

Kristin Yvonne Rozier

Curriculum Vitæ

Iowa State University, 2335 Howe Hall, 537 Bissell Road, Ames, IA 50011-2271 Email: kyrozier@iastate.edu
<http://laboratory.temporallogic.org/kyr>

Research Expertise

- Formal methods, verification and validation of safety-critical systems with a particular focus on robots and cobots (collaborative robots)
- Design-time checking of system logic and system requirements with applications in air traffic management, aerospace systems, automated control, avionics, biomedical privacy, secure protocols
- Runtime Verification (RV), safety, security, and health management for intelligent, autonomous systems (Unmanned Aerial Systems, robots, rovers, satellites, glass cockpits)
- Model checking, property-based design, model-based design
- Linear Temporal Logics (LTL, MLTL, LTLf) satisfiability checking, specification debugging, and encoding
- Automated reasoning, runtime monitoring, fault tolerance, safety and security analysis

Education

- 2012 Rice University Ph.D. in Computer Science
Thesis: *Explicit or Symbolic Translation of Linear Temporal Logic to Automata*
Advisor: Moshe Y. Vardi
- 2001 College of William and Mary M.S. in Computer Science
Thesis: *Black-Box Testing of Deterministic Finite Automata*
Advisor: Paul K. Stockmeyer
- 2000 College of William and Mary B.S. in Computer Science, *Magna Cum Laude*
Advisor: Deborah S. Noonan

Employment

- 4/2021– Dennis and Rebecca Muilenburg Associate Professor and Black & Veatch “Building a World of Difference” Faculty Fellow, Iowa State University, College of Engineering, Department of Aerospace Engineering (AERE), with courtesy appointments in the Departments of Computer Science (COMS), Electrical and Computer Engineering (ECpE), Mathematics (MATH), and the Virtual Reality Application Center (VRAC).
Director, Laboratory for Temporal Logic in Aerospace, 0238 Howe Hall, Ames, IA 50011
- 07/20– Consultant, VSM Design Team, CACI at NASA Johnson Space Center (JSC), providing formal methods support for verification of the Vehicle Systems Manager (VSM) for NASA’s Lunar Gateway.
- 08/16–4/2021 Assistant Professor, Iowa State University, College of Engineering, Department of Aerospace Engineering (AERE), with courtesy appointments in the Departments of Computer Science (COMS), Electrical and Computer Engineering (ECpE), Mathematics (MATH), and the Virtual Reality Application Center (VRAC).
Director, Laboratory for Temporal Logic in Aerospace, 0238 Howe Hall, Ames, IA 50011
- 01/15–08/16 Assistant Professor, University of Cincinnati, College of Engineering and Applied Science, Department of Aerospace Engineering and Engineering Mechanics (AEEM) with a joint appointment in the Department of Electrical Engineering and Computing Systems (EECS).
- 09/08–12/14 Research Scientist, NASA Ames Research Center, Intelligent Systems Division, Discovery and Systems Health (DaSH) and Robust Software Engineering (RSE) research groups.

11/03–09/08	Research Scientist, NASA Langley Research Center, Formal Methods Group, Safety Critical Avionics Systems Branch.
08/04–12/05	Computer Science Teaching Assistant, Rice University, Department of Computer Science.
05/01–11/03	Computer Systems Analyst, NASA Langley Research Center/Lockheed Martin Space Operations, Aeroacoustics Group.
08/00–05/01	Computer Science Laboratory Instructor, College of William and Mary, Department of Computer Science.
05/00–09/00	Systems Programmer, Pragati Synergetic Research, Inc.

Awards and Honors

- **Recognition of Outstanding Performance**, CACI at NASA JSC, “For technical excellence in maturing the Realizable Responsive Unobtrusive Unit (R2U2) from Technology Readiness Level (TRL) 4 to 7 and supporting integration into the Gateway Vehicle Systems Manager (VSM) for monitoring and detecting violations of Assume Guarantee Contracts (AGC). Also overseeing the successful handover of the VSM instance of R2U2 from Iowa State University to the VSM Flight Software Team.” August, 2024.
- **NASA Excellence Recognition Award**, Software, Robotics, and Simulation Division, NASA JSC, “For persistence, dedication, and teamwork in the delivery of R2U2 to the VSM Flight Software Team,” August, 2024.
- **Anna L. Pate Memorial Mentoring Award**, Women in Science and Engineering (WiSE), Iowa State University, in recognition of “outstanding mentorship of current and former WiSE students,” 2023
- **Dennis and Rebecca Muilenburg Professorship**, Iowa State University Department of Aerospace Engineering, 2023–present
- **Agilent Early Career Professor Award Finalist** (one of five finalists internationally), for “Significant original research contributions to the development of Artificial Intelligence and Machine Vision technologies for intuitive Collaborative Robots (Cobots) to address demands for a flexible next-generation workforce in manufacturing applications,” 2022
- **Inaugural Cybersecurity Faculty Fellow** (one of four), Iowa State University College of Engineering, 2022
- **Early Achievement in Research Award**, Iowa State University College of Engineering, for “ingenious solutions to hard combinatorial problems in avionics engineering,” 2021
- **Black and Veatch “Building A World of Difference” Faculty Fellowship** (endowed position, one of two awards in ISU’s College of Engineering), 2020–2023
- **NASA Early Career Faculty Award**, “Multi-Platform, Multi-Architecture Runtime Verification of Autonomous Space Systems,” 2016
- **NSF CAREER Award**, “CAREER: Theoretical Foundations of the UAS in the NAS Problem (Unmanned Aerial Systems in the National Air Space),” 2016
- **William H. Middendorf Research Excellence Award**, Department of Electrical Engineering and Computing Systems, College of Engineering and Applied Science, University of Cincinnati, 2015–2016
- **Faculty Fellow**, Eric & Wendy Schmidt Data Science for Social Good Summer Fellowship, Computation Institute, University of Chicago, Chicago, Illinois. (Summer, 2015)
- **Darwin T. Turner Scholars Program Breakfast of Champions Faculty Medal** from University of Cincinnati, for work in mentoring and nurturing female and under-represented minority students; nominated by a student “as someone who deserves to be acknowledged for their hard work and dedication” 2015
- **NASA Group Achievement Award** (Prognostics Team) “For groundbreaking foundational discoveries in the field of Prognostics and Health Management.” 2014
- **Above and Beyond Award** (co-recipient as part of NASA Ames) from the Society for Women Engineers, for outstanding dedication and impact in engineering outreach during the years 2013–2014

- **Initiative-Inspiration-Impact Award** (Inaugural) from Women in Aerospace “For exemplary achievement of formal specification, verification, and validation of a NextGen air traffic control system candidate and for dedication as a mentor and role model.” (This prestigious award is presented for an individual in her early career, who consistently surpasses expectations from a technical, interpersonal, and management perspective, commitment to professional growth, and service as a role model or mentor that shows dedication to the advancement of women in aerospace.) 2013
- **Distinguished Service Award** from the American Institute of Aeronautics and Astronautics Intelligent Systems Technical Committee “For Significant Contributions to the Activities of the ISTC and AIAA.” 2008–2013
- **NASA Superior Accomplishment Award** for “Outstanding leadership in planning and executing the Sixth NASA Langley Formal Methods Workshop” 2008
- **Floyd Thompson Fellowship** from NASA Langley Research Center, 2004–2006
- **NASA Superior Accomplishment Award** from the Contractors Steering Council for contributions to NASA’s Aerospace Careers Program for Middle Schools (focusing on Middle Schools in the Hampton Roads area with predominantly underrepresented populations), Spring, 2003
- **Howard Hughes Award** from the American Helicopter Society “For contributions to the automation, capability for version control, and flight data organization for validation of the NASA TiltRotor Aeroacoustics Code (TRAC) as a part of the development team.” 2002
- **NASA Group Achievement Award** (TRAC System and Analysis Team) 2002
- Lockheed Martin Space Operations **Lightning Award** 2002
- **Phi Beta Kappa** inducted 05/2000
- **James Monroe Scholar**, College of William and Mary. 1996–2000

Advised Students’ Awards and Honors

These are major awards won by my students (nominated by me where applicable) while the students were under my advisement, for the students’ work in my lab.

National and International Awards

- **NSF Graduate Research Fellowship (GRF)**, won by Zili Wang, April, 2024. The fellowship offers three years of support over a five-year period paid through the academic institution.
- **2nd Place, Team Category, AIAA Region V Conference**, won by the OpenUAS undergraduate research team, lead by Allison Howard, Varad Kulkarni, and Sydney Turner, April, 2024.
- **Brooke Owens Fellowship**, won by Hanna E. Stec, 2022. (There were a total of 51 such awards internationally in 2022.)
- **FMCAD Best Student Research Contribution**, won by Rohit Dureja for “Scalable Verification of Designs with Multiple Properties.” October 24, 2019. (One award given annually per vote by the international research community.)
- **Women in Aerospace Graduate Scholarship**, won by Abigail Gries, a merit-based national award given to only four students across the USA annually as “the next generation of female leaders in the aerospace industry,” August 15, 2019.
- **NASA Pathways PhD Position**, won by Esther Conrad, for the NASA Langley Research Center’s Formal Methods Group, 2019.
- **NASA Pathways PhD Position**, won by Brian Kempa, for the NASA Ames Research Center’s Intelligent Robotics Group, 2018.
- **Brooke Owens Fellowship**, won by Madison Harrington, 2018.
- **Kapsch Award for Best Masters Thesis**, won by Patrick Moosbrugger for “A Real-Time, On-board System Health Management Unit for Unmanned Aerial Systems.” November 4, 2016. (Six to seven awards given annually across 18 degree programs in Austria.)

