of and enrollment in) professionally oriented master's programs, growth in (impact of and enrollment in) online programs for distance-learners including in partnership with Coursera, expanded use of online learning options for on-campus students, investments for increased participation from traditionally underrepresented groups, launch of not-for-credit professional and executive training programs, development of international partnerships, development of faculty compensation policies for online instruction, and analysis and promotion of quantitative and reputational rankings.
- Oversight of the Office of Graduate, Professional and Online Programs, including budgeting, hiring, and promotion. Direct and indirect supervision of 15 academic professional and administrative staff members with responsibility for academic program coordination, college-level fellowship programs, academic advising, capstone project coordination, career services, corporate outreach and partnerships, curricular practical training (CPT) for international students, online course management, professional development programming and seminars, marketing and data management, video production, test coordination, installation and upgrades of classroom recording and video conferencing equipment, program rankings reporting, external workforce development programming, training of departmental graduate program staff, management of student concerns and interpersonal conflicts, graduate student employment grievances, development and enforcement of graduate program policies and procedures, student recruitment, Mavis Future Faculty Fellows Academy, Roadmap to Graduate School course.
- Responsible for graduate student diversity, inclusivity, and equity programs. Oversight of the annual Multicultural Engineering Recruitment for Graduate Education (MERGE) event and the Support for Underrepresented Groups in Engineering (SURGE) fellowship program. Participation in career fairs at national conventions of the National Society of Black Engineers (NSBE), the Society of Hispanic Professional Engineers (SHPE), the Society of Women Engineers (SWE), the National Graduate Education for Minorities (GEM) Consortium, and the Institute for Teaching and Mentoring (post-doctoral and faculty recruitment). Leadership support to the Sloan University Center of Exemplary Mentoring at Illinois. Organization of student-directed seminars and workshops including the Importance of Diversity Symposium (2017). Outreach to minority-serving institutions.
- Member of College Administrative Committee. Close collaboration with Heads of Departments of Aerospace Engineering, Agricultural and Biological Engineering, Bioengineering, Chemical and Biomolecular Engineering, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Industrial and Enterprise Systems Engineering, Materials Science and Engineering, Mechanical Science and Engineering, Nuclear, Plasma & Radiological Engineering, and Physics.

- Member of College Executive Committee. Support of procedures for effective shared governance, including in evaluation of academic programs and courses. Close collaboration with departments (Directors of Graduate Study, Graduate Program Coordinators) and upper levels of campus oversight (Graduate College, Faculty Senate Committee on Educational Policy) to ensure that programs and courses meet requirements and are processed and approved in a timely fashion, including by the University Board of Trustees and the Illinois Board of Higher Education.
- Membership on campus committees and liaison with the Office of the Provost, the Graduate College, and other academic colleges and campus offices including the Center for Innovation in Teaching and Learning, Office of University Counsel, Office of Illinois Human Resources, Office of Corporate Relations, Office of Technology Management, Office of the Vice Chancellor for Research, Office of the Vice Provost for International Affairs and Global Strategies. Support for Higher Learning Commission (HLC) accreditation report and visit. Support for strategic partnerships with the Gies College of Business and the College of Applied Health Sciences.

Editor-in-Chief, ASME Applied Mechanics Reviews, (January 2012-September 2022)

- Editorial management and oversight of flagship, bimonthly, archival review journal charged with maintaining exceptional scholarship and impact in service of the applied mechanics and engineering science communities.
- Recruitment and supervision of diverse editorial board across key areas of theoretical and applied mechanics, including fluid and solid mechanics, heat transfer, dynamics and vibration, and applications.
- Oversaw improvements in 2-year impact factor (Clarivate Analytics) from 2.667 (2012) to 11.345 (2021), 5-year impact factor from 3.455 (2012) to 10.838 (2021), number of citations from 2,298 (2012) to 5,473 (2021).
- Developed and implemented strategic initiative for non-traditional science communication through production of podcast series of edited, full-length audio interviews. Disseminated through the ASME Digital Collection and multiple independent platforms, including Apple ITunes, Stitcher, TuneIn, Anchor, Podbean, Breaker, RadioPublic, and Castbox.
- Member of ASME Board of Editors. Close collaboration and publication partnership with Editors of the ASME Journal of Vibration and Acoustics (2014), Journal of Pressure Vessel Technology (2014), Journal of Tribology (2017), Journal of Mechanisms and Robotics (2018), Journal of Computational and Nonlinear Dynamics (2019), Journal of Electrochemical Energy Conversion and Storage (2022).

Faculty Liaison, Illinois-Sweden Program for Educational and Research Exchange (INSPIRE), UIUC (2010-2016)

- Co-initiator of multi-institutional strategic alliance with participation from KTH Royal Institute of Technology, Stockholm University (SU), and Karolinska Institutet in Stockholm, Sweden,

across all pillars of the university's mission – research, teaching, and service – leveraging complementary expertise, access, and opportunity.
- Co-organized two major research symposia in 2010 (in Urbana, IL) and 2011 (in Stockholm, Sweden) with several hundred participating faculty from the Colleges of Engineering, Liberal Arts and Sciences, Fine and Applied Arts, Law, and Business, and from the Beckman Institute, the National Center for Supercomputing Applications, and the Institute for Genomic Biology.
- Co-organized a presidential summit in 2012 (in Urbana, IL) including the top leadership from all four institutions leading to formal creation of the INSPIRE partnership, as well as participation by government representatives and civic organizations in Illinois and Sweden.
- Contributed to extensive local and institutional media coverage and marketing to internal and external stakeholders. Responsible for production of INSPIRE website, including information updates, regular news items, annual reports, and calendar of joint activities.
- Ensured $425k of institutional funds from UIUC, and similar-sized contributions from KTH and SU in support of seed funding for extensive research exchange, course development, and public engagement workshops. Leveraged by the partner institutions to $17.5M in external research funding to UIUC and 45+ joint research publications.
- Close collaboration with the Office of International Programs in Engineering in support of undergraduate student exchange with as many as 30 engineering students spending a semester at KTH each year. New Master of Engineering in Railway Engineering created in partnership with KTH. New field course on Environment and Society in a Changing Arctic, co-staffed by UIUC, KTH, and SU. Linked Stockholm/Illinois chapters of the Innovation Immersion Program, a student business consulting service that engaged with tech companies from Israel, Singapore, and Sweden.
- Partnership received the Andrew Heiskell Award for Innovation in International Education, Best Practices in International Partnerships, from the Institute of International Education in 2016.

Calculus Project Coordinator, College of Engineering, UIUC (2009-2011)
- Liaison with Department of Mathematics in servicing regular Calculus II class and pilot Calculus I class for engineering majors aimed to increase retention, performance, and curricular integration.
- Responsible for annual recruitment and supervision of six engineering graduate students staffing discussion sections. Co-lead training sessions of teaching assistants.
- Development of engineering, physics, and computation inspired worksheets for in-class, active-learning engagement. Translation of mathematical principles to applications in mechanics, electromagnetics, astronomy, and uncertainty quantification.

Honors

Prestigious scholarships, medals, and research awards
- PECASE, Presidential Early Career Award for Scientists and Engineers, 2003

- National Science Foundation CAREER award, 2003-2010
- Swedish Foundation for Strategic Research Junior Individual Grant, 1998-2000
- Göran Gustafsson's Postdoctoral Fellowship, KTH, 1995/96
- Honors Stipend and the Professor Gunnar Wallquist Medal, KTH, 1992
- A.D. White Fellowship, Cornell University, 1991
- Fulbright Scholar, 1991-1995

Teaching awards

- Rose Award for Teaching Excellence, UIUC, 2019
- ASEE Archie Higdon Distinguished Educator Award, 2017
- Engineering Council Outstanding Advising Award, UIUC, 2016
- ASEE Fred Merryfield Design Award, 2013
- Collins Award for Innovative Teaching, College of Engineering, UIUC, 2012
- W.S. 'Pete' White Innovation in Engineering Education Award, Virginia Tech, 2004

Honorary appointments and recognitions

- Cannon Faculty Scholar, UIUC, 2005-2023
- William Pierson Field Visiting Lecturer, Princeton University, 2014
- ASME Fellow, 2012
- Associate, Center for Advanced Study, UIUC, 2011-2012
- Visiting Professor Fellowship, Sapienza Universita di Roma, Rome, Italy, 2009
- Visiting researcher, Complex Non-Smooth Dynamical Systems, Centre de Recerca Matematica, Universita Autonoma de Barcelona, Barcelona, Spain, 2007
- College of Engineering Faculty Fellow, Virginia Tech, 2004-2005