State, Local, and University Awards

- **Overall Achievement Award**, won by Declan Green, OpenUAS team member, Fall, 2024.
- **Research Excellence Award**, Iowa State University College of Engineering, won by Brian Kempa, April, 2024.
- **2nd Place, Team Category, AIAA Region V Conference**, won by the OpenUAS undergraduate research team, lead by Allison Howard, Varad Kulkarni, and Sydney Turner, April, 2024.
- **Miller Family Fellowship** (research support awarded to one MATH PhD student per year, based on quantity and quality of research produced by the fellow), won by Laura Gamboa Guzman, Summer, 2024.
- **College of Engineering Outstanding Senior in Aerospace Engineering, and AERE Overall Achievement award**, won by Victoria Fleming, (one award per graduation cycle; Rozier named “most influential mentor”) <https://news.engineering.iastate.edu/2023/12/12/victoria-fleming-outstanding-senior-in-aerospace-engineering/> (Maximum of one award per department.)
- **Overall Achievement Award**, won by Ellie Diersen, OpenUAS team lead and 4-year team member, Fall, 2023.
- **Overall Achievement Award**, won by Evelyn Moyer, OpenUAS team member, Fall, 2023.
- **Academic Excellence Award**, won by Jessica Mellville, OpenUAS team member, Fall, 2023.
- **Overall Achievement Award**, won by Hanna Stec, “She served as an undergraduate research team member in the Laboratory for Temporal Logic managed by Associate Professor and Building a World of Difference Faculty Fellow Dr. Kristin-Yvonne Rozier,” Spring, 2023. <https://news.engineering.iastate.edu/2023/05/15/seven-aere-grads-receive-department-honors/>
- **Aerospace Engineering Academic Excellence Award**, won by John Edgren, for “leadership experience in his time with AerE as part of the OpenUAS (Unpiloted Aircraft System) research team for seven semesters in the roles of design team lead, overall team lead, flight test lead/pilot,” Spring, 2023. <https://news.engineering.iastate.edu/2023/05/15/seven-aere-grads-receive-department-honors/>
- **College of Engineering Outstanding Senior**, won by Christopher Johannsen, (Rozier named “most influential mentor”) <https://news.engineering.iastate.edu/2021/12/06/chris-johannsen-outstanding-senior-in-computer-engineering/>, Fall, 2021. (Maximum of one award per department.)
- **Iowa Space Grant Undergraduate Research Fellowship**, won by Abigail Hammer, 2021-2022
- **Iowa Space Grant Undergraduate Research Fellowship**, won by Michael Jacks, Jr., 2021-2022
- **College of Engineering Outstanding Senior and AERE nominee for Student Marshall**, Iowa State University College of Engineering, won by Stephanie Jou, Spring, 2021. (Maximum of one award per department.)
- **Aerospace Engineering Overall Achievement Award**, Iowa State University Department of Aerospace Engineering, won by Stephanie Jou, Spring, 2021. The Overall Achievement Award is given to students who have a combination of high academic achievement, high professional achievement and high engagement with the department and the community.
- **Teaching Excellence Award**, Iowa State University College of Engineering, won by Zachary Luppen, December 9, 2020.
- **Aerospace Engineering Overall Achievement Award**, won by Ben Hertz, a merit-based award given to four graduating seniors in the Aerospace Engineering Department, Fall, 2020.
- **Iowa Space Grant Graduate Fellowship**, won by Zachary Luppen [<https://www.iaspacegrant.org/>], 2020-2021.
- **College of Engineering Outstanding Senior and AERE nominee for Student Marshall**, Iowa State University College of Engineering, won by Abigail Gries, (Rozier named “most influential mentor”), Spring, 2020. (Maximum of one award per department.)
- **Research Excellence Award**, Iowa State University College of Liberal Arts and Sciences, won by Rohit Dureja, December 10, 2019.
- **Teaching Excellence Award**, Iowa State University College of Engineering, won by Brian Kempa, August 28, 2019.
- **Iowa Space Grant Scholarship**, won by Joshua Wallin [<https://www.iaspacegrant.org/2017/12/18/josh-wallin/>], 2017-2018.

Research Funding

2024–2025	NASA Cooperative Agreement Number 80NSSC24M0199. “Timeline Verification Statement of Work.” \$94,503. PI
2024–2025	Iowa Space Grant Consortium NASA STEM grant for OpenUAS project, \$7,650 (\$5,000 base plus \$2,650 waived indirect value), PI
2023-2024	Iowa Space Grant Consortium NASA STEM grant for OpenUAS project, \$2,295.00 (\$1,500.00 base plus \$795.00 waived indirect value), PI
2023	NSF:CCF:Travel:Student Travel Grant for 2023 Formal Methods in Computer-Aided Design (FMCAD); Award 2325872, 06/28/2023, \$15,000, PI
2023	NASA Cooperative Agreement for advancing the R2U2 statement of work, 02/01/2023–09/30/2023 \$90,709, PI
2022-2023	Iowa Space Grant Consortium NASA STEM grant for OpenUAS project, \$5,110.20 (\$3,340.00 base plus \$1,770.20 waived indirect value), PI
2022-2023	University Honors Program Grant for Khanh Hoang. \$560, PI
2022-2024	Iowa State University <i>Bridging the Divide</i> interdisciplinary seed grant: “Catching the Bad Guys: An Application of Formal Methods to Supply Chain Management,” \$50,000, PI ; Co-I: Frank Montabon.
2022	NASA Cooperative Agreement for advancing the R2U2 statement of work, 01/14/2022–09/30/2022 \$83,716, PI
2021-2022	Iowa Space Grant Consortium NASA STEM grant for GRIFEX CubeSat project, \$5,000, PI
2021-2022	Iowa Space Grant Consortium NASA STEM grant for OpenUAS project, \$5,000, PI
2021	NASA Cooperative Agreement for advancing the R2U2 statement of work, 08/15/2021–12/20/2021 \$31,991, PI
2021	NASA Cooperative Agreement for advancing the R2U2 statement of work, Grant #80NSSC21M0121 03/02/2021–07/01/2021 \$27,742, PI
2020-2023	NSF CPS: Medium: Resource-Aware Hierarchical Runtime Verification for Mixed-Abstraction-Level Systems of Systems (proposal #2038903), \$1,200,000, (portion of funds to PI: 40%), PI
2020-2023	NSF CCRI: Medium: “Developing an Open-Source, State-of-the-Art Symbolic Model-Checking Framework for the Model-Checking Research Community.” (proposal #2016597), \$1,500,000, (portion of funds to PI: \$674,801), PI
2020-2021	Iowa Space Grant Consortium NASA STEM grant for OpenUAS project, \$4,203, PI
2020-2021	Iowa Space Grant Consortium Graduate Research Fellowship. \$3,275 award for PhD fellow Zachary Luppen; Co-PI (with Dae-Young Lee)
2020-2021	NSF INTERN Supplement; (proposal #2037105). \$50,000, PI
2020	NSF (CNS) REU Supplement; (Award #1664356; proposal #2031042), \$16,000, PI
2020-2021	University Honors Program Grant for Alexander Vande Loo. \$520, PI
2018-2019	First Year Honors Mentor Program Grant and Student Enrichment Grant; equipment funding and National Conference for Undergraduate Research funding while mentoring undergraduate Abigail (Andy) Hammer. \$167.87/Fund #290-02-06-00-0005 and \$200, PI
2017-2018	Iowa Space Grant Consortium Research Mentor Program (for undergraduate scholarship awardees). \$1,000 award + \$3,500 scholarship for undergraduate Joshua Wallin PI
2017	Schloss Dagstuhl - NSF Support Grant for Junior Researchers in the form of a fee waiver to cover the full costs of room and board at Schloss Dagstuhl during the Dagstuhl Seminar 17462, “A Shared Challenge in Behavioural Specification,” November 12-15, 2017, and a travel stipend of \$1,500 US to reimburse the cost of a plane ticket to Dagstuhl. PI
2017-2020	NSF (PFI:BIC) “A Smart Service System for UAS Traffic Management in Low-Altitude Airspace.” \$1,000,000; Co-I portion of funds \$141,660; changed to PI for 2020.

- 2017 Schloss Dagstuhl - NSF Support Grant for Junior Researchers in the form of a fee waiver to cover the full costs of room and board at Schloss Dagstuhl during the Dagstuhl Seminar 17071, “Computer-Assisted Engineering for Robotics and Autonomous Systems,” February 12-27, 2017, and a travel stipend of \$1,500 US to reimburse the cost of a plane ticket to Dagstuhl. **PI**
- 2016 NSF grant for “Midwest Verification Day” \$9,994; **Co-I**
- 2016-2020 NASA Early Career Faculty Award “Multi-Platform, Multi-Architecture Runtime Verification of Autonomous Space Systems” \$596,630 **PI**
- 2016-2021 NSF “CAREER: Theoretical Foundations of the UAS in the NAS Problem (Unmanned Aerial Systems in the National Air Space)” \$523,772 **PI**
- 2015-2017 NASA Autonomy Operating System (AOS) for UAVs Grant. \$135,058 **PI**
- 2015 2015-16 UC-LEAF/NSF Branch proposal “New Directions in Research and Faculty Development: Working at Grace Hopper Celebration and Rice University.” \$3K **PI**
- 2015 Schloss Dagstuhl - NSF Support Grant for Junior Researchers in the form of a fee waiver to cover the full costs of room and board at Schloss Dagstuhl during the Dagstuhl Seminar 15171, “Theory and Practice of SAT Solving,” April 19-24, 2015, and a travel stipend of \$750 US to partially reimburse the cost of a plane ticket to Dagstuhl. **PI**
- 2015-2016 Aeronautics Research Mission Directorate (ARMD) Seedling Fund Phase I Award, “Efficient Reconfigurable Cockpit Design and Fleet Operations using Software Intensive, Networked and Wireless Enabled Architecture (ECON).” \$750K; **Co-I** portion of funds \$29,550.
- 2014 Travel Support Grant, Committee on the Status of Women in Computing Research (CRA-W), \$1700. **PI**
- 2013-2014 Aeronautics Research Mission Directorate (ARMD) Seedling Fund Phase I Award, “Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS.” \$600K, **PI**
- 2013-2014 Principle Investigator, NASA project “AG-4 (Air/Ground #4): Formal Methods Analysis for the Functional Allocation of the Next Generation Air Traffic Transportation System” under the Airspace Systems Program. Estimated \$200K
- 2008-2013 Team Leader, NASA project “Verification and Validation for Separation Assurance Algorithms” under the Airspace Systems Program. Funding was 1 FTE per year plus travel and Ph.D. student support budgets.

Research Publications

- + Denotes graduate student co-author.
- * Denotes undergraduate student co-author.

Peer-Reviewed Conferences

- C1 Zili Wang⁺, Katherine Kosaian, and Kristin Yvonne Rozier. “Formally Verifying a Transformation from MLTL Formulas to Regular Expressions.” In *31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume TBD of *Lecture Notes in Computer Science (LNCS)*, pages TBD, Springer-Verlag, Hamilton, Canada, May 3–8, 2025. (acceptance rate < 31%; CORE A*-ranked conference)
- C2 Rohit Dureja, Jason Baumgartner, Raj Kumar Gajavelly, Robert Kanzelman, and Kristin Yvonne Rozier. “Toward Exhaustive Sequential Redundancy Removal.” In *Proceedings of the Twenty-fourth International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, October 14–18, 2024.
- C3 Alexis Aurandt⁺, Phillip H. Jones, Kristin Yvonne Rozier and Tichakorn Wongpiromsarn. “Multimodal Model Predictive Runtime Verification for Safety of Autonomous Cyber-Physical Systems.” In *Proceedings of the 29th International Conference on Formal Methods for Industrial Critical Systems (FMICS)*, LNCS, Springer, Milan, Italy, September 9–11, 2024. DOI: https://doi.org/10.1007/978-3-031-68150-9_13 Print ISBN: 978-3-031-68149-3

- C4 Katherine Kosaian, Yong Kiam Tan, and Kristin Yvonne Rozier. “Formalizing Coppersmith’s Method in Isabelle/HOL.” In *Proceedings of the 17th Conference on Intelligent Computer Mathematics (CICM)*, LNCS, Springer, Montréal, Québec, Canada, August 5–9, 2024.
- C5 C. Johannsen⁺, K. Nukala^{*}, R. Dureja, A. Irfan, N. Shankar, C. Tinelli, M. Y. Vardi, and K. Y. Rozier. “The MoXI Model Exchange Tool Suite.” In *Proceedings of 36th International Conference on Computer Aided Verification (CAV)*. volume 14681, LNCS, Springer, July, 2024. (acceptance rate < 26%; CORE A*-ranked conference)
- C6 K. Y. Rozier, R. Dureja, A. Irfan, C. Johannsen⁺, K. Nukala^{*}, N. Shankar, C. Tinelli, and M. Y. Vardi. “MoXI: An Intermediate Language for Symbolic Model Checking.” In: *Proceedings of the 30th International Symposium on Model Checking Software (SPIN)*. LNCS, Springer, April, 2024. (Invited)
- C7 Jenna Elwing^{*}, Laura Gamboa-Guzman⁺, Jeremy Sorkin^{*}, Chiara Traverset^{*}, Zili Wang^{*}, and Kristin Y. Rozier. “Mission-time LTL (MLTL) Formula Validation Via Regular Expressions.” In *Proceedings of the 18th International Conference on integrated Formal Methods (iFM 2023)*, Springer, Leiden, the Netherlands, November 13–15, 2023. (acceptance rate < 35%)
- C8 Runming Li^{*}, Keerthana Gurushankar⁺, Marijn J. H. Heule, and Kristin Y. Rozier. “What’s in a Name? Linear Temporal Logic Literally Represents Time Lines.” In *Proceedings of the 11th IEEE Working Conference on Software Visualization (VISSOFT 2023)*, Bototá, Columbia, October 1–2, 2023. Artifact awarded the “Open Research Objects (ORO)” and “Research Objects Reviewed (ROR)” badges for reproducibility (each artifact separately received at least three peer-reviews). (acceptance rate < 66%)
- C9 Chris Johannsen⁺, Brian Kempa⁺, Phillip Jones, Kristin Yvonne Rozier, and Tichakorn Wongpiromsarn. “Impossible Made Possible: Encoding Intractable Specifications via Implied Domain Constraints.” In *Proceedings of the 28th International Conference on Formal Methods for Industrial Critical Systems (FMICS)*, volume 14290 of *Lecture Notes in Computer Science (LNCS)*, Springer, Antwerp, Belgium, September 20–22, 2023. (acceptance rate < 58%)
- C10 Pei Zhang⁺, Alexis Aurandt⁺, Rohit Dureja⁺, Phillip Jones, and Kristin Y. Rozier. “Model Predictive Runtime Verification for Cyber-Physical Systems with Real-Time Deadlines.” In *Proceedings of the 21st International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS)*, volume 14138 of *Lecture Notes in Computer Science (LNCS)*, Springer, Antwerp, Belgium, September 19–21, 2023. (acceptance rate < 42%)
- C11 Gokul Hariharan⁺, Phillip H. Jones, Kristin Y. Rozier, and Tichakorn Wongpiromsarn. “Maximum Satisfiability in Mission-time Linear Temporal Logic.” In *Proceedings of the 21st International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS)*, volume 14138 of *Lecture Notes in Computer Science (LNCS)*, Springer, Antwerp, Belgium, September 19–21, 2023. (acceptance rate < 42%)
- C12 Chris Johannsen⁺, Phillip Jones, Brian Kempa⁺, Kristin Yvonne Rozier, and Pei Zhang⁺. “R2U2 Version 3.0: Re-imagining a Toolchain for Specification, Resource Estimation, and Optimized Observer Generation for Runtime Verification in Hardware and Software.” In *Proceedings of the 35th International Conference on Computer Aided Verification (CAV)*, Springer-Verlag, Paris, France, July 17–22, 2023. Received the “Available” and “Reusable” badges (highest rating from Artifact Evaluation Review Committee) (acceptance rate < 26%; CORE A*-ranked conference)
- C13 Laura P. Gamboa Guzman⁺, and Kristin Yvonne Rozier. “Stalnaker’s Epistemic Logic in Isabelle/HOL.” In *Proceedings of the 18th Logical and Semantic Frameworks with Applications (LSFA)*, Springer, Rome, Italy, July 1–2, 2023. (acceptance rate < 70%)
- C14 Gokul Hariharan⁺, Brian Kempa⁺, Tichakorn Wongpiromsarn, Phillip H. Jones, and Kristin Y. Rozier. “MLTL Multi-type (MLTLM): A Logic for Reasoning about Signals of Different Types.” In *Proceedings of the 15th International Workshop on Numerical Software Verification (NSV)*, a workshop of FLoC. Springer, Haifa, Israel, August 11, 2022. (acceptance rate < 75%)
- C15 Orion Staskal^{*}, Josh Simac^{*}, Logan Swayne^{*}, and Kristin Yvonne Rozier. “Translating SysML Activity Diagrams for nuXmv Verification of an Autonomous Pancreas.” In *Proceedings of SESS 2022: 6th IEEE Workshop on Software Engineering for Smart Systems*, a workshop of IEEE COMPSAC: Computers, Software & Applications in an Uncertain World. IEEE, Virtual, June 27–July 1, 2022.
- C16 Alexis Aurandt⁺, Phillip Jones, and Kristin Yvonne Rozier. “Runtime Verification Triggers Real-time, Autonomous Fault Recovery on the CySat-I.” In *Proceedings of the 14th NASA Formal Methods*

- Symposium (NFM 2022)*, Caltech, California, USA, May 24-27, 2022. (acceptance rate < 24%)
- C17 Zachary Luppen⁺, Michael Jacks*, Nathan Baughman*, Benjamin Hertz*, James Cutler, Dae Young Lee, and Kristin Yvonne Rozier. “Elucidation and Analysis of Specification Patterns in Aerospace System Telemetry.” In *Proceedings of the 14th NASA Formal Methods Symposium (NFM 2022)*, Springer, Caltech, California, USA, May 24-27, 2022. (acceptance rate < 24%)
- C18 Christopher Johannsen*, Marcella Anderson*, William Burken*, Ellie Diersen*, John Edgren*, Colton Glick*, Stephanie Jou*, Adhyaksh Kumar*, John Levandowski*, Evelyn Moyer*, Taylor Roquet*, Alexander VandeLoo*, and Kristin Yvonne Rozier. “OpenUAS Version 1.0.” In *Proceedings of the 2021 IEEE International Conference on Unmanned Aircraft Systems (ICUAS)*, IEEE, Athens, Greece (Virtual), June 15-18, 2021. (acceptance rate < 79%)
- C19 Benjamin Hertz*, Zachary Luppen⁺, and Kristin Yvonne Rozier. “Integrating Runtime Verification into a Sounding Rocket Control System.” In *Proceedings of the 13th NASA Formal Methods Symposium (NFM 2021)*, Springer, Virtual, May 24-28, 2021. (acceptance rate < 36%)
- C20 Michael Fisher, Viviana Mascardi, Kristin Yvonne Rozier, Holger Schlingloff, Michael Winikoff, and Neil Yorke-Smith. “Towards a Framework for Certification of Reliable Autonomous Systems.” In *20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Journal-first (JAAMAS) track, Springer, London, UK (Virtual), May 3–7, 2021.
- C21 Rohit Dureja⁺, Jason Baumgartner, Robert Kanzelman, Mark Williams, and Kristin Yvonne Rozier. “Accelerating Parallel Verification via Complementary Property Partitioning and Strategy Exploration.” In *Proceedings of the Twentieth International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, September 21–24, 2020. (acceptance rate < 38%; CORE A*-ranked conference)
- C22 Matthew Cauwels⁺, Abigail Hammer*, Benjamin Hertz*, Phillip Jones, and Kristin Yvonne Rozier. “Integrating Runtime Verification into an Automated UAS Traffic Management System.” In *Proceedings of DETECT: international workshop on modeling, verification and testing of dependable critical systems*, volume 1269 of *Communications in Computer and Information Science (CCIS)*, pages 340–357, Springer, L’Aquila, Italy, September 14–18, 2020. DOI: https://doi.org/10.1007/978-3-030-59155-7_26 (acceptance rate < 40%)
- C23 Brian Kempa⁺, Pei Zhang⁺, Phillip H. Jones, Joseph Zambreno, and Kristin Yvonne Rozier. “Embedding Online Runtime Verification for Fault Disambiguation on Robonaut2” In *Proceedings of the 18th International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS)*, volume 12288 of *Lecture Notes in Computer Science (LNCS)*, pages 196–214, Springer, Vienna, Austria, September 1–3, 2020. (acceptance rate < 50%)
- C24 Rohit Dureja⁺, Jason Baumgartner, Alexander Ivrii, Robert Kanzelman, and Kristin Yvonne Rozier. “Boosting Verification Scalability via Structural Grouping and Semantic Partitioning of Properties.” In *Formal Methods in Computer-Aided Design (FMCAD 2019)*, IEEE/ACM, San Jose, California, October 20–25, 2019. (acceptance rate < 31%; CORE A*-ranked conference)
- C25 Kristin Yvonne Rozier. “On Teaching Applied Formal Methods in Aerospace Engineering.” In *Proceedings of the Formal Methods Teaching Workshop (FMTea) at the 3rd World Congress on Formal Methods*, volume 11758 of *Lecture Notes in Computer Science (LNCS)*, pages 111-131, Springer-Verlag, Porto, Portugal, October 7, 2019. DOI: https://doi.org/10.1007/978-3-030-32441-4_8 (acceptance rate < 63%)
- C26 Jianwen Li, Moshe Y. Vardi, and Kristin Y. Rozier. “Satisfiability Checking for Mission-Time LTL.” In *Proceedings of the 31st International Conference on Computer Aided Verification (CAV)*, Springer-Verlag, New York, New York, USA, July 15–18, 2019. (acceptance rate < 26%; received the “Artifact Evaluated Stamp” – highest mark from Artifact Evaluation Review Committee) CORE A*-ranked conference)
- C27 Rohit Dureja⁺, Jianwen Li, Geguang Pu, Kristin Yvonne Rozier, and Moshe Vardi. “Intersection and Rotation of Assumption Literals Boosts Bug-Finding” In *Proceedings of the 11th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE)*, volume 12031 of *Lecture Notes in Computer Science (LNCS)*, pages 180-192, Springer-Verlag, New York, New York, USA, July 13–14, 2019. (acceptance rate < 52%)
- C28 Kristin Yvonne Rozier. “From Simulation to Runtime Verification and Back: Connecting Single-Run Verification Techniques.” In *Proceedings of the 2019 Spring Simulation Conference, Aviation*

Simulation Challenges (AviSim) Track, University of Arizona, Tucson, Arizona, April 29–May 2, 2019. (Invited)