Other awards and recognitions

- Best Paper Award, Springer Nature Nonlinear Dynamics, 2022
- Winner, DSWeb (The Dynamical Systems Web, SIAM) 2018 Software Contest, July 2018
- Andrew Heiskell Award for Innovation in International Education, Best Practices in International Partnerships, from the Institute of International Education to INSPIRE (Illinois-Sweden Program for Educational and Research Exchange), 2016
- Travel Award to attend ICTAM08, U.S. National Committee on Theoretical and Applied Mechanics, 2008
- Travel Award to attend ICTAM04, U.S. National Committee on Theoretical and Applied Mechanics, 2004

Invited conference talks and keynote lectures

- Trends in Data-driven Control of Dynamics 2026, Rostock, Germany, September 2026
- EUROMECH Colloquium 657, Recent Advances in Nonsmooth Dynamics, Exeter, United Kingdom, December 2025

- Investigating Dynamics in Engineering and Applied Science, A workshop celebrating Gábor Stépán's 70th birthday, Budapest, Hungary, July 2024
- IUTAM Symposium on Nonlinear Dynamics for Design of Mechanical Systems Across Different Length/Time Scales, Tsukuba, Japan, July/August 2023
- NODYCON 2023, Rome, Italy, June 2023, https://youtu.be/AP6mr6J7tM4
- Panel on "The Prospects for Workforce Development in Mexico and the Power to Support the Semiconductor Industry", Government of Mexico, Ministry of Economy, Workshop on Strengthening Semiconductor and ICT Supply Chains between Mexico and the United States, August 2022
- ASME 2021 Virtual International Design Engineering Technical Conferences (IDETC), Journal of Computational and Nonlinear Dynamics Spotlight Session, August 2021
- NODYCON 2021, Virtual Workshop on Continuation Techniques, February 2021
- International Conference on Nonlinear Solid Mechanics, Minisymposium on Nonlinear Dynamics and Wave Motion, Rome, Italy, June 2019
- European Solid Mechanics Conference, Minisymposium on Nonlinear Dynamics in Mechanical and Structural Systems, Bologna, Italy, July 2018
- IUTAM Symposium on Nonlinear and Delayed Dynamics of Mechatronic Systems, Nanjing, China, October 2016
- 24th International Congress of Theoretical and Applied Mechanics, Minisymposium on Nonlinear Dynamics in Engineering Systems, Montreal, Canada, August 2016
- Workshop on Applicable Theory of Switched Systems, University of Texas at Dallas, June 2016
- 2016 New Zealand Mathematics Research Institute Summer School on Continuation Methods in Dynamical Systems, Raglan, New Zealand, January 2016
- Investigating Dynamics in Engineering and Applied Science, A workshop celebrating Gábor Stépán's 60th birthday, Budapest, Hungary, July 2014
- 17th US National Congress on Theoretical & Applied Mechanics, East Lansing, Michigan, June 2014
- The Central Region Conference on Numerical Analysis and Dynamical Systems, Lawrence, Kansas, May 2013
- 2012 Joint International Conference on Multibody System Dynamics, Stuttgart, Germany, May 2012
- Euromech Colloquium on Nonsmooth Contact and Impact Laws in Mechanics, Grenoble, France, July 2011
- Summer School on Advanced Topics in Numerical and Computational Bifurcation Analysis, Denmark Technical University, Lyngby, Denmark, June 2011
- Minisymposium on Modelling the Dynamics of the Atomic Force Microscope, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 2011
- 3rd Multifrequency AFM Conference, Madrid, Spain, March 2011
- Workshop on Bifurcation Analysis and its Applications, Montreal, Canada, July 2010
- IUTAM Symposium on Nonlinear Dynamics for Advanced Technologies and Engineering Design, Aberdeen, Scotland, July 2010

- Research Workshop on Bifurcations in Oscillators with Elastic and Impact Constraints, Imperial College, London, United Kingdom, 2009
- SICON (Stability, Identification and Control in Nonlinear Structural Dynamics) Final Conference, Rome, Italy, 2009
- International Symposium on Vibro-Impact Dynamics of Ocean Systems and Related Problems, Troy, Michigan, 2008
- Symposium on Computational Methods in Nonlinear Dynamics at the 5th European Congress on Computational Methods in Applied Sciences and Engineering, Venice, Italy, 2008
- Symposium on Nano and Micro Resonators at the 9th Biennial ASME Conference on Engineering Systems Design and Analysis, Technion, Haifa, Israel, 2008
- International workshop on Applied Nonlinear Mathematics: Making it Real, Bristol University, Bristol, United Kingdom, 2007
- International workshop on Advanced Algorithms and Numerical Software for the Bifurcation Analysis of Dynamical Systems, University of Montreal, Montreal, Canada, 2007
- International workshop on Piecewise Smooth Dynamical Systems: Analysis, Numerics, and Applications, Bristol University, Bristol, United Kingdom, 2004
- Swedish Mechanics Days, 1999

Areas of Research

Dynamical systems and control, computational mathematics, networks and complex systems, design optimization, robotics, and task scheduling; applications to renewable energy technologies, collective behavior of social insects and humans, constrained uncertainty quantification, large-scale field agriculture.

Scholarly metrics

- 96 archival journal publications, 3 archival textbooks/research monographs, one issued patent
- Web of Science Core Collection Metrics: 2,270 citations, h-index 27
- Scopus: 2,559 citations, h-index 29
- Google Scholar: 4,399 citations (1,418 since 2021), h-index 35, i10 index 79

Scholarly Publications

[J] – Archival Journal Publications, [C] – Conference Papers, [B] – Books, [BC] – Book Chapters, [E] – Editorials

2026

- [J] Murakami, K., Higuchi, E., Yabuno, H., and Dankowicz, H. (2026) "Experimental verification of a data-driven approach for mass measurement in MEMS," *Journal of Sound and Vibration*, https://doi.org/10.1016/j.jsv.2026.120182.

- [J] Furihata, T., Yabuno, H., and Dankowicz, H. (2026) "Highly Sensitive Mass Sensing Using Data-Driven Iterative Learning of Resonator Dynamics," *Nonlinear Dynamics*, **114**, 769:1-12.
- [J] Dankowicz, H., Shaw, S.W., and Shoshani, O. (2026) "Improving Frequency Stability using Slowly Modulated Adaptive Feedback," *Physical Review Applied*, **25(5)**, 054050:1-16.
- [BC] Dankowicz, H. and Sieber, J. (2026) "Computational Bifurcation Analysis," to appear in *Handbook on Nonlinear Dynamics, Vibrations, and Acoustics*, **2**, (eds. Acary, V. and Gendelman, O.)

2025

- [J] Ahsan, Z., Dankowicz, H., and Kuehn, C., (2025) "Adjoint-Based Projections for Quantifying Statistical Covariance near Stochastically Perturbed Limit Cycles and Tori," *SIAM Journal on Applied Dynamical Systems*, **24(2)**, pp. 1455-1493.

2024

- [J] Tabor, W., Smith, G., and Dankowicz, H. (2024) "Escape from Fraught States in a Coordination Game," *Royal Society Open Science*, **11**, 231314.
- [J] Mao, Y. and Dankowicz, H. (2024) "On a Principle for Mass Sensing Using Self-Excited Template Dynamics of Coupled Oscillators and Root-Finding Algorithms," *Journal of Sound and Vibration*, **571**, 118027.

2023

- [J] Li, Y. and Dankowicz, H. (2023) "Model-free Continuation of Periodic Orbits in Certain Nonlinear Systems Using Continuous-Time Adaptive Control," *Nonlinear Dynamics*, **111**, pp. 4945-4957.
- [J] Mao, Y. and Dankowicz, H. (2023) "Design of Active Network Filters as Hysteretic Sensors," *Nonlinear Dynamics*, **111**, pp. 1763-1789.
- [E] Dankowicz, H. and Chiu, W.K.S. (2023) "Special Issue of Applied Mechanics Reviews in Collaboration with the Journal of Electrochemical Energy Conversion and Storage," *Applied Mechanics Reviews*, **75(1)**, art no. 010201.

2022

- [J] Ahsan, Z., Dankowicz, H., Li, M., and Sieber, J. (2022) "Methods of Continuation and their Implementation in the COCO Software Platform with Application to Delay Differential Equations," *Nonlinear Dynamics*, **107**, pp. 3181-3243. Winner of 2022 Springer Nature Nonlinear Dynamics Best Paper Award.
- [J] Dankowicz, H. and Sieber, J. (2022) "Sensitivity Analysis for Periodic Orbits and Quasiperiodic Invariant Tori Using the Adjoint Method," *Journal of Computational Dynamics*, **9(3)**, pp. 329-369.
- [C] Marry, C. Dankowicz, H., and Krishnan, G. (2022) "Continuation-Based Design of Self-Contacting Soft Robotic Manipulators," in *Advances in Nonlinear Dynamics, Proceedings of the Second International Nonlinear Dynamics Conference (NODYCON 2021)*, (eds: W. Lacarbonara *et al.*), Springer Nature Switzerland, pp. 341-350.