- C29 Jianwen Li, Yueling Zhang⁺, Geguang Pu, Kristin Y. Rozier, and Moshe Y. Vardi. “SAT-based Explicit LTL_f Satisfiability Checking.” In *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19)*. Honolulu, Hawaii, January 27–February 1, 2019. (acceptance rate 16.2%; CORE A*-ranked conference)
- C30 Jianwen Li and Kristin Yvonne Rozier. “MLTL Benchmark Generation via Formula Progression.” In *Proceedings of the 18th International Conference on Runtime Verification (RV18)*, Springer-Verlag, Limassol, Cyprus, November 10–13, 2018. (acceptance rate < 42%)
- C31 Jianwen Li, Rohit Dureja⁺, Geguang Pu, Kristin Yvonne Rozier, and Moshe Vardi. “SimpleCAR: An Efficient Bug-Finding Tool Based On Approximate Reachability.” In *Proceedings of the 30th International Conference on Computer Aided Verification (CAV)*, Springer-Verlag, Oxford, UK, July 14–17, 2018. (acceptance rate < 30%; received the “Artifact Evaluated Stamp” (highest mark from Artifact Evaluation Review Committee); CORE A*-ranked conference)
- C32 Rohit Dureja⁺ and Kristin Yvonne Rozier. “More Scalable LTL Model Checking via Discovering Design-Space Dependencies (D^3).” In *24th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, part I, volume 10805 of *Lecture Notes in Computer Science (LNCS)*, pages 309–327, Springer-Verlag, Thessaloniki, Greece, 14–21 April 2018. (acceptance rate < 29%; received the “Artifact Evaluated Stamp” (highest mark from Artifact Evaluation Review Committee); CORE A*-ranked conference)
- C33 Rohit Dureja⁺ and Kristin Yvonne Rozier. “FuseIC3: An Algorithm for Checking Large Design Spaces.” In *Formal Methods in Computer-Aided Design (FMCAD 2017)*, IEEE/ACM, Vienna, Austria, October 2–6, 2017. (acceptance rate 29%; CORE A*-ranked conference)
- C34 Kristin Yvonne Rozier. “On the Evaluation and Comparison of Runtime Verification Tools for Hardware and Cyber-Physical Systems.” In *International Workshop on Competitions, Usability, Benchmarks, Evaluation, and Standardisation for Runtime Verification Tools (RV-CUBES)*, held in conjunction with the 17th International Conference on Runtime Verification (RV 2017), pages 123-137, Kalpa Publications in Computing, volume 3, Seattle, Washington, USA, September 13–16, 2017.
- C35 Kristin Yvonne Rozier, and Johann Schumann. “R2U2: Tool Overview.” In *International Workshop on Competitions, Usability, Benchmarks, Evaluation, and Standardisation for Runtime Verification Tools (RV-CUBES)*, held in conjunction with the 17th International Conference on Runtime Verification (RV 2017), pages 138-156, Kalpa Publications in Computing, volume 3, Seattle, Washington, USA, September 13–16, 2017.
- C36 Johann Schumann, Patrick Moosbrugger⁺, and Kristin Y. Rozier. “Runtime Analysis with R2U2: A Tool Exhibition Report.” In *Proceedings of the 16th International Conference on Runtime Verification (RV16)*, Springer-Verlag, Madrid, Spain, September 23–30, 2016. (acceptance rate < 44%)
- C37 Marco Gario⁺, Alessandro Cimatti, Cristian Mattarei⁺, Stefano Tonetta, and Kristin Yvonne Rozier. “Model Checking at Scale: Automated Air Traffic Control Design Space Exploration.” In *Proceedings of the 28th International Conference on Computer Aided Verification (CAV)*, Springer-Verlag, Toronto, Ontario, Canada, July 17–23, 2016. (acceptance rate < 27%; received the “Artifact Evaluated Stamp” (highest mark from Artifact Evaluation Review Committee <http://barghouthi.github.io/cav16-aec/>); CORE A*-ranked conference)
- C38 Kristin Yvonne Rozier. “Specification: The Biggest Bottleneck in Formal Methods and Autonomy.” In *Proceedings of the 8th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE)*, volume 9971 of *Lecture Notes in Computer Science (LNCS)*, pages 1–19, Springer-Verlag, Toronto, Canada, July 17–18, 2016. (Invited)
- C39 Eric W.D. Rozier and Kristin Yvonne Rozier. “Cascading Solution of Data Dependency Constraints in Z3.” In *International Symposium on Artificial Intelligence and Mathematics (ISAIM)*, AAAI, Ft. Lauderdale, Florida, January 4–6, 2016. (Invited; CORE rank: “National, USA”)
- C40 Eric W.D. Rozier and Kristin Yvonne Rozier. “SMT-Driven Intelligent Storage for Big Data.” In *Proceedings of the Ninth International Workshop on Constraints in Formal Verification (CFV)*, IEEE, Austin, Texas, USA, November 5, 2015. (Invited)
- C41 Cristian Mattarei⁺, Alessandro Cimatti, Marco Gario⁺, Stefano Tonetta, and Kristin Y. Rozier. “Comparing Different Functional Allocations in Automated Air Traffic Control Design.” In *Formal Methods in*

- Computer-Aided Design (FMCAD 2015)*, IEEE/ACM, Austin, Texas, USA, September 27–30, 2015. (acceptance rate < 39%; CORE A*-ranked conference)
- C42 Johann Schumann, Patrick Moosbrugger⁺, and Kristin Y. Rozier. “R2U2: Monitoring and Diagnosis of Security Threats for Unmanned Aerial Systems.” In *Proceedings of the 15th International Conference on Runtime Verification (RV15)*, Springer-Verlag, Vienna, Austria, September 22–25, 2015. (acceptance rate < 35%)
- C43 Ulya Bayram⁺, Kristin Yvonne Rozier, and Eric W. D. Rozier. “Characterizing Data Dependence Constraints for Dynamic Reliability Using *N*-Queens Attack Domains.” In *Proceedings of the 12th International Conference on Quantitative Evaluation of Systems (QEST 2015)*, Madrid, Spain, September 1–3, 2015. (acceptance rate < 29%)
- C44 Yang Zhao⁺ and Kristin Y. Rozier. “Probabilistic Model Checking for Comparative Analysis of Automated Air Traffic Control Systems.” In *Proceedings of the 33rd International Conference On Computer-Aided Design (ICCAD’2014)*, IEEE/ACM, San Jose, CA, U.S.A., November 3–6, 2014. (Invited; CORE A*-ranked conference)
- C45 Johannes Geist⁺, Kristin Yvonne Rozier, and Johann Schumann. “Runtime Observer Pairs and Bayesian Network Reasoners On-board FPGAs: Flight-Certifiable System Health Management for Embedded Systems.” In *Proceedings of the 14th International Conference on Runtime Verification (RV14)*, Springer-Verlag, Toronto, Canada, September 22–25, 2014. (acceptance rate < 29%)
- C46 Kristin Yvonne Rozier and Eric Rozier. “Reproducibility, Correctness, and Buildability: the Three Principles for Ethical Public Dissemination of Computer Science and Engineering Research,” In *IEEE International Symposium on Ethics in Engineering, Science, and Technology, Ethics’2014*, Chicago, IL, U.S.A., May 23–24, 2014. (acceptance rate < 50%)
- C47 Thomas Reinbacher⁺, Kristin Y. Rozier, and Johann Schumann. “Temporal-Logic Based Runtime Observer Pairs for System Health Management of Real-Time Systems.” In *20th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 8413 of *Lecture Notes in Computer Science (LNCS)*, pages 357–372, Springer-Verlag, Grenoble, France, 5–13 April 2014. (acceptance rate < 22%; CORE A*-ranked conference)
- C48 Johann Schumann, Kristin Y. Rozier, Thomas Reinbacher⁺, Ole J. Mengshoel, Timmy Mbaya, and Corey Ippolito. “Towards Real-time, On-board, Hardware-supported Sensor and Software Health Management for Unmanned Aerial Systems.” In *2013 Annual Conference of the Prognostics and Health Management Society (PHM2013)*, pages 381–401. October, 2013. ISBN: 978-1-936263-06-6, ISSN: 2325-0178.
- C49 Kristin Y. Rozier and Moshe Y. Vardi. “Deterministic Compilation of Temporal Safety Properties in Explicit State Model Checking.” In *8th Haifa Verification Conference (HVC2012)*, volume 7857 of *Lecture Notes in Computer Science (LNCS)*, pages 243–259, Springer-Verlag, Haifa, Israel, November, 2012. (acceptance rate < 50%)
- C50 Yang Zhao⁺ and Kristin Y. Rozier. “Formal Specification and Verification of a Coordination Protocol for an Automated Air Traffic Control System.” In *12th International Workshop on Automated Verification of Critical Systems (AVoCS)*, volume 53 of *Electronic Communications of the EASST*, Bamberg, Germany, September 2012. (acceptance rate < 38%)
- C51 Kristin Y. Rozier and Moshe Y. Vardi. “A Multi-Encoding Approach for LTL Symbolic Satisfiability Checking.” In *17th International Symposium on Formal Methods (FM2011)*, volume 6664 of *Lecture Notes in Computer Science (LNCS)*, pages 417–431. Springer-Verlag, Limerick, Ireland, June 20–24, 2011. (acceptance rate < 29%; CORE A*-ranked conference)
- C52 Kristin Y. Rozier and Moshe Y. Vardi. “LTL Satisfiability Checking.” In *14th Workshop on Model Checking Software (SPIN ’07)*, volume 4595 of *Lecture Notes in Computer Science (LNCS)*, pages 149–167. Springer-Verlag, Berlin, Germany, July 1–3, 2007. (acceptance rate < 43%)

Journals

- J53 Gokul Hariharan⁺, Brian Kempa⁺, Tichakorn Wongpiromsarn, Phillip H. Jones, and Kristin Y. Rozier. “MLTL Multi-type: A Typed Logic for Cyber-Physical Systems.” In *Transactions on Embedded Computing Systems*, 2024.

- J54 Maurice H. ter Beek, Rod Chapman, Rance Cleaveland, Hubert Garavel, Rong Gu, Ivo ter Horst, Jeroen J. A. Keiren, Thierry Lecomte, Michael Leuschel, Kristin Y. Rozier, Augusto Sampaio, Cristina Seceleanu, Martyn Thomas, Tim A. C. Willemse, Lijun Zhang. "Formal Methods in Industry." In *Formal Aspects of Computing Journal*, August, 2024. DOI: 10.1145/3689374
- J55 Brian Kempa⁺, Chris Johannsen⁺, Kristin Yvonne Rozier. "Improving Usability and Trust in Real-Time Verification of a Large-Scale Complex Safety-Critical System." In *Ada User Journal*, September, 2022.
- J56 Jianwen Li, Moshe Y. Vardi, and Kristin Y. Rozier. "Satisfiability Checking for Mission-Time LTL." In *Information and Computation*, Elsevier, May, 2022. DOI: <https://doi.org/10.1016/j.ic.2022.104923>
- J57 Rohit Dureja⁺ and Kristin Yvonne Rozier. "Incremental design-space model checking via reusable reachable state approximations." In *Formal Methods in System Design (FMSD) Journal*, Springer, January, 2022. DOI: <https://doi.org/10.1007/s10703-022-00389-5>
- J58 Abigail Hammer*, Matthew Cauwels⁺, Benjamin Hertz*, Phillip Jones, and Kristin Yvonne Rozier. "Integrating Runtime Verification into an Automated UAS Traffic Management System." In *Innovations in Systems and Software Engineering: A NASA Journal*, Springer, July, 2021. DOI: <https://doi.org/10.1007/s11334-021-00407-5>
- J59 Michael Fisher, Viviana Mascardi, Kristin Yvonne Rozier, Holger Schlingloff, Michael Winikoff, and Neil Yorke-Smith. "Towards a Framework for Certification of Reliable Autonomous Systems." In *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, volume 35, number 8, Springer, 2021. DOI: <https://doi.org/10.1007/s10458-020-09487-2>
- J60 Jianwen Li, Yueling Zhang⁺, Geguang Pu, Kristin Y. Rozier, and Moshe Y. Vardi. "SAT-based Explicit LTL_f Satisfiability Checking." In *Artificial Intelligence Journal*, Elsevier, 2020.
- J61 Rohit Dureja⁺, and Kristin Yvonne Rozier. "Formal Framework for Safety, Security, and Availability of Aircraft Communication Networks." In *Journal of Aerospace Information Systems (JAIS)*, volume 17, number 7, pages 322-335, AIAA, 2020. DOI:10.2514/1.I010769.
- J62 Johann Schumann, Patrick Moosbrugger⁺, and Kristin Y. Rozier. "R2U2: Monitoring and Diagnosis of Security Threats for Unmanned Aerial Systems." In *Formal Methods in System Design (FMSD) Journal*, pages 1–31, Springer-Verlag, April, 2017. DOI:10.1007/s10703-017-0275-x.
- J63 Eric W. D. Rozier, Ulya Bayram⁺, and Kristin Yvonne Rozier. "Characterizing Data Dependence Constraints for Dynamic Reliability Using n -Queens Attack Domains." In *Leibniz Transactions on Embedded Systems (LITES) Special Issue on Quantitative Evaluation of Systems (QEST)*, volume 4, issue 1, article number 5, pg. 05:1–05:26, February, 2017. DOI: 10.4230/LITES-v004-i001-a005.
- J64 Johann Schumann, Kristin Y. Rozier, Thomas Reinbacher⁺, Ole J. Mengshoel, Timmy Mbaya, and Corey Ippolito. "Towards Real-time, On-board, Hardware-supported Sensor and Software Health Management for Unmanned Aerial Systems." In *International Journal of Prognostics and Health Management (IJPHM)*, volume 6, number 1, pages 1–27, PHM Society, June, 2015.
- J65 Yang Zhao⁺ and Kristin Y. Rozier. "Formal Specification and Verification of a Coordination Protocol for an Automated Air Traffic Control System" (extended version). In *Science of Computer Programming Journal*, volume 96, number 3, pages 337–353, Elsevier, December, 2014.
- J66 Yang Zhao⁺ and Kristin Y. Rozier. "Formal Specification and Verification of a Coordination Protocol for an Automated Air Traffic Control System." In *Electronic Communications of the European Association of Software Science and Technology (ECEASST)*, volume 53, 2012. DOI: <http://dx.doi.org/10.14279/tuj.eceasst.53.787>
- J67 Deian Tabakov, Kristin Y. Rozier, and Moshe Y. Vardi. "Optimized Temporal Monitors for SystemC." In *Formal Methods in System Design (FMSD) Journal*, volume 41, number 3, pages 236–268, Springer, January, 2012.
- J68 Kristin Y. Rozier. "Linear Temporal Logic Symbolic Model Checking." In *Computer Science Review Journal*, volume 5, number 2, pages 163–203, Elsevier, May, 2011.
- J69 Kristin Y. Rozier and Moshe Y. Vardi. "LTL Satisfiability Checking." In *International Journal on Software Tools for Technology Transfer (STTT)*, pages 123–137, Springer-Verlag, March, 2010.
- J70 Casey L. Burley, Thomas F. Brooks, Kristin Y. Rozier, et al. "Rotor wake vortex definition evaluation of 3-C PIV results of the HART-II study," *International Journal of Aeroacoustics*, volume 5, pages 1-38, January, 2006.

Books, and Conference Proceedings

- B71 André Platzer, Kristin Yvonne Rozier, Matteo Pradella, and Matteo Rossi (Eds.). *Proceedings of the 26th International Symposium on Formal Methods – FM 2024*. *Lecture Notes in Computer Science (LNCS)*, volumes 14933 and 14934, Springer 2024. To appear: <https://www.fmeurope.org/symposia/>.
- B72 Rohit Dureja, Rosemary Monahan, and Kristin Yvonne Rozier, (Eds.): “High-Performance Computing and Formal Methods,” a volume of *Frontiers in High Performance Computing Journal*, 2024. <https://www.frontiersin.org/research-topics/50797/high-performance-computing-and-formal-methods>
- B73 Alexander Nadel, and Kristin Yvonne Rozier, (Eds.). *Proceedings of the 23rd Conference on Formal Methods in Computer-Aided Design – FMCAD 2023*. Volume 4, pp. 1–317). TU Wien Academic Press, 2023. DOI <https://doi.org/10.34727/2023/isbn.978-3-85448-060-0>.
- B74 Kristin Yvonne Rozier and Swarat Chaudhuri, (Eds.): *Proceedings of the Fifteenth NASA Formal Methods Symposium (NFM 2023)*, Houston, Texas, U.S.A., May 16–18, 2023. *Lecture Notes in Computer Science (LNCS)*, volume 13903, Springer 2023, eBook ISBN 978-3-031-33170-1, Print ISBN 978-3-031-33169-5.
- B75 Julia Badger, and Kristin Yvonne Rozier, (Eds.): *Proceedings of the Eleventh NASA Formal Methods Symposium (NFM 2019)*, Houston, Texas, U.S.A., May 7–9, 2019. *Lecture Notes in Computer Science (LNCS)*, volume 11460, Springer 2019, DOI 10.1007/978-3-030-20652-9.
- B76 Julia Badger, and Kristin Yvonne Rozier, (Eds.): *Proceedings of the Sixth NASA Formal Methods Symposium (NFM 2014)*, Houston, Texas, U.S.A., April 29–May 1, 2014. *Lecture Notes in Computer Science (LNCS)*, volume 8430, Springer 2014.
- B77 Kristin Yvonne Rozier, (Ed.): *Proceedings of the Sixth NASA Langley Formal Methods Workshop (LFM 2008)*, Newport News, Virginia, U.S.A., April 30–May 2, 2008. NASA/CP-2008-215309, May 2008.

Miscellanea

- M78 Varad V. Kulkarni*, Allison L. Howard*, Sydney R. V. Turner*, Mukul S. Kulkarni*, Nisha Raj*, Eric A. Rasmussen*, Mehmet B. Sefer*, Karanvir Singh*, and Kristin Y. Rozier. “OpenUAS: An Open-Source Unmanned Aircraft Systems (UAS) Testbed Solution under Cost Constraints.” AIAA Region V Student Conference, St. Louis, Missouri, USA, April 5–6, 2024. **Won 2nd place in Student Research Competition, Team Category**. DOI: <https://doi.org/10.2514/6.2024-84417>
- M79 Justin Bradley, Cody Fleming, Kristin Y. Rozier, and Amy Pritchett. “Impact and Influence of Cyber-Physical Systems Research on Autonomous Aerospace Systems.” AIAA SciTech, National Harbor, Maryland, January 23–27, 2023.
- M80 Sebastian Schirmer, Christoph Torens, Johann C. Dauer, Jan Baumeister, Bernd Finkbeiner, and Kristin Y. Rozier. “A Hierarchy of Monitoring Properties for Autonomous Systems.” AIAA SciTech, National Harbor, Maryland, January 23–27, 2023.
- M81 Zachary A. Luppen⁺, Dae Young Lee, and Kristin Y. Rozier. “A Case Study in Formal Specification and Runtime Verification of a CubeSat Communications System.” AIAA SciTech, Session on Formal Methods for Intelligent Aerospace Systems, Nashville, Tennessee, January 11–15, 2021. DOI: <https://doi.org/10.2514/6.2021-0997> (Invited)
- M82 Hubert Garavel, Maurice ter Beek, Jaco van de Pol, et al. “Survey on formal methods to celebrate the 25th Anniversary of the FMICS International Conference.” In *Proceedings of the 25th International Conference on Formal Methods for Industrial Critical Systems*, Springer, *Lecture Notes in Computer Science (LNCS)*, September 2–3, 2020. DOI: https://doi.org/10.1007/978-3-030-58298-2_1 (Invited “key actor in formal methods”)
- M83 Kristin Yvonne Rozier. “Temporal Logic Satisfiability From Specification Debugging to Benchmark Generation.” In *Forth Women in Logic Workshop (WiL)*, pages 52–54, June 30, 2020. (acceptance rate < 55%)
- M84 Abigail Hammer*, Benjamin Hertz*, Matthew Cauwels⁺, and Kristin Y. Rozier. “Implementing Specifications onto a Runtime Verification Unit.” In *Proceedings of the National Conferences on Undergraduate Research (NCUR)*, Montana State University, March 26–28, 2020.
- M85 Wolfgang Ahrendt, Marieke Huisman, Giles Regeer, and Kristin Yvonne Rozier. “A Broader View on Verification: From Static to Runtime and Back (Track Summary).” In *8th International Symposium*

on Leveraging Applications of Formal Methods, Verification, and Validation (ISoLA), volume 11245 of LNCS, pages 3–7, Springer, November, 2018.

- M86 Rohit Dureja⁺, Eric Rozier, and Kristin Yvonne Rozier. “A Case Study in Safety, Security, and Availability of Wireless-Enabled Aircraft Communication Networks.” *AIAA AVIATION*, June 5–9, 2017.
- M87 Michael Lowry, Anupa Bajwa, Patrick Quach, Gabor Karsai, Kristin Y. Rozier, Sanjai Rayadurgam. “Autonomy Operating System for UAVs.” Online: https://nari.arc.nasa.gov/sites/default/files/attachments/15%29%20Mike%20Lowry%20SAEApril19-2017.Final_.pdf, April 19, 2017.
- M88 Kristin Yvonne Rozier. “Year In Review: Intelligent Systems,” *Aerospace America*, volume 52, number 11, page 45, December 2014.
- M89 Kristin Yvonne Rozier. “Year In Review: Intelligent Systems,” *Aerospace America*, volume 51, number 11, page 43, December 2013.
- M90 Kristin Yvonne Rozier. “Year In Review: Intelligent Systems,” *Aerospace America*, volume 50, number 11, page 42, December 2012.
- M91 Kristin Yvonne Rozier. “Year In Review: Intelligent Systems,” *Aerospace America*, volume 49, number 11, page 39, December 2011.
- M92 Seth Harvey, Michel Ingham, and Kristin Yvonne Rozier. “Year In Review: Intelligent Systems,” *Aerospace America*, volume 48, number 11, page 41, December 2010.

Technical Reports

- T93 Kristin Yvonne Rozier, Johann Schumann, and Corey Ippolito. “Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS.” Technical Memorandum NASA/TM-2015-218817, May, 2015.

Conference Organizations

- 4/13–16/2026 *Programme Committee*, The 32nd International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2025), Torino, Italy.
- 12/11–16/2026 **Dagstuhl Workshop Organizer** (with Alessandro Cimatti, Gidon Ernst, and Paula Herber), “Software Contracts Meet System Contracts,” Schloss Dagstuhl, Germany. <https://www.dagstuhl.de/26031>
- 10/6–10/2025 *Programme Committee*, Formal Methods in Computer-Aided Design (FMCAD 2025), SRI in Menlo Park, California, USA. <https://fmcad.org/FMCAD25/>
- 8/12–15/2025 *Programme Committee*, The 28th International Conference on Theory and Applications of Satisfiability Testing (SAT 2025), Glasgow, Scotland.
- 7/14–16/2025 *Programme Committee*, The 19th International Symposium on Theoretical Aspects of Software Engineering (TASE 2025), Limassol, Cyprus.
- 6/25–27/2025 *Programme Committee*, The 23rd International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS’25), Lille, France.)
- 6/11–13/2025 **Steering Committee**, *Programme Committee*, The Seventeenth NASA Formal Methods Symposium (NFM 2025), Hampton, VA, USA.
- 5/12–14/2025 *Programme Committee*, High Confidence Software and Systems Conference (HCSS), Annapolis, Maryland, USA. http://sos-vo.org/group/hcss_conference
- 5/7–8/2025 **Programme Committee Chair** (with Gidon Ernst), The 31st International Spin Symposium (SPIN 2025), co-located with ETAPS, Hamilton, Ontario, Canada.
- 5/4/2025 *Programme Committee*, The First Workshop on Verification of Scientific Software (VSS), held in conjunction with ETAPS, Hamilton, Ontario, Canada. <https://vsl.cis.udel.edu/vss2025/>
- 5/3–8/2025 *Programme Committee*, The 31st International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2025), Hamilton, Ontario, Canada.
- 10/14–18/2024 *Programme Committee*, Formal Methods in Computer-Aided Design (FMCAD 2024), Prague, Czech Republic.