- [C] Ahsan, Z., Kuehn, C., and Dankowicz, H. (2022) "A Boundary Value Problem for Covariance Analysis of Stochastically Perturbed Limit Cycles," in *Proceedings of the 18th International Conference on Multibody Systems, Nonlinear Dynamics, and Control*, St Louis, MO, 2022, DETC2022-91153.

2021

- [J] Li, M. and Dankowicz, H. (2021) "A Unified Analytical Framework for a Class of Optimal Control Problems on Networked Systems," *IEEE Transactions on Control of Network Systems*, **8(4)**, pp. 1822-1832.
- [J] Rodriguez Reina, A., Nguyen, K.-D., and Dankowicz, H. (2021) "Experimental Validation of an Adaptive Controller for Manipulators on a Dynamic Platform," *Robotica*, **39(4)**, pp. 582-605.
- [J] Mao, Y. and Dankowicz, H. (2021) "Topology-Dependent Excitation Response of Networks of Linear and Nonlinear Oscillators," *ASME Journal of Computational and Nonlinear Dynamics*, **16(4)**, pp. 041001 1-10.
- [J] Li, Y. and Dankowicz, H. (2021) "Adaptive Control Designs for Control-Based Continuation of Periodic Orbits in a Class of Uncertain Linear Systems," *Nonlinear Dynamics*, **103**, pp. 2563-2579.
- [E] Dankowicz, H., Arson, C., Kulkarni, Y., Ardekani, A., Daly, S.H., Kichmann, D.M., Leamy, M., Seidel, G., Siegmund, T., Vlahovska, P., Zhao, Y. (2021) "Journal Commitment to Diversity, Equity, and Inclusion," *Applied Mechanics Reviews*, **73(2)**, art no. 020201.

2020

- [J] Li, Y. and Dankowicz, H. (2020) "Adaptive Control Designs for Control-Based Continuation in a Class of Uncertain Discrete-Time Dynamical Systems," *Journal of Vibration and Control*, **26(21-22)**, pp. 2092-2109.
- [J] Dankowicz, H., Wang, Y., Schilder, F., and Henderson, M.E. (2020) "Multidimensional Manifold Continuation for Adaptive Boundary-Value Problems," *ASME Journal of Computational and Nonlinear Dynamics*, **15(5)**, pp. 051002 1-8.
- [J] Li, M. and Dankowicz, H. (2020) "Optimization with Equality and Inequality Constraints Using Parameter Continuation," *Applied Mathematics and Computation*, **375**, pp. 125058 1-20.
- [J] Ahsan, Z., Dankowicz, H., and Sieber, J. (2020) "Optimization along Families of Periodic and Quasiperiodic Orbits in Dynamical Systems with Delay," *Nonlinear Dynamics*, **99(1)**, pp. 837-854.

2019

- [J] Li, M. and Dankowicz, H. (2019) "Impact of Temporal Network Structures on the Speed of Consensus Formation in Opinion Dynamics," *Physica A*, **523**, pp. 1355-1370.
- [J] Ahsan, Z. and Dankowicz, H. (2019) "Optimal Scheduling and Sequencing for Large-Scale Seeding Operations," *Computers and Electronics in Agriculture*, **163**, pp. 104728 1-9.
- [J] Nguyen, K.-D. and Dankowicz, H. (2019) "Input-Delay Compensation in a Robust Adaptive Control Framework," *IET Control Theory & Applications*, **13(11)**, pp. 1718-1727.

- [E] Dankowicz, H. and Balachandran, B. (2019) "Special Issue of Applied Mechanics Reviews in Collaboration with the Journal of Computational and Nonlinear Dynamics," *Applied Mechanics Reviews*, **71(5)**, art no. 050201.

2018

- [J] Li, M. and Dankowicz, H. (2018) "Staged Construction of Adjoints for Constrained Optimization of Integro-Differential Boundary-Value Problems," *SIAM Journal on Applied Dynamical Systems*, **17(2)**, pp. 1117-1151.
- [J] Li, M., Rao, V.D., Gernat, T., and Dankowicz, H. (2018) "Lifetime-Preserving Reference Models for Characterizing Spreading Dynamics on Temporal Networks," *Scientific Reports* **8**, art. no. 709.
- [J] Gernat, T., Rao, V.D., Middendorf, M., Dankowicz, H., Goldenfeld, N., and Robinson, G.E. (2018) "Automated Monitoring of Behavior Reveals Bursty Interaction Patterns and Rapid Spreading Dynamics in Honey Bee Social Networks," *Proceedings of the National Academy of Sciences*, art. no. 201713568.
- [E] Dankowicz, H., Kumar, V., and Krovi, V. (2018), "Special Issue of Applied Mechanics Reviews in Collaboration with the Journal of Mechanisms and Robotics," *Applied Mechanics Reviews*, **70(1)**, art no. 010201.

2017

- [J] Nguyen, K.-D., Li, Y., and Dankowicz, H. (2017) "Delay Robustness of an L_1 Adaptive Controller for a Class of Systems with Unknown Matched Nonlinearities," *IEEE Transactions on Automatic Control*, **62(10)**, pp. 5485-5491.
- [J] Saghafi, M., Dankowicz, H., and Tabor, W. (2017) "Emergent Task-Differentiation in Network Filters," *SIAM Journal on Applied Dynamical Systems*, 16(3), pp. 1686-1709.
- [BC] Dankowicz, H. and Fotsch, E. (2017) "On the Analysis of Chatter in Mechanical Systems with Impacts," in *Proceedings of 24th International Congress on Theoretical and Applied Mechanics*, *Procedia IUTAM* **20**, pp. 18-25.
- [BC] Nguyen, K.-D. and Dankowicz, H. (2017) "Delay Robustness and Compensation in L1 Adaptive Control," in *Proceedings of IUTAM Symposium on Nonlinear and Delayed Dynamics of Mechatronic Systems*, *Procedia IUTAM* **22C**, pp. 10-15.
- [E] Dankowicz, H. and Khonsari, M. (2017) "Special Issue of Applied Mechanics Reviews in Collaboration with the Journal of Tribology," *Applied Mechanics Reviews*, **69(6)**, art no. 060201.

2016

- [J] Nguyen, K.-D. and Dankowicz, H. (2016) "Cooperative Control of Networked Robots on a Dynamic Platform in the presence of Communication Delays," *International Journal of Robust and Nonlinear Control*, **27(9)**, pp. 1433-1461.
- [C] Li, Y., Nguyen, K.-D., and Dankowicz, H. (2016) "A Robust Adaptive Controller for a Seed Refilling System on a Moving Platform," *Proceedings of Agricontrol 2016*, Seattle, Washington, 2016.

2015

- [J] Saghafi, M. and Dankowicz, H. (2015) "Singularities in Differential-Algebraic Boundary-Value Problems Governing the Excitation Response of Beam Structures," *ASME Journal of Computational and Nonlinear Dynamics*, **10(1)**, art. no. 011017. Paper presented at the ASME 2013 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (DETC2013-13115).
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1994

- [J] Dankowicz, H. (1994) "Some Special Orbits in the Two-Body Problem with Radiation Pressure," *Journal of Celestial Mechanics and Dynamical Astronomy* **58**, pp. 353-370.

Manuscripts in preparation or review:

- [J] Higuchi, E., Murakami, K., Yabuno , H., and Dankowicz, H. "A Data-Driven Iterative Learning Technique for High-Resolution Mass Sensing in Low-Q Environments," in review.
- [J] Iklodi, Z. and Dankowicz, H., "Algebraic conditions for second-moment stability boundaries of linear, time-invariant stochastic delay-differential equations," in review.
- [J] Iklodi, Z. and Dankowicz, H., "A Study of Precision and Delay Robustness in Two Mass-Sensing Paradigms," in review.
- [J] Iklodi, Z. and Dankowicz, H., "A Discretization-Last Approach to Quantifying Uncertainty Near Limit Cycles of Stochastic Delay Differential Equations," in preparation.

Other Scholarly Products

Software

- COCO – public-domain Matlab software for general-purpose parameter continuation of sets of constrained orbit segments, 2007-present. Jointly with Frank Schilder, Jan Sieber, Mingwu Li, Zaid Ahsan, Erika Fotsch, Michael Henderson, Yuqing Wang, Pratik Mallya, Mehdi Saghafi; see http://sourceforge.net/projects/cocotools.
- MAMBO – public-domain software for modeling and analysis of multi-body systems, 1999-2003. Jointly with Arne Nordmark, Jesper Adolfsson, Kalle Andersson, Justin Hutchison, Petri Piiroinen, Anders Lennartsson, Gabriel Ortiz; see https://danko.enme.umd.edu/Mambo/.
- MAMBO TOOLBOX – public-domain plug-in for Maple/Matlab/Mathematica for modeling and analysis of multi-body systems, 1998-present; see https://danko.enme.umd.edu/Mambo/.
- TC-HAT – public-domain AUTO-compatible FORTRAN software package for continuation of periodic trajectories of hybrid dynamical systems, 2006-2007. Jointly with Phanikrishna Thota.

Software tutorials and patent applications

- Dankowicz, H., Schilder, F., and Li, M. (2015-2023) Tutorial and reference documentation for COCO: Atlas Algorithms, Core Constructors and Utilities, The Equilibrium Point Toolbox, The Trajectory Collocation Toolbox, The Periodic Orbit Toolbox, http://sourceforge.net/projects/cocotools.
- Dankowicz, H., "Systems and Methods for Suppressing Noise-Induced Phase Diffusion," US Patent Application, July 11, 2025.
- Dankowicz, H. and R. Reinke, "Self-Calibrating Mass Flow Sensor System," US Patent 9,127,972, issued on September 8, 2015.
- Dankowicz, H., Leo, D., Ballmer, A., Beeman, J., Dillon, T., Lassaletta, A. and O'Connor, R. (2005) "Computer-aided three-dimensional bending of spinal rod implants, other surgical

implants and other articles, systems for three-dimensional shaping, and apparatuses therefor", US Patent Application, http://goo.gl/f9FBh2.

- Dankowicz, H., Hutchison, J., and Shilt, J. (2005) "Systems and methods for multi-dimensional characterization and classification of spinal shape," US Patent Application, http://goo.gl/fFrvUa.

Invention Disclosures

- Dankowicz, H. and Nguyen, K., "Brush Design for Seed-Delivery Systems," invention disclosure filed on July 27, 2012, to UIUC OTM, file number TF12156.
- Dankowicz, H. and Dutta, A., "Active Ankle Foot Orthosis/Prosthesis to Enhance Gait Stability," see http://www.vtip.org, invention disclosure 03-080, 2003.

ASME Applied Mechanics Reviews Podcasts

Full-length audio interviews conducted and edited by Harry Dankowicz. Available on https://podcasts.apple.com/us/podcast/asme-applied-mechanics-reviews-podcast/id1474255644
In order of publication:

1. Avram Bar-Cohen, January 2014
2. David Barnett, April 2014
3. Markus Buehler, May 2014
4. Howard Stone, June 2014
5. Joe Goddard, July 2014
6. Anthony Bloch, July 2014
7. Karl Johan Åström, September 2014
8. Irene Beyerlein, October 2014
9. Philip Holmes, November 2014
10. Stuart Antman, December 2014
11. Katia Bertoldi, January 2015
12. Zhigang Suo, February 2015
13. Edwin Kreuzer, March 2015
14. Igor Mezic, April 2015
15. Julie Greer, June 2015
16. Melany Hunt, September 2015
17. Gabor Stepan, October 2015
18. Thomas Hughes, May 2016
19. Rodney Clifton, June 2016
20. Simon Ostrach, February 2017
21. Wei Chen, August 2018
22. Kenneth Liechti, January 2019

Funding

Around $3.7M (my share: $2.7M) as principal investigator in funded research from US and Swedish federal agencies, private firms, and foundations. Research sponsors include the National Science Foundation, the Swedish Science Council, the Swedish Engineering Research Council, the Swedish Foundation for Strategic Research, Carilion Biomedical Institute, the Commonwealth Health Research Board, the National Aeronautics and Space Administration, The National Institute of Food and Agriculture, and the Jeffress Memorial Trust.

Selected research projects:

- "INSPIRE: Asynchronous Communication, Self-Organization, and Differentiation in Human and Insect Networks," National Science Foundation, $1,006,170, 2012-2018, principal investigator (co-investigators Gene Robinson, UIUC, and Whitney Tabor, University of Connecticut).
- "Cooperative Human-Robot Networks for Agricultural Applications," National Institute of Food and Agriculture, $532,607, 2014-2018, sole investigator.
- "An Algorithm Suite for Computational Nonlinear Analysis of Power Systems," National Science Foundation, $477,878, 2010-2014, principal investigator (co-investigators Matthew West, UIUC, and Ian Hiskens, University of Michigan).
- "Ultrafast and Robust, Resettable Threshold Sensors Based on Discontinuity-Induced Nonlinearities," National Science Foundation, $302,001, 2009-2012, sole investigator.
- "Self-Calibrating Mass-Flow Sensor," John Deere & Company, $192,627, 2008-2010, sole investigator.
- "Suppression of Catastrophic Loss of Stability of Low-Velocity Impacting Motions," Swedish Science Council, $400,000, 2004-2008, co-investigator (principal investigator Annika Stensson, Royal Institute of Technology, Sweden)
- "GOALI: Minimum-Contact Tapping-Mode Atomic Force Microscopy for Nondestructive Characterization of Soft Nanostructures," National Science Foundation, $189,836, 2005-2009, principal investigator (co-investigators Ishwar Puri and Mark Paul, Virginia Tech, and Craig Prater, Veeco Inc.).
- "PECASE: Analysis and Design of Discontinuity-Driven Bifurcations," National Science Foundation, $443,001, 2003-2010, sole investigator
- "Integrated Design and Evaluation Expert System for Treatment of Idiopathic Scoliosis," Commonwealth Health Research Board, $89,989, 2003-2004, sole investigator
- "Passive Gait in Anthropomorphic, Bipedal Mechanisms including Musculoskeletal Modeling," Jeffress Memorial Trust, $50,582, 2000-2002, sole investigator

Public Appearances

- NSF Science Nation, online video, June 2014: "No leader? Now what?" https://dcmp.org/media/9071-science-nation-no-leader-now-what
- ASME Engineering News, online podcast, September 2011: "The Future of Machine Invention," http://videos.asme.org/detail/video/2149332680001/the-future-of-machine-invention
- Swedish Public Radio, P1, *Tendens*, April 12, 1996. Program on 'chaos'.

Contributed Papers at Conferences (not listed elsewhere)

- *Chaos, Degeneracy, and the Three-Body Problem,*
  Swedish Mechanics Days 1993, Boras, Sweden
- *Some Special Orbits in the Two-Body Problem,*
  Swedish Mechanics Days 1993, Boras, Sweden
- *Looking for Chaos. An Extension and Alternative to Melnikov's Method,*
  US Dynamics Days 1994, Durham, North Carolina, USA
- *Local Models of Spatio-Temporally Complex Fields,*
  The Northeast Dynamics Meeting 1995, Hartford, Connecticut, USA
  The NATO/ASI workshop on From Finite to Infinite Dimensional Systems, 1995, Cambridge, England
- *Escape of Particles Orbiting Asteroids through Arnol'd Diffusion*
  Conference on Ordinary and Partial Differential Equations 1996, Dundee, Scotland
- *Dynamical Friction Modeling,*
  Swedish Mechanics Days 1997, Luleå, Sweden
  SIAM Conference on Applications of Dynamical Systems 1997, Snowbird, Utah, USA
  Contact Mechanics 1997, Madrid, Spain
  3rd EUROMECH Solid Mechanics Conference 1997, Stockholm, Sweden
- *3D Stable Gait in Passive Bipedal Mechanisms,*
  Euromech 357, Biology and Technology of Walking, 1998, Munich, Germany
- *Stick-Slip Oscillations -- Quo Vadis,*
  International Symposium on Impact and Friction in Structures and Mechanisms, 1998, Ottawa, Canada
  European Nonlinear Oscillations Conference 1999, Copenhagen, Denmark
- *Slow Diffusion and Effective Stability of Dust Particles Orbiting Asteroids,*
  SIAM Conference on Applications of Dynamical Systems 1999, Snowbird, Utah, USA
  European Nonlinear Oscillations Conference 1999, Copenhagen, Denmark