- 9/19/2024 *Programme Committee*, International Workshop on Verification and Monitoring at Runtime Execution (VORTEX), Workshop co-located with ECOOP/ISSTA, Vienna, Austria.
- 9/18–20/2024 *Programme Committee*, The 19th International Workshop on Logical and Semantic Frameworks and Applications (LSFA), Goiânia, Brasil.
- 9/9–13/2024 **Programme Committee Chair** (with André Platzer), The 26th International Symposium on Formal Methods (FM), Milan, Italy. (Set a new record for number of submissions: 245.)
- 9/9–13/2024 *Programme Committee*, The 2024 International Conference on Quantitative Formal Modeling, Analysis and Evaluation of Systems (QEST-FORMATS 2024), be held as part of CONFEST 2024, Calgary, Canada.
- 8/27–31/2024 *Programme Committee*, The 27th International Conference on Theory and Applications of Satisfiability Testing (SAT), Pune, India.
- 8/3–9/2024 *Programme Committee*, The 32nd International Joint Conference on Artificial Intelligence - Survey Track, track IJCAISurveys2024, Jeju, South Korea.
- 7/23/2024 **General Chair** (co-chairs: Natarajan Shankar, Cesare Tinelli, Moshe Y. Vardi), “Open-Source, Symbolic Model-checking framework for the model-checking research community” (OSSyM, aka “awesome”), held as a workshop of CAV, 2024, Montreal, Quebec, Canada.
- 7/22–27/2024 *Programme Committee, Area Chair (Hardware and Decision Procedures)*, The 36th International Conference on Computer Aided Verification (CAV), Montreal, Quebec, Canada.
- 6/26–28/2024 *Programme Committee*, The 22nd International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS’24), Salamanca, Spain)
- 6/11–14/2024 *Programme Committee*, The 28th Ada-Europe International Conference on Reliable Software Technologies (AEiC 2024), Barcelona, Spain.
- 6/4–6/2024 **Steering Committee, Programme Committee, Session Chair**, The Sixteenth NASA Formal Methods Symposium (NFM 2024), Moffett Field, CA, USA.
- 05/14–17/2024 *Local Organizing Committee* (with Samik Basu, Tim McNicholl (chair), Konstantin Slutsky, Eric Weber), The 2024 Association of Symbolic Logic Annual Meeting (ASL), Ames, Iowa, USA. <https://asl2024.sites.iastate.edu/>
- 5/13–16/2024 *Programme Committee*, The 15th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS) 2024, Hong Kong, China.
- 5/6–8/2024 **Programme Committee Chair** (with Darren Cofer), High-Confidence Software Systems (HCSS) Conference, Annapolis, Maryland, USA.
- 4/6–13/2024 *Programme Committee, Session Chair (Model Checking)*, The 30th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2024), Luxembourg Ville, Luxembourg.
- 03/3–8/2024 **Lorentz Center Workshop Organizer** (with Marieke Huisman, Reiner Hähnle, Paula Herber, Julien Signoles), “Contract Languages,” Universiteit Leiden, The Netherlands.
- 2/20–27/2024 *Programme Committee*, The 38th Annual AAAI Conference on Artificial Intelligence (AAAI 2024), Vancouver, Canada.
- 12/3–8/2023 **Dagstuhl Workshop Organizer** (with Ellen Enkel, Nils Jansen, and Mohammadreza Mousavi), “Model Learning for Improved Trustworthiness in Autonomous Systems,” Schloss Dagstuhl, Germany.
- 10/24–27/2023 *Programme Committee*, The 21st International Symposium on Automated Technology for Verification and Analysis (ATVA), Singapore, Singapore.
- 10/24–27/2023 **Programme Committee Chair** (with Alexander Nadel), Formal Methods in Computer-Aided Design (FMCAD 2023), Ames, Iowa, USA.
- 10/23/2023 *Programme Committee*, The 15th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2023), Ames, Iowa, USA.

- 9/19–21/2023 *Programme Committee*, 21st International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), Antwerp, Belgium.
- 9/18–23/2023 *Programme Committee*, The 28th International Conference on Formal Methods for Industrial Critical Systems (FMICS), Antwerp, Belgium.
- 8/19–25/2023 *Programme Committee*, The 31st International Conference on Artificial Intelligence - Survey Track, track IJCAIsurveys2023, Cape Town, South Africa.
- 6/26–30/2023 *Programme Committee*, The Fourteenth International Conference on Computational Logics, Algebras, Programming, Tools, and Benchmarking (COMPUTATION TOOLS), Nice, Saint-Laurent-du-Var, France.
- 7/17–22/2023 *Programme Committee*, The 35th International Conference on Computer Aided Verification (CAV), Paris, France.
- 7/17–21/2023 *Programme Committee*, VORTEX 2023: the 6th Workshop on Verification and Monitoring at Runtime Execution, Seattle, Washington, USA.
- 7/12–14/2023 *Programme Committee*, The 21st International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS'23), Guimarães (Portugal)
- 6/13–16/2023 *Programme Committee*, The 27th Ada-Europe International Conference on Reliable Software Technologies (AEiC 2023), Work in Progress Track, Lisbon, Portugal.
- 5/16–18/2023 **Programme Committee Chair** (with Swarat Chaudhuri and Jim Dabney), **Steering Committee**, The Fifteenth NASA Formal Methods Symposium (NFM 2023), Houston, Texas, USA.
- 5/9–12/2023 *Programme Committee*, The 14th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS) 2023, San Antonio, Texas, USA.
- 5/8–11/2023 **Programme Committee Chair** (with Patrick Lincoln), High-Confidence Software Systems (HCSS) Conference, Annapolis, Maryland, USA.
- 3/6/2023 *Programme Committee*, Formal Methods Teaching (FMTea) Workshop and Tutorial 2023, Lübeck, Germany.
- 2/7–14/2023 *Programme Committee*, Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI-23), Washington, D.C., USA.
- 12/5–9/2022 *Programme Committee*, The 25th Brazilian Symposium on Formal Methods (SBMF), virtual.
- 10/18–21/2022 *Programme Committee*, Formal Methods in Computer-Aided Design (FMCAD 2022), Trento, Italy.
- 10/18–19/2022 *Programme Committee*, The 14th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2022), Trento, Italy.
- 9/14–16/2022 *Programme Committee*, The 27th International Conference on Formal Methods for Industrial Critical Systems (FMICS 2022), Warsaw, Poland.
- 7/31–8/1/2022 **Chair** (with Kuldeep Meel and Giuseppe De Giacomo), On The Not So Unusual Effectiveness of Logic, a Workshop in Honor of Moshe Y. Vardi at FLoC 2022, Haifa, Israel.
- 7/23–29/2022 *Programme Committee*, The 31st International Joint Conference on Artificial Intelligence - Survey Track, track IJCAIsurveys2022, Vienna, Austria.
- 7/13–15/2022 *Programme Committee*, The 20th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS), L'Aquila, Italy.
- summer, 2022 *Programme Committee*, The 15th Summer School on Modeling and Verification of Parallel Processes (MOVEP 2022), Aalborg, Denmark. (The PC proposes invited speakers, reviews the student submissions, and advertises the school.)
- 5/23–27/2022 **Steering Committee**, *Programme Committee*, *Session Chair*, The Fourteenth NASA Formal Methods Symposium (NFM 2022), Pasadena, CA, USA.
- 5/3–6/2022 *Programme Committee*, The 13th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS) 2022, Milan, Italy.

- 4/24–28/2022 *Programme Committee*, The Thirteenth International Conference on Computational Logics, Algebras, Programming, Tools, and Benchmarking (COMPUTATION TOOLS), Barcelona, Spain.
- 4/2–7/2022 *Programme Committee*, The 28th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2022), Munich, Germany.
- 2/22–3/1/2022 *Programme Committee*, Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI-22), Vancouver, BC, Canada.
- 11/21/2021 *Programme Committee*, Formal Methods Teaching (FMTea) Workshop and Tutorial 2021 (online).
- 10/6–8/2021 *Programme Committee*, Nineteenth International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS), University of Salamanca, Salamanca, Spain.
- 10/3–6/2021 *Programme Committee*, The Thirteenth International Conference on Advances in System Testing and Validation Lifecycle (VALID 2021), co-located with SoftNet 2021, Barcelona, Spain.
- 8/23–27/2021 *Programme Committee*, ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Athens, Greece.
- 8/23–27/2021 *Programme Committee*, 19th International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), Paris, France.
- 8/21–26/2021 *Programme Committee*, 30th International Joint Conference on Artificial Intelligence - Survey Track (IJCAI21Survey2021), Montreal, Canada.
- 7/18–23/2021 *Programme Committee, Session Chair (Software Verification-Europe, Model Checking-Asia)*, The 33rd International Conference on Computer Aided Verification (CAV), Los Angeles, California, USA.
- 6/14–19/2021 *Programme Committee*, The 41th IFIP WG 6.1 International Conference on Formal Techniques for Distributed Objects, Components, and Systems (FORTE 2021), a member of the 16th International Federated Conference on Distributed Computing Techniques (DisCoTec 2021), Malta.
- 5/24–28/2021 **Steering Committee, Programme Committee, Session Chair**, The Thirteenth NASA Formal Methods Symposium (NFM 2021), Norfolk, Virginia, USA.
- 5/19–21/2021 *Programme Committee*, The 12th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), Nashville, Tennessee, USA.
- 5/18/2021 *Programme Committee*, The 6th International Workshop on Monitoring and Testing of Cyber-Physical Systems (MT-CPS), Virtual.
- 5/3–7/2021 *Programme Committee*, The 20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), London, UK.
- 4/18–20/2021 *Programme Committee*, The Twelfth International Conference on Computational Logics, Algebras, Programming, Tools, and Benchmarking (COMPUTATION TOOLS), Porto, Portugal.
- 2/2–9/2021 *Programme Committee*, Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21), virtual conference.
- 11/30–12/4/2020 *Programme Committee*, The 17th International Colloquium on Theoretical Aspects of Computing (ICTAC), Macau, S.A.R.
- 10/25–29/2020 *Programme Committee*, The Eleventh International Conference on Computational Logics, Algebras, Programming, Tools, and Benchmarking (COMPUTATION TOOLS), Nice, France.
- 10/18–22/2020 *Programme Committee*, The Twelfth International Conference on Advances in System Testing and Validation Lifecycle (VALID 2020), co-located with SoftNet 2020, Porto, Portugal.
- 10–12/2020 **Chair** (with Giles Reger), Runtime Verification Competition 2020.
- 10/6–9/2020 *Programme Committee*, The 20th International Conference on Runtime Verification (RV20), Los Angeles, California, USA.