- *Stability analysis of passive, bipedal gait in a three-dimensional environment,*
  International Workshop on Symmetry and Stability in Nonlinear Mechanics, 2000, Budapest, Hungary,
  ICTAM 2000, Chicago, Illinois, USA
- *A Successive Constraint Imposition Approach to Multibody Mechanics,*
  1st SIAM Conference on Computational Science and Engineering, 2000, Washington, D.C., USA
- *Grazing Bifurcations of Initially Quasi-Periodic System Attractors,*
  18th Biennial Conference on Mechanical Vibration and Noise, 2001, Pittsburgh, Pennsylvania, USA.
- *Exploiting Discontinuities for Stabilization of Recurrent Motion,*
  Dynamics Days, 2002, Baltimore, Maryland, USA.
  14th US National Congress of Theoretical and Applied Mechanics, 2002, Blacksburg, Virginia, USA
- *Stabilizing Control of 2D and 3D Passive Walkers*
  Ninth Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures, 2002, Blacksburg, Virginia, USA
- *Low-Cost Control of Repetitive Gait in Passive Bipedal Walkers*
  Twenty-first Southern Biomedical Engineering Conference, 2002, Bethesda, Maryland, USA
- *Low-Cost Control of Impact Hammer Performance*
  19th Biennial Conference on Mechanical Vibration and Noise, 2003, Chicago, Illinois, USA
- *Design of an actuated ankle-foot orthosis for improved gait stability*
  2003 Biomedical Engineering Society Annual Fall Meeting, Nashville, Tennessee, USA
- *Characterizing Grazing Contact Between Quasiperiodic Attractors and State-space Discontinuities*
  Dynamics Days 2004, Chapel Hill, North Carolina
- *Grazing Bifurcations of Quasiperiodic System Attractors*
  Dynamics Days 2004, Chapel Hill, North Carolina
- *A Normal-form Analysis of Co-dimension-two Grazing Bifurcations in Impact Oscillators*
  Dynamics Days 2004, Chapel Hill, North Carolina
- *Grazing Bifurcation of Quasiperiodic System Attractors*
  Tenth Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures, 2004, Blacksburg, Virginia, USA
- *Modeling and Simulation of Impact Microactuators*
  Tenth Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures, 2004, Blacksburg, Virginia, USA
- *Analysis of Grazing Bifurcations in Impact Microactuators*
  ICTAM 2004, Warsaw, Poland
- *Discontinuity-driven Design and Control of an Impact Microactuator*
  International workshop on Piecewise Smooth Dynamical Systems: Analysis, Numerics, and Applications, Bristol University, 2004, Bristol, United Kingdom
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2005

- *Control of Near-Grazing Dynamics in Impact Oscillators*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2005
- *Continuous and Discontinuous Grazing Bifurcations in Impact Oscillators*
  EUROMECH Nonlinear Dynamics Conference, Eindhoven, The Netherlands, 2005
- *Near-Grazing Dynamics in Tapping-Mode Atomic Force Microscopy*
  EUROMECH Nonlinear Dynamics Conference, Eindhoven, The Netherlands, 2005
- *Characterization of Intermittent Contact in Tapping Mode Atomic Force Microscopy*
  5th ASME International Conference on Multibody Systems, Nonlinear Dynamics and Control, Long Beach, California, 2005
- *Teaching Advanced Modeling of Multibody Mechanisms to Non-Traditional Engineering Students*
  ASEE, 2006 Illinois-Indiana and North Central Joint Section Conference, Fort Wayne, Indiana, 2006
  Conference on Rethinking the Mathematics Curriculum for Engineering and Science Students, Atlanta, Georgia, 2006
- *Energy Transfer in Vibratory Systems with Friction Due to Low-Velocity Collisions*
  Second International Conference on Nonlinear Normal Modes and Localization in Vibrating Systems, Samos, Greece, 2006
  Eleventh Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures, Blacksburg, Virginia, 2006
- *Quantifying the Dynamics of Tapping Mode Atomic Force Microscopy*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2007
- *Algorithms and Computer-Aided Tools for Predicting Progression of Three-Dimensional Spinal Deformity in Patients with Idiopathic Adolescent Scoliosis*
  45th Annual Technical Meeting, Society of Engineering Science, Champaign, IL, 2008
- *A New Development Platform for Computational Bifurcation Analysis*
  Workshop on Bifurcations in Dynamical Systems with Applications, Bielefeld, Germany, 2008
- *Controlled Onset of Low Velocity Collisions in Vibro-Impacting Systems with Friction*
  ICTAM 2008, Adelaide, Australia
- *Reduced-Order Models of Electrostatically Actuated Flexible MEMS Structures Suffering Impacts*
  EUROMECH Colloquium 503, Rome, Italy, 2009
- *On the Effects of Higher-Order Nonlinearities on the Frequency Characteristics of Vibration Microbeams*
  Thirteenth Conference on Nonlinear Vibrations, Dynamics, and Multibody Systems Blacksburg, Virginia 2010
- *A Lumped-Parameter Model of Tire-Terrain Interactions for Off-Road Vehicles*
  Duke Vibrations Workshop, Durham, NC, 2010
- *A Matlab Continuation Toolbox for Response Tracking in Experiments*
  EUROMECH Nonlinear Dynamics Conference, Rome, Italy, 2011
- *Continuation of Connecting Orbits with Lin's Method using COCO*
  EUROMECH Nonlinear Dynamics Conference, Rome, Italy, 2011

- *A Micro-Electro-Mechanical Realization of a Tunable Crowbar Device*
  EUROMECH Nonlinear Dynamics Conference, Rome, Italy, 2011
- *Atlas Algorithms, Event Handling, and Mesh Adaptation in a New Platform for Parameter Continuation and Bifurcation Analysis in Dynamical Systems*
  6th European Congress on Computational Methods in Applied Sciences and Engineering, Vienna, Austria, 2012
- *Period-Adding Cascades in Models of the Eukaryotic Cell Cycle*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2013
- *Singular Boundary-Value Formulations for Nonlinear Beams*
  EUROMECH Nonlinear Dynamics Conference, Vienna, Austria, 2014
- *Atlas Merging Algorithms and Parallelization*
  EUROMECH Nonlinear Dynamics Conference, Vienna, Austria, 2014
- *Analysis of Cloud Particle Activation using Numerical Continuation*
  EUROMECH Nonlinear Dynamics Conference, Vienna, Austria, 2014
- *Mechanisms of Recruitment and Inhibition on a Time-Dependent Interaction Network*
  Keck Futures Initiative. Collective Behavior: From Cells to Societies, Irvine, CA, 2014
- *Continuation of Chatter in a Mechanical Valve*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2015
- *Analysis of Periodic Chatter in a Mechanical Pressure Relief Valve*
  ASME 11th International Conference on Multibody Systems, Nonlinear Dynamics, and Control, Boston, Massachusetts, 2015
- *Nonlinear Tuning of Microresonators for Dynamic Range Enhancement*
  EquaDiff 2015, Lyon, France, 2015
- *Automated Tracking of Individuals Reveals Temporal Structure and Resiliency of Honey Bee Social Networks*
  Conference on Complex Systems 2015, Tempe, Arizona, 2015
- *Emergent Task Differentiation in Network Filters*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2017
  Keck Futures Initiative. Beyond Boundaries, Irvine, CA, 2017
- *Embedded Construction of Adjoint Equations for Optimization Using Continuation*
  EUROMECH Nonlinear Dynamics Conference, Budapest, Hungary, 2017
- *Temporal-Structure-Preserving Network Transformations for Characterizing Information Spreading Capacity*
  SIAM Workshop on Network Science, Pittsburgh, Pennsylvania, 2017
- *Multidimensional Manifold Continuation for Adaptive Boundary-Value Problems with COCO*
  SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, 2019
- *Designing Nonlinear Network Filters*
  14th World Congress on Computational Mechanics and European Congress on Computational Methods in Applied Sciences and Engineering 2020, virtual, 2021
- *A Survey of the State of the Art in Continuation Techniques and their Applications*
  SIAM Conference on Applications of Dynamical Systems, Virtual, 2021
- *A Computational Platform for Constrained Design Optimization of Dynamical Systems*
  ICTAM 2020+1, Virtual, 2021

- *A Multi-Dimensional Atlas Algorithm for Variable-Mesh Boundary-Value Problems*
  10th European Nonlinear Dynamics Conference, Lyon, France, 2022
- *An Efficient Implementation for the Analysis of Extrema in Dynamical Systems with Delay*
  10th European Nonlinear Dynamics Conference, Lyon, France, 2022
- *Model-Free Continuation Using Discrete and Continuous-Time Adaptive Control*
  SIAM Conference on Applications of Dynamical Systems, Portland, Oregon, 2023
- *Parameter Continuation and Uncertainty Quantification Near Stochastically Perturbed Limit Cycles and Tori*
  Frontiers in Applied Dynamical Systems, Cork, Ireland, 2024
  2024 NZMS, AMS, AustMS Joint Conference, Auckland, New Zealand, 2024
  1st Canadian Congress on Computational Science and Engineering, Montreal, Canada, 2026
- *Retrospective on the Control of Discontinuity-induced Bifurcations of Periodic Orbits in Vibro-impact Systems*
  SIAM Conference on Applications of Dynamical Systems, Denver, Colorado, 2025
- *Quantifying cross-correlation of near-periodic stochastic trajectories in the small noise limit*
  20th U.S. National Congress on Theoretical and Applied Mechanics, Pasadena, California, 2026
  (presented by Zsolt Iklodi)
- *Quantifying Statistical Covariance near Limit Cycles of Autonomous Delay Differential Equations*
  The VII International AMMCS Interdisciplinary Conference, Waterloo, Ontario, Canada, 2026
  (presented by Zsolt Iklodi)

Academic Seminars (not listed elsewhere)

- *Some Special Orbits in the Two-Body Problem with Radiation Pressure,*
  Cornell Univ., Dept. of Space Sciences, USA, 1992
  Cornell Univ., Dept. of Theoretical and Applied Mechanics, USA, 1993
- *Chaos, Degeneracy, and the Three-Body Problem,*
  Cornell Univ., Program of Applied Mathematics, USA, 1993
- *Local Models of Spatio-Temporally Complex Fields,*
  Princeton Univ., Program for Applied and Computational Mathematics, USA, 1995
  KTH, Dept. of Mechanics, Sweden, 1996
- *Regular Celestial Mechanics and Radiation Pressure,*
  KTH, Dept. of Mechanics, Sweden, 1995
- *Evolving Control Strategies for Suppressing Heteroclinic Bursting in the Turbulent Boundary Layer,*
  KTH, Dept. of Mechanics, Sweden, 1996
  Cornell Univ., Dept. of Theoretical and Applied Mechanics, USA, 1996
  Univ. of Maryland at College Park, Inst. for Physical Science and Technology, USA, 1996
  Univ. of Maryland at College Park, Dept. of Mechanical Engineering, USA, 1997
- *Escape of Particles Orbiting Asteroids through Arnol'd Diffusion*
  Brown Univ., Division of Applied Mathematics, USA, 1996
- *Dynamic Friction Modeling,*
  Univ. of Pennsylvania, Dept. of Mechanical Engineering and Applied Mechanics, USA, 1997

Univ. of Colorado at Boulder, Dept. of Mechanical Engineering, USA, 1997
Linköping's Technical Institute, Dept. of Mechanics, Sweden, 1997
Technical Univ. of Denmark, Dept. of Mathematical Modelling, Denmark, 1997

- *On the Origin and Bifurcations of Stick-Slip Oscillations*
  Univ. of Maryland at College Park, Inst. for Physical Science and Technology, USA, 1998
  Princeton Univ., Program for Applied and Computational Mathematics, USA, 1998
  Brown Univ., Division of Applied Mathematics, USA, 1998
  KTH, Dept. of Mathematics, Sweden, 1999
  MIT, Dept. of Mechanical Engineering, USA, 2000
- *Stable* 3D *Gait in Two-Legged Mechanisms*
  MIT, Leg Laboratory, USA, 1998
  Boston Univ., Dept. of Mechanical Engineering, USA, 1998
  Brown Univ., Dept. of Computer Science, USA, 1998
  Yale Univ., Dept. of Mechanical Engineering, USA, 1998
  Chalmers Univ. of Technology, Dept. of Mechanics, Sweden, 1999
  KTH, Dept. of Mechanics, Sweden, 1999
  KTH, Center for Autonomous Systems, Sweden, 1999
  Virginia Tech, Dept. of Engineering Science and Mechanics, USA, 1999
  Univ. of Minnesota, Dept. of Aerospace Engineering and Mechanics, USA, 1999
- *Slow Diffusion and Effective Stability of Dust Particles Orbiting Asteroids,*
  Virginia Tech, Dept. of Mathematics, USA, 1999
  Virginia Tech, Dept. of Engineering Science and Mechanics, USA, 1999
- *A Successive Constraint Imposition Approach to Multibody Mechanics,*
  Cornell Univ., Dept. of Theoretical and Applied Mechanics, USA, 2001
- *Teaching Advanced Modeling of Multi-Body Mechanisms to Non-Traditional Engineering Students,*
  Univ. of Pennsylvania, Dept. of Mechanical Engineering and Applied Mechanics, USA, 2001
  Royal Institute of Technology, Dept. of Machine Design, Sweden, 2006
  Michigan State University, Dept. of Mechanical Engineering, USA, 2006
- *Exploiting Discontinuities for the Control of Recurrent Motion in Non-smooth Dynamical Systems,*
  Virginia Tech, Dept. of Engineering Science and Mechanics, USA, 2002
  Virginia Tech, Dept. of Electrical and Computer Engineering, USA, 2002
  Virginia Tech, Dept. of Physics, USA, 2002
- *Discontinuity-Driven Design and Control of Impact Microactuators*
  University of Maryland, Dept. of Mechanical Engineering, USA, 2005
  University of Delaware, Dept. of Mathematical Sciences, USA, 2005
  University of Illinois at Urbana-Champaign, Dept. of Mechanical & Industrial Engineering, USA, 2005
  Cornell University, Dept. of Theoretical and Applied Mechanics, USA, 2005

- *Near-Grazing Dynamics in Tapping-Mode Atomic Force Microscopy*
  University of Illinois at Urbana-Champaign, Dept. of Mechanical & Industrial Engineering/Dept. of Mathematics, USA, 2005
- *On the purposeful coarsening of smooth vector fields*
  Michigan State University, Dept. of Mechanical Engineering, USA, 2006
- *Tapping at the Nanoscale: Discontinuity-Induced Degeneracies in Atomic Force Microscopy*
  University of Maryland at College Park, Dept. of Mechanical Engineering, USA, 2009
- *Degenerate Discontinuity-Induced Bifurcations in Tapping-Mode Atomic-Force Microscopy*
  Sapienza University of Rome, Dept. of Structural and Geotechnical Engineering, Italy, 2009
- *A New Development Platform for Parameter Continuation and Bifurcation Analysis in Nonlinear Dynamical Systems*
  University of Bristol, Dept. of Engineering Mathematics, United Kingdom, 2009
- *Control of Discontinuity-Induced Bifurcations in Mechanical Systems with Intermittent Contact*
  University of Wisconsin at Madison, Dept. of Engineering Physics, USA, 2010
- *A Lumped-Parameter Model of Tire-Terrain Interactions for Off-Road Vehicles*
  University of Illinois at Urbana-Champaign, Beckman Institute, USA 2010
- *Friction-induced Reverse Chatter in Rigid-body Mechanisms with Impacts*
  University of South California, Dept. of Aerospace and Mechanical Engineering, October 2010
  University of Michigan, Dept. of Mechanical Engineering, November 2010
  University of Maryland Baltimore County, April 2011
  University of North Carolina Charlotte, April 2011
  University of Connecticut, July 2011
  Polytechnic Institute of New York University, April 2012
- *Period-Adding Cascades in Models of the Eukaryotic Cell Cycle*
  The University of Auckland, Department of Mathematics, New Zealand, February 2014
- *Tools of the Trade – An Inventory of Techniques for Modeling, Analysis and Control of Mechanical Systems with Friction and Impact*
  University of Bristol, Department of Engineering Mathematics, United Kingdom, July 2014
- *Tutorial workshop on the Matlab-based Computational Continuation Core*
  University of Bristol, Department of Engineering Mathematics, United Kingdom, July 2014
- *Discontinuity-induced Bifurcations in Models of Mechanical Contact, Capillary Adhesion, and Cell Division*
  McGill University, Department of Mechanical Engineering, Quebec, Canada, September 2014
- *Emergent Coordination in Leaderless Networks*
  Clarkson University, Department of Mechanical and Aeronautical Engineering, Potsdam, NY, November 2014
- *Adaptive Control of Underactuated Robots with Unmodeled Dynamics*
  Jet Propulsion Laboratory, CA, November 2014
- *Adaptive Control of Networks of Robotic Manipulators*
  Technion Institute of Technology, Faculty of Mechanical Engineering, Haifa, Israel, January 2018

- *Emergent Task Differentiation on Network Filters*
  Hebrew University, Federmann Center for the Study of Rationality, Jerusalem, Israel, January 2018
  The Weizmann Institute of Science, Rechovot, Israel, January 2019
- *Short Course and Software Workshop on Nonlinear Parameter-Continuation Methods*
  Technion Institute of Technology, Faculty of Mechanical Engineering, Haifa, Israel, January 2018
  The Weizmann Institute of Science, Rechovot, Israel, January 2019
- *Information Flows, Distributed Optimization, and Emergent Task Differentiation on Network Filters*
  National Institute of Justice, Workshop on Jails as Complex Adaptive Systems, Washington, DC, March 2020
- *Design of Self-Excited Oscillator Networks as Nonlinear Dynamic Sensors*
  University of Washington, Department of Mechanical Engineering, Seattle, WA, May 2022
- *Uncertainty Quantification near Stochastically Perturbed Limit Cycles and Tori Using COCO-Compatible Boundary-Value Problems*
  University of Exeter, Centre for Systems, Dynamics and Control, Exeter, United Kingdom, April 2023
- *Using Self-Excited Template Dynamics and Root-Finding Algorithms for Sensor Design*
  University of Maryland, Department of Mechanical Engineering, February 2024
  University of Houston, Department of Mechanical and Aerospace Engineering, August 2024
  New Jersey Institute of Technology, Department of Mathematics, March 2025
- *Peaks, Valleys, and Blur: Optimization and Uncertainty Quantification*
  Cassyni Research Seminar, May 2024, https://doi.org/10.52843/cassyni.xm90tm
- *Parameter Continuation and Uncertainty Quantification Near Stochastically Perturbed Limit Cycles and Tori*
  University of Maryland, Department of Mechanical Engineering, April 2025
  University of Maryland, Applied Mathematics & Statistics, and Scientific Computation Program, April 2025
- *Suppression of Noise-Induced Phase Diffusion in Micromechanical Oscillators*
  University of Maryland, Department of Mechanical Engineering, April 2025
  Johns Hopkins University, Department of Mechanical Engineering, November 2025