- 9/21–25/2020 *Programme Committee*, The 35th IEEE/ACM International Conference on Automated Software Engineering (ASE), Melbourne, Australia.
- 7/11-17/2020 *Programme Committee*, International Joint Conference on Artificial Intelligence – Pacific Rim International Conference on Artificial Intelligence, Yokohama, Japan.
- 7/19–24/2020 *Programme Committee, Session Chair (Model Checking)*, The 32nd International Conference on Computer Aided Verification (CAV), Los Angeles, California, USA.
- 5/11–15/2020 **Steering Committee, Programme Committee**, The Twelfth NASA Formal Methods Symposium (NFM 2020), Moffett Field, CA, USA.
- 4/27–30/2020 *Programme Committee*, The 26th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2020), Dublin, Ireland.
- 4/21/2020 *Programme Committee*, The 5th International Workshop on Monitoring and Testing of Cyber-Physical Systems (MT-CPS), Sydney, Australia.
- 12/11/2019 *Session Chair*, NSF Workshop on Cyber-Physical System (CPS) Verification & Validation Industrial Challenges & Foundations (I&F): Safe Learning and Optimization, Carnegie Mellon University.
- 12/2–6/2019 **Publicity Co-Chair** (with Lars Michael Kristensen), The 15th International Conference on integrated Formal Methods (iFM), Bergen, Norway.
- 12/2–3/2019 *Programme Committee*, The 1st International Workshop “Formal Methods - Fun for Everybody (FMFun),” Bergen, Norway.
- 10/13–18/2019 *Programme Committee*, ACM/IEEE International Conference on Embedded Software (EMSOFT 2019), New York City, New York, USA.
- 10–12/2019 **Chair** (with Giles Reger), Runtime Verification Competition 2019.
- 10/8–11/2019 *Programme Committee*, The 19th International Conference on Runtime Verification (RV19), Porto, Portugal.
- 10/7–11/2019 *Programme Committee*, Formal Methods for Autonomous Systems (FMAS2019), Porto, Portugal.
- 9/2–5/2019 *Programme Committee*, The International Conference on Quantitative Evaluation of Systems (QEST), Glasgow, Scotland.
- 8/31/2019 *Programme Committee*, The 9th Young Researchers Workshop on Concurrency Theory (YR-CONCUR), Amsterdam, The Netherlands.
- 7/30–8/1/2019 *Programme Committee*, The Seventh IEEE International Workshop on Formal Methods Integration (FMi 2019), held in conjunction with the 20th IEEE International Conference on Information Reuse and Integration for Data Science (IRI 2019), Los Angeles, California, USA.
- 5/7–9/2019 **Programme Committee Chair** (with Julia Badger), **Steering Committee**, The Eleventh NASA Formal Methods Symposium (NFM 2019), Houston, Texas, USA.
- 4/16–18/2019 *Programme Committee*, The 10th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), Montreal, Canada.
- 4/15/2019 *Programme Committee*, The 4th International Workshop on Monitoring and Testing of Cyber-Physical Systems (MT-CPS), Montreal, Canada.
- 3/25–29/2019 *Programme Committee*, The 22nd International Conference on Design, Automation, and Test in Europe (DATE) of microelectronics and embedded systems, E3: “Model-based Design, Verification, and Security for Embedded Systems” Subcommittee, Florence, Italy.
- 11/10–13/2018 *Co-Organiser* (with Giles Reger and Volker Stolz), Runtime Verification Benchmark Challenge at the 18th International Conference on Runtime Verification, Limassol, Cyprus.
- 11/2018 *Co-Organiser* (with Wolfgang Ahrendt, Marieke Huisman, and Giles Reger), The Eighth International Symposium on Leveraging Applications of Formal Methods, Verification, and Validation (ISoLA) Track on Static and Runtime Verification, Cyprus.
- 9/30–10/5/2018 *Programme Committee*, International Conference on Embedded Software (EMSOFT 2018), Turin, Italy.

- 7/17-18/2018 *Programme Committee*, Workshop on Verification and Validation of Autonomous Systems (VaVas 2018), Oxford, UK.
- 7/7-9/2018 *Programme Committee*, The Sixth IEEE International Workshop on Formal Methods Integration (FMi 2018), held in conjunction with the 19th IEEE International Conference on Information Reuse and Integration for Data Science (IRI 2018), Salt Lake City, UT, USA.
- 6/24-25/2018 *Programme Committee*, The 15th IEEE International Conference on Embedded Software Systems (ICCESS 2018), San Francisco, CA, USA.
- 4/27/2018 *Programme Committee*, The 3rd Workshop on Safety & Security aSSurance for Critical Infrastructures Protection (S4CIP'18), in conjunction with the 3rd European Symposium on Security and Privacy (EuroS&P), London, UK.
- 4/17-19/2018 **Steering Committee**, *Programme Committee*, The Tenth NASA Formal Methods Symposium (NFM 2018), Newport News, VA, USA.
- 4/16-19/2018 *Programme Committee* The 24th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2018), Thessaloniki, Greece.
- 4/10/2018 *Programme Committee*, The Third Workshop on the Monitoring and Testing of CPS (MT-CPS 2018), held in conjunction with CPSWeek 2018, Porto, Portugal.
- 3/19-23/2018 *Programme Committee*, The 21st International Conference on Design, Automation, and Test in Europe (DATE) of microelectronics and embedded systems, E3: "Model-based Design and Verification for Embedded Systems" Subcommittee, Dresden, Germany.
- 9/17-21/2017 *Technical Programme Committee*, The 36th IEEE/AIAA Digital Avionics Systems Conference (DASC) Cyber, Systems, and Software Track, St. Petersburg, FL, USA.
- 9/13-15/2017 *Programme Committee*, The 36th International Conference on Computer Safety, Reliability and Security (SAFECOMP 2017), Trento, Italy.
- 9/4-8/2017 *Programme Committee*, European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE) Industry Track, Paderborn, Germany.
- 8/4-6/2017 *Programme Committee*, The Fifth IEEE International Workshop on Formal Methods Integration (FMi 2017), held in conjunction with the 18th IEEE International Conference on Information Reuse and Integration (IRI 2017), San Diego, CA, USA.
- 5/19/2017 *Programme Committee*, The Sixth Automated Formal Methods (AFM) Workshop, Moffett Field, CA, USA.
- 5/16-18/2017 **Steering Committee**, *Programme Committee*, The Ninth NASA Formal Methods Symposium (NFM 2017), Moffett Field, CA, USA.
- 4/25-28/2017 *Programme Committee*, The 23th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2017), Uppsala, Sweden.
- 4/21/2017 *Programme Committee*, The Second Workshop on the Monitoring and Testing of CPS (MT-CPS), held in conjunction with CPSWeek 2017 in Pittsburgh, Pennsylvania.
- 4/19/2017 *Programme Committee*, The 2nd Workshop on Safety & Security aSSurance for Critical Infrastructures Protection (S4CIP'17), in conjunction with the 2nd International Symposium on Security and Privacy (EuroS&P), Paris, France.
- 11/13-19/2016 *Programme Committee*, ACM SIGSOFT International Symposium on the Foundations of Software Engineering - Industry Papers Track (FSE 2016), Seattle, Washington, U.S.A.
- 10/21-22/2016 **Chair** The Eighth Midwest Verification Day Workshop (MVD), Ames, Iowa, U.S.A.
- 9/11-14/2016 *Programme Committee*, The 37th Annual Software Engineering Workshop (SEW-37), Gdansk, Poland.
- 07/27-30/2016 *Programme Committee*, The Fourth IEEE International Workshop on Formal Methods Integration (FMi 2016), Pittsburgh, USA.
- 07/17-18/2016 *Programme Committee*, *Session Chair*, The 8th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2016), Toronto, Canada.

- 6/7-9/2016 **Steering Committee, Programme Committee, Session Chair**, The Eighth NASA Formal Methods Symposium (NFM 2016), Minneapolis, MN, USA.
- 5/23-26/2016 *Programme Committee*, The First International Safety & Security aSSurance for Critical Infrastructures Protection (S4CIP), in conjunction with the 7th International Conference on Ambient Systems, Networks and Technologies (ANT), Madrid, Spain.
- 11/05/2015 **Publicity Chair, Programme Committee**, The Ninth International Workshop on Constraints in Formal Verification (CFV), Austin, Texas, U.S.A. A workshop affiliated with the IEEE/ACM International Conference on Computer-Aided Design 2015.
- 10/12-15/2015 *Programme Committee*, The 13th International Symposium on Automated Technology for Verification and Analysis (ATVA 2015), Shanghai, China.
- 8/12-14/2015 *Programme Committee*, The Third IEEE International Workshop on Formal Methods Integration (FMi 2015), San Francisco, California, USA.
- 07/18-24/2015 *Programme Committee*, Seventh Working Conference on Verified Software: Theories, Tools, and Experiments.(VSTTE 2015), San Francisco, California, USA.
- 6/22-26/2015 *Programme Committee*, The 20th International Symposium on Formal Methods (FM 2015), University of Oslo, Department of Informatics, Oslo, Norway.
- 6/22/2015 *Programme Committee*, The 4th International Workshop on Engineering Safety and Security Systems (ESSS 2015), a workshop affiliated with FM2015, Oslo, Norway.
Programme Committee, The 2nd International Workshop on Safety and Formal Methods (SaFoMe 2015).
- 5/4-6/2015 **Steering Committee, Programme Committee, Session Chair**, The Seventh NASA Formal Methods Symposium (NFM 2015), Pasadena, CA, USA.
- 11/2-6/2014 *Technical Programme Committee*, ACM Student Research Competition at the IEEE/ACM International Conference on Computer-Aided Design (SRC@ICCAD'14), San Jose, California, USA.
- 8/19-20/2014 *Programme Committee*, The 36th NASA Software Engineering Workshop (SEW-36), NASA Ames Research Center, Moffett Field, California, USA.
- 8/13-15/2014 *Programme Committee*, The Second IEEE International Workshop on Formal Methods Integration (FMi 2014), San Francisco, California, USA.
- 4/29-5/1/2014 **Programme Committee Chair** (with Julia Badger), **Steering Committee**, The Sixth NASA Formal Methods Symposium (NFM 2014), Houston, Texas, USA.
- 11/18-21/2013 *Technical Programme Committee*, ACM Student Research Competition at the IEEE/ACM International Conference on Computer-Aided Design (SRC@ICCAD'13), San Jose, California, USA.
- 9/11-13/2013 *Programme Committee*, The 13th International Workshop on Automated Verification of Critical Systems (AVoCS 2013), Surrey, UK.
- 8/14-16/2013 *Programme Committee*, The IEEE International Workshop on Formal Methods Integration (FMi 2013), San Francisco, California, USA.
- 6/12-14/2013 *Programme Committee*, The 10th International Conference on Integrating Formal Methods (iFM 2013), Turku, Finland.
- 5/14-16/2013 **Steering Committee, Programme Committee**, The Fifth NASA Formal Methods Symposium (NFM 2013), Moffett Field, CA, USA.
- 1/8/2013 **Steering Committee, Programme Committee**, Software Challenges in Aerospace (SCIA), Grapevine, Texas, USA.
- 10/12-13/2012 *Programme Committee*, 35th Annual IEEE Software Engineering Workshop (SEW-35), Heraclion, Crete, Greece.
- 4/3-5/2012 **Steering Committee, Programme Committee, Session Chair**, The Forth NASA Formal Methods Symposium (NFM 2012), Norfolk, Virginia, USA.
- 6/20-21/2011 *Programme Committee*, 34th Annual IEEE Software Engineering Workshop (SEW-34), Limerick, Ireland.

- 4/18-20/2011 **Steering Committee, Programme Committee, Session Chair**, The Third NASA Formal Methods Symposium (NFM 2011), Pasadena, California, USA.
- 3/29-31/2011 **Programme Co-chair** (with Ufuk Topcu and Nok Wongpiromsarn) Verification and Validation of Aerospace Systems Focused Session, AIAA Infotech@Aerospace, St. Louis, Missouri, USA.
- 4/20-22/2010 **Programme Co-chair** (with Stephen A. Jacklin) Verification and Validation of Aerospace Systems Focused Session, AIAA Infotech@Aerospace, Atlanta, Georgia, USA.
- 2010 *PC/Review committee* for NFM 2010 special issue of the NASA Journal, Innovations in Systems and Software Engineering (ISSE)
- 4/13-15/2010 *Organizing Committee, Programme Committee, Session Chair*, The Second NASA Formal Methods Symposium (NFM 2010), Washington, DC, USA.
- 2009 *PC/Review committee* for NFM 2009 special issue of the NASA Journal, Innovations in Systems and Software Engineering (ISSE)
- 4/6-8/2009 *Organizing Committee, Programme Committee, Session Chair*, The First NASA Formal Methods Symposium (NFM 2009), Moffett Field, CA, USA.
- 4/17/2008 **Chair** (with Amit Sahai) of the breakout group on Security, Privacy, and Reliability at the Visions for Theoretical Computer Science (TCS) Workshop, Seattle, Washington, USA.
- 4/30–5/2/2008 **General Chair**, The Sixth NASA Langley Formal Methods Workshop (LFM 2008), Newport News, VA, USA.