Teaching Experience

- Teaching assistant in the Dept. of Mechanics, KTH, 1990/91. Undergraduate and upper-level undergraduate courses in *basic mechanics and analytical mechanics*.
- Teaching assistant in the Dept. of Theoretical and Applied Mechanics, Cornell Univ., 1993/94. Upper-level undergraduate course in *differential equations*.
- Graduate-level course on *infinite-dimensional dynamical systems,* Dept. of Mechanics, KTH, 1996/97.
- Upper-level undergraduate and graduate course *on advanced dynamics of complex multibody mechanisms*, Dept. of Mechanics, KTH, 1997.

- Introductory course in *multi-body mechanics and visualization* for computer science undergraduates, Dept. of Mechanics, KTH, 1999.
- Sophomore *statics* in Dept. of Engineering Science and Mechanics, Virginia Tech.
- Graduate level course on *advanced vibrations*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Upper-level undergraduate engineering science elective for electrical and computer engineers on *multi-body mechanics and visualization*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Sophomore introduction to *differential equations*, Dept. of Mathematics, Virginia Tech.
- Advised several groups of Engineering-Science-and-Mechanics and Mechanical-Engineering senior students in *biomedical-engineering capstone design projects*, Virginia Tech.
- Senior-level introduction to *nonlinear dynamics and chaos*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Graduate-level course on *intermediate dynamics*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Graduate-level course on *energy and variational methods in applied mechanics*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Graduate-level course on *advanced dynamics*, Dept. of Engineering Science and Mechanics, Virginia Tech.
- Junior-level course on *modeling and analysis of dynamic systems*, Dept. of Mechanical and Industrial Engineering, UIUC.
- Upper-level undergraduate and graduate elective on *multibody mechanics and visualization*, Dept. of Mechanical and Industrial Engineering, UIUC.
- Upper-level undergraduate and graduate elective on *kinematics and dynamics of mechanical systems*, Dept. of Mechanical Science and Engineering, UIUC.
- Upper-level undergraduate required course and graduate elective on *intermediate dynamics*, Dept. of Mechanical Science and Engineering, UIUC.
- Graduate-level course on *mathematical methods of engineering*, Dept. of Mechanical Science and Engineering, UIUC.
- Freshman *calculus*, UIUC.
- Graduate-level course on *computational nonlinear dynamics*, Dept. of Mechanical Science and Engineering, UIUC.
- Sophomore-level course on *dynamics*, Keystone Program, UMD.
- Junior-level course on *statistical methods for product and processes development*, Dept. of Mechanical Engineering, UMD.
- Graduate-level course on *generative engineering AI*, MAGE Program, UMD.

Advisory Activity

M.Sc.

- Christopher Marry, Mechanical Science and Engineering, non-thesis, UIUC, 2022
- Cole Anderson, Mechanical Science and Engineering, UIUC, 2018
- Marie Biscarrat, Mechanical Science and Engineering non-thesis, UIUC, 2018
- Yuqing Wang, Mechanical Science and Engineering, UIUC, 2018
- Tonghui Cui, Mechanical Science and Engineering, UIUC, 2017
- Andres Rodriguez Reina, Mechanical Science and Engineering, UIUC, 2017
- Erika Fotsch, Mechanical Science and Engineering, UIUC, 2016
- Pratik Mallya, Computer Science, UIUC, 2014
- John Sanders, Mechanical Science and Engineering, UIUC, 2013
- Janglih Lin, Mechanical Science and Engineering, UIUC, 2012
- David Kijowski, Mechanical Science and Engineering, UIUC, 2011
- Pravesh Sanghvi, Mechanical Science and Engineering, UIUC, 2010
- Ryan Reinke, Mechanical Science and Engineering, UIUC, 2010
- Michael Katzenbach, Mechanical Science and Engineering, UIUC, 2010
- Melih Eriten, Applied Mathematics non-thesis, UIUC, 2008
- Ryan Pilson, Mechanical Engineering, Virginia Tech, 2006
- Dean Entrekin, School of Biomedical Engineering and Sciences, Virginia Tech, 2004
- Gunjan Thakur, Engineering Science and Mechanics, Virginia Tech, 2004
- David Ruppert, Mechanical Engineering, Virginia Tech, 2003
- Colleen Shannon, Mechanical Engineering, Virginia Tech, 2003
- Klas Blomström, Mechanical and Materials Engineering, KTH, 1999
- Anna Glennmar, Vehicle Engineering, KTH, 1999
- Urban Dahlberg, Engineering Physics, KTH, 1998

Ph.D.

- Yu Mao, Mechanical Science and Engineering, UIUC, 2022
- Zaid Ahsan, Mechanical Science and Engineering, UIUC, 2022
- Mingwu Li, Mechanical Science and Engineering, UIUC, 2020
- Yang Li, Mechanical Science and Engineering, UIUC, 2019
- Kim Nguyen, Mechanical Science and Engineering, UIUC, 2015
- Louis DiBerardino, Mechanical Science and Engineering, UIUC, 2014 (co-advised with Prof. Elizabeth Hsiao-Wecksler)
- Mehdi Saghafi, Mechanical Science and Engineering, UIUC, 2014
- Bryan Wilcox, Mechanical Science and Engineering, UIUC, 2010

- Fredrik Svahn, Aeronautical and Vehicle Engineering, KTH, 2009 (co-advised with Prof. Annika Stensson)
- Sambit Misra, Mechanical Science and Engineering, UIUC, 2009
- Phanikrishna Thota, Engineering Science and Mechanics, Virginia Tech, 2007
- Petri Piiroinen, Mechanics, KTH, 2002
- Jesper Adolfsson, Mechanics, KTH, 2001 (unofficial, co-advised with Prof. Martin Lesser)

Post-docs

- Zsolt Iklodi, Mechanical Engineering, UMD, 2025-present
- Kim Nguyen, Mechanical Science and Engineering, UIUC, 2015-2016
- Mehdi Saghafi, Mechanical Science and Engineering, UIUC, 2014-2015
- Weibing Deng, Mechanical Science and Engineering, UIUC, 2013-2014
- Michael Jeffrey, Mechanical Science and Engineering, UIUC, 2010-2011
- Xiaopeng Zhao, Engineering Science and Mechanics, Virginia Tech, 2004-2005

Other graduate student collaborators

- Noelani Thompson, Engineering Science and Mechanics, Virginia Tech
- Brendan Chan, Mechanical Engineering, Virginia Tech
- Nastaran Hashemi, Virginia Tech
- Anirban Dutta, Virginia Tech
- Jenny Jerrelind, Aeronautical and Vehicle Engineering, KTH
- Wonmo Kang, UIUC
- Kiwon Park, UIUC
- Mazharul Islam, UIUC
- Guillermo Colin, UIUC
- Nilay Jadav, UMD

University Service

- Member of department Honors and Awards Committee, UMD, 2024-2026
- Member of MOOC and Online Strategy Advisory Committee, UIUC, 2018
- Member of Higher Learning Commission Criterion 5 Working Group, UIUC, 2018-2020
- Member of Steering Committee and Sloan Scholarship Board for Sloan University Center of Exemplary Mentoring at Illinois, UIUC, 2016-2021
- Organizer of Horizon 2020 Grants Information Workshops, UIUC, March 2014
- Office of Vice Chancellor for Research Faculty Coordinator for Horizon 2020 initiatives, UIUC, 2014

- Faculty liaison for INSPIRE (The Illinois-Sweden Program for Educational and Research Exchange), UIUC, 2010-2016
- Co-organizer of INSPIRE Stage I and Stage II Research Symposia in Urbana (December 2010) and in Stockholm (May 2011), and the INSPIRE Alliance Summit in Urbana (April 2012)
- Webmaster, INSPIRE, UIUC, 2011-2016
- Faculty Senate, UIUC, 2008-2009, 2010-2012, 2015-2016
- Calculus Project Coordinator, College of Engineering, UIUC, 2009-2011
- Equal Opportunity and Affirmative Action Officer, UIUC, 2011-2012
- Faculty advisor, University of Illinois Rube Goldberg Team, 2008-2013
- Member of department ad-hoc committee on Collaboration Climate, UIUC, 2018
- Member of department ad-hoc committee on Undergraduate Mentoring, UIUC, 2009
- Member of departmental Advisor Committee, UIUC, 2008-2009
- Member of departmental Faculty Recruiting Committee, UIUC, 2007-2010
- Member of college Engineering-Mathematics Liaison Subcommittee, UIUC, 2006-2011
- Member of departmental Undergraduate Program Committee, UIUC, 2006-2010, 2011-2014
- Member of departmental ad-hoc committee on Future of Mechanics, UIUC, 2006
- Member of departmental Graduate Program Committee, UIUC, 2006-2007
- Member of departmental Graduate Admissions Committee, UIUC, 2006, 2010
- Member of departmental Awards Committee, UIUC, 2006-2007
- Member of Applied Mathematics Steering Committee, UIUC, 2005-2006
- Honors advisor for departmental James Scholars, UIUC, 2005-2010
- Member of departmental Executive Committee, Virginia Tech, 2004-2005
- Member of departmental Strategic Thinking Committee, Virginia Tech, 2004
- Member of College of Engineering Dean search committee, Virginia Tech, 2005
- Chair of departmental Computing Resources Committee, Virginia Tech, 2003-2005
- Member of departmental Undergraduate Curriculum Committee, Virginia Tech, 2000-2004
- Member of department Computing Resources Committee, Virginia Tech, 2000-2002
- Webmaster, Center for Biomedical Engineering at Virginia Tech, 1999-2002
- Layout, editing, and production of the Center for Biomedical Engineering at Virginia Tech promotional poster
- Layout, editing and production of the Dept. of Mechanics, KTH, promotional brochure, 1997-1999
- Editing and production of the Dept. of Mechanics, KTH, SAFARI homepages, 1998-1999
- Head of the project Alternative Approaches to the Mobility of Mechanisms, KTH, 1997-2002

Professional Service

Editorial duties

- Chair, ASME Board of Editors, 2027-2029
- Editor-in-Chief, ASME Applied Mechanics Reviews, 2012-2022
- Associate Editor, SIAM Journal on Applied Dynamical Systems, 2012-2016
- Member of Editorial Board, Journal of Computational Dynamics, 2011-2015
- Associate Editor, Journal of Computational and Nonlinear Dynamics, 2005-2011; Guest Editor, special issue for Philip Holmes, 2005-2006
- Contributing Editor, International Journal of Non-Linear Mechanics, 2005-2011; Guest Editor, special issues on "Micro- and Nanoscale Beam Dynamics," 2006; "Nonlinear Dynamics and Mechanics of Macromolecules," 2008; "Non-Linear Mechanics of Biological Structures," 2010
- Editor Selection Committee, ASME Journal of Biomechanical Engineering, 2020

Societal duties

- Member, SIAM Committee on Science Policy, 2025-2027
- Member and Secretary, ASME Mechanical Engineering Department Heads Executive Committee, 2025
- ASME Technical Committee on Multibody Systems and Nonlinear Dynamics, member (2005-2017), Recording Secretary (2009-2011), Vice-Chair (2011-2013), Chair (2013-2015)
- Society of Engineering Science (SES), member (2008-2012), Board of Directors/Recording Secretary (2010-2012)
- Member, Society for Industrial and Applied Mathematics (SIAM), 1997-present
- Member, ASME, 2002-present
- Member, ASEE, 2000-2026
- Member, EUROMECH, 1998-2001, 2011-2012
- Member, AAM, 2005-2007

Conference organization

- Member of Scientific Committee of NSD2025, EUROMECH Colloquium 657, Recent Advances in Nonsmooth Dynamics, Exeter, United Kingdom, 2025
- Co-organizer of symposium on "Computational Methods," 10th European Nonlinear Oscillations Conference, Lyon, France, 2022.
- Co-organizer of symposium on "Algorithms and Software for Parameter Continuation in Complex Systems," 2021 SIAM Conference on Applications of Dynamical Systems, Virtual, May 2021.
- Co-organizer of symposium on "Dynamical Systems Software," 2019 SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 2019.

- Co-organizer of symposium on "Computational Methods," 2017 European Nonlinear Oscillations Conference, Budapest, Hungary, June 2017.
- Co-organizer of symposium on "Dynamics of Non-Smooth Systems, Contact, and Impact," 11th International Conference on Multibody Systems, Nonlinear Dynamics, and Control and 27th Conference on Mechanical Vibration and Noise, August 2-5, 2015.
- Co-organizer of symposium on "Computational Methods," 2014 European Nonlinear Oscillations Conference, Vienna, Austria, July 2014.
- General Conference Co-chair, ASME 2013 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Portland, Oregon, August 4-7, 2013.
- Conference Co-Chair, 1st Biennial International Conference on Dynamics for Design, Chicago, IL, August 15-18, 2012.
- Program Chair, 8th International Conference on Multibody Systems, Nonlinear Dynamics, and Control, Washington D.C., August 28-August 31, 2011.
- Technical Program co-chair, ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, Washington D.C., August 28-August 31, 2011.
- Co-organizer of symposium on "Computational Methods," 2011 European Nonlinear Oscillations Conference, Rome, Italy, July 24-29, 2011.
- Co-organizer of symposium on "Dynamic Atomic Force Microscopy," 4th International Conference on Micro- and Nanosystems, Montreal, Canada, August 15-18, 2010.
- Member, Organizing Committee, "Special Conference on Mechanical Vibration and Noise," to be held as part of the ASME 2010 International Design and Engineering Technical Conferences & Computers and Information in Engineering Conference, Montreal, Canada, August 15-18, 2010.
- Co-organizer of symposium on "Computational Methods for Dynamical Systems Analysis," 16th US National Congress on Theoretical and Applied Mechanics, University Park, Pennsylvania, June 27-July 2, 2010.
- Co-organizer of symposium on "Musculoskeletal Biomechanics and Bioassistive Devices" and "Computational Methods for Nonlinear Dynamics Analysis," 7th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC), San Diego, California, August 30-September 2, 2009.
- Technical Program co-chair, ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, San Diego, August 30-September 2, 2009.
- Co-organizer of symposium on "Dynamics of Biomechanical Processes," Society of Engineering Science 2008, Champaign, Illinois, October 12-15, 2008
- Co-organizer of "Workshop on Behavioral and Cognitive Dynamical Systems," Cornell University, Ithaca, NY, August 2007

- Co-organizer of symposium on "Musculoskeletal Biomechanics and Bioassistive Devices" and "Analysis and Applications of Discontinuous Dynamical Systems," 6th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC), Las Vegas, Nevada, September 4-7, 2007.
- Co-organizer of symposium on "Non-Smooth Dynamics, Micro-Scale Systems and Nonlinear Resonance," 5th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC), Long Beach, California, September 24-28, 2005.
- Member, Organizing Team, 19th Southern Biomedical Engineering Conference, Blacksburg, Virginia, April 14-16, 2000

Select journal, book, and proposal review

- AIAA Journal
- ASME Journal of Vibration and Acoustics
- ASME Journal of Applied Mechanics
- ASME Journal of Mechanical Design
- Astronomy and Astrophysics
- Chaos
- Dynamics and Stability of Systems
- European Journal of Mechanics/Solids
- IEEE Transactions on Robotics
- Indian Journal of Pure and Applied Mathematics
- International Journal of Bifurcation and Chaos
- International Journal of Non-Linear Mechanics
- International Journal of Robust and Nonlinear Control
- Journal of Applied Mathematics and Computation
- Journal of Astronautical Sciences
- Journal of Tribology
- Journal of Celestial Mechanics and Dynamical Astronomy
- Journal of Nonlinear Science
- Journal of Sound and Vibration
- Journal of Differential Equations
- Journal of Guidance, Control, and Dynamics
- Journal of Vibration and Acoustics
- Journal of Vibration and Control
- Materials Today Magazine
- Nonlinear Dynamics
- Nonlinearity
- Physica A

- Physica D
- SIAM Journal of Applied Dynamical Systems
- Systems & Control
- Princeton Academic Press
- ZAMM
- Birkhauser
- Academic Press
- Elsevier
- Springer Verlag
- Swedish Engineering Research Council
- Swedish Science Council
- National Science Foundation
- US Civilian Research and Development Foundation
- Engineering and Physical Sciences Research Council, United Kingdom
- University of Missouri Research Board
- ASME, Design and Technical Conferences
- European Nonlinear Oscillations Conference
- AIAA Young Professionals Paper Competition