Selected Invited Technical Presentations

1. **Invited:** “Logic for Learning.” CSL 2025 Workshop on Learning and Logic (LeaLog@CSL), Amsterdam Science Park, Netherlands, February 10, 2025.
2. **Keynote:** “R2U2: Runtime Verification Takes Off!” International Workshop on Verification and Monitoring at Runtime Execution (VORTEX), September 19, 2024.
3. **Keynote:** “On Time and Space (of Humans).” Doctoral Symposium of FM 2024, Milan, Italy, September 10, 2024.
4. “Rockets, Route-Analyzers, Rotorcraft, and Robonaut2: Intelligent, On-board Runtime Reasoning.” Digital Industry Center Seminar, Fondazione Bruno Kessler (FBK), Trento, Italy, July 1, 2024.
5. “Rockets, Route-Analyzers, Rotorcraft, and Robonaut2: Intelligent, On-board Runtime Reasoning.” Colloquium de Loria, Nancy, France, June 24, 2024.
6. **Invited:** “Developing an Open-Source, State-of-the-Art Symbolic Model-Checking Framework for the Model-Checking Research Community.” 2nd R@ISE Spring Conference, University of Limerick, Ireland, Virtual, April 24, 2024.
7. **Keynote:** “Developing an Open-Source, State-of-the-Art Symbolic Model-Checking Framework for the Model-Checking Research Community.” SPIN (30th International Symposium on Model Checking Software), co-located with ETAPS 2024 in Luxembourg City, Luxembourg, 10-11 April 2024.
8. **Keynote:** “Challenges in Tool Integration: Making Formal Methods Universal.” Workshop on Cooperative Verification (Coop), co-located with ETAPS 2024 in Luxembourg City, Luxembourg, 7 April 2024.
9. “On the Effectiveness of Mission-time Linear Temporal Logic (MLTL) in AI Applications.” University of Amsterdam FOAM (Formalisation, Optimisation, Algorithms, Mechanisms) Seminar Series, <https://events.illc.uva.nl/FOAM/>, Institute for Logic, Language and Computation (ILLC), Amsterdam, the Netherlands, March 8, 2024.
10. Tutorial: “Developing an Open-Source, State-of-the-Art Symbolic Model-Checking Framework for the Model-Checking Research Community.” With Natarajan Shankar, Cesare Tinelli, Moshe Y. Vardi. FMCAD/VSTTE Tutorial Day, Ames, Iowa, USA, October 24, 2023.
11. **Invited:** “SAT-Based Explicit LTLf Satisfiability Checking ... and Beyond.” Shonan Village Center *Seminar 180: The Art of SAT*, Japan, October 3, 2023.

12. **Invited:** “Highlights of Model Checking and Runtime Verification of Aerospace Systems.” International Verifiability Talk Series, hosted by King’s College, London, UK, July 6, 2023. (Virtual) <https://verifiability.org/events> and <http://bit.ly/VerifiabilityChannel>
13. **Invited:** “Dealing with Requirements Validation in Safe & Secure Civil Avionics.” 21st Software Certification Consortium Meeting on *Fundamental Questions Regarding Assuring Safety of Software Intensive Systems*, Annapolis, Maryland, USA, May 11, 2023.
14. **Keynote:** “On Time and Space (of Humans).” ETAPS Mentoring Workshop, Paris, France, April 23, 2023.
15. **Invited:** “On the Effectiveness of Mission-time Linear Temporal Logic (MLTL) in AI Applications.” AAAI Symposium “On the Effectiveness of Temporal Logics on Finite Traces in AI,” San Francisco, California, USA, March 27–29, 2023. <https://aaai.org/Symposia/Spring/sss23.php>
16. **Invited:** “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Embry-Riddle Aeronautical University (ERAU) College of Engineering Seminar Series, Daytona Beach, Florida, February 27, 2023.
17. **Invited Survey:** “Inspiration from NASA Formal Methods Success Stories.” Dagstuhl *Seminar 23041 – Integrated Rigorous Analysis in Cyber-Physical Systems Engineering*, Germany, January, 2023.
18. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Carnegie Mellon Principles of Programming (PoP) Seminar, Pittsburgh, Pennsylvania, December 8, 2022.
19. **Keynote:** “Developing an Open-Source, State-of-the-Art Symbolic Model-Checking Framework for the Model-Checking Research Community.” 25th Brazilian Symposium on Formal Methods (SBMF), Virtual, December 8, 2022.
20. “From English Assume-Guarantee Contracts to Validated Temporal Logic Specifications,” Dagstuhl *Seminar 22451 – Principles of Contract Languages*, Germany, November 9, 2022.
21. “Proofs that Fly! Logic, Automata, and Set Theory in Air and Space.” Math Logic Seminar, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, October 25, 2023.
22. Guest lecture on “Linear Temporal Logic: Elicitation, Satisfiability, and Validation.” CS 15-816 “Advanced Topics in Logic: Automated Reasoning and Satisfiability,” Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, October 10, 2023.
23. **Panelist:** Mentor “Ask Me Anything” Panel, CAV-related Mentoring Workshop at FLoC 2022 (<https://easychair.org/smart-program/FLoC2022/Mentor-2022-08-05.html>), Haifa, Israel, August 5, 2022.
24. **Keynote:** “On Time and Space (of Humans).” CAV-related Mentoring Workshop at FLoC 2022 (<https://easychair.org/smart-program/FLoC2022/Mentor-2022-08-05.html>), Haifa, Israel, August 5, 2022.
25. “Rockets, Route-Analyzers, Rotorcraft, and Robonaut2: Intelligent, On-board Runtime Reasoning.” University of Manchester Autonomy and Verification Seminar Series, Manchester, UK, June 10, 2022.
26. “Rockets, Route-Analyzers, Rotorcraft, and Robonaut2: Intelligent, On-board Runtime Reasoning.” University of Bristol Trustworthy Systems Seminar Series, Bristol, UK, June 7, 2022.
27. **Invited Mentoring Seminar:** “Personal Journey in Electrical and Computer Engineering in Space.” *Develop. Enhance. Sustain. Computer Engineering in the Space Sector Seminar*, Asteria: Space and Satellites, Oxford, UK (Virtual), May 19, 2022.
28. “Rockets, Route-Analyzers, Rotorcraft, and Robonaut2: Intelligent, On-board Runtime Reasoning.” University of Minnesota Aerospace Engineering and Mechanics (AEM) Seminar Series, Minneapolis, Minnesota, December 10, 2021.
29. “NASA JSC Vehicle System Manager (VSM) Formal Methods Training Course.” NASA Johnson Space Center, Houston, Texas, November 12, 2021.
30. **Keynote:** “R2U2: Runtime Verification Takes Off!” The 4th International Conference on Aerospace and Aeronautical Engineering (Aerospace-2021), Valencia, Spain, October 25–27, 2021.
31. “Formal Methods! Laboratory for Temporal Logic at ISU.” AIAA, Student Chapter Seminar, Iowa State University, Ames, IA, April 20, 2021.

32. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” 13th Annual Flight Software Workshop (FSW), Laurel, Maryland, USA, February 8-11, 2021.
33. **Keynote:** “On the Future of Flight Software.” ACM SIGPLAN conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH)/Rebase, Chicago, Illinois, USA, November 15–20, 2020.
34. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” Fall 2020 Aerospace Industrial Advisory Council (IAC) Meeting, Iowa State University, Ames, Iowa, November 6, 2020.
35. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Penn State Aerospace Engineering Research Seminar, State College, Pennsylvania (via zoom), October 22, 2020.
36. “Temporal Logic Satisfiability: Future, Present, and Past” CS Logic and Algorithms for Programming Intelligent Systems (LAPIS) Research Seminar, Rice University, Houston, TX (via zoom), July 15, 2020.
37. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” JEDI Research Seminar, JAXA Tsukuba, Japan, January 9, 2020.
38. **Invitation-only Workshop:** “Safe Learning: A Challenge Talk” *NSF Workshop on Cyber-Physical System (CPS) Verification & Validation Industrial Challenges & Foundations (I&F): Safe Learning and Optimization*, Carnegie Mellon University, December 11, 2019.
39. **Keynote:** “Runtime Reasoning that Really Flies.” Workshop on Formal Methods for Autonomous Systems (FMAS), Porto, Portugal, October 11, 2019.
40. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” Control and Dynamical Systems Seminar. CalTech, Pasadena, California, May 17, 2019.
41. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” Mobility and Robotics Section Seminar, NASA-JPL, Pasadena, California, May 14, 2019.
42. **Keynote:** “From Simulation to Runtime Verification and Back: Connecting Single-Run Verification Techniques.” Aviation Simulation Challenges (AviSim) at the 2019 Spring Simulation Conference (SpringSim’19), The Society for Modeling and Simulation, Tucson, AZ, April 29–May 2, 2019.
43. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Boeing Engineering Seminar, Huntsville, Alabama, April 15, 2019.
44. “Challenges for Certifying Autonomy.” Dagstuhl Seminar 19112, “Engineering Reliable Multiagent Systems,” March 10–15, 2019.
45. “Formal Specification Patterns for Sanity Checking.” Dagstuhl Seminar 19081, “Verification and Synthesis of Human-Robot Interaction,” February 17–22, 2019.
46. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” University of Iowa Engineering Seminar, Iowa City, Iowa, February 1, 2019.
47. **Invitation-only Workshop:** “Formal Methods for Common Sense: A Challenge” *NSF Workshop on Cyber-Physical System (CPS) Verification & Validation Industrial Challenges & Foundations (I&F): Safe Learning and Safe Acting*, Carnegie Mellon University, December 12, 2018.
48. “From Unmanned Aerial Systems to Robonaut2: On-board Runtime Reasoning in Air and Space.” UMD Robotics Center Seminar. College Park, Maryland, November 16, 2018.
49. “Proofs that Fly! Logic, Automata, and Set Theory in Air and Space.” Discrete Mathematics Seminar, Iowa State University, Ames, IA, October 26, 2018.
50. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” AIAA, Student Chapter Seminar, Iowa State University, Ames, IA, October 23, 2018.
51. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Women in Aviation International, Student Chapter Seminar, Iowa State University, Ames, IA, October 2, 2018.

52. “MAX-SAT for Temporal Logics.” Invitation-only workshop on the *Theory and Practice of Satisfiability Solving*, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), of Casa Matemática Oaxaca (CMO), Oaxaca, Mexico, August 26–31, 2018.
53. “What is Autonomy?” Pembroke Papers Talk, Pembroke College, Cambridge University, Cambridge, UK, July 19, 2018.
54. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” **Distinguished Speakers Seminar Series**, hosted by Oxford Women in Computer Science Society, Oxford University, UK, May 1, 2018.
55. “Multi-Platform, Multi-Architecture Runtime Verification for Autonomous Systems.” Formal Verification Technical Seminar, Oxford University, UK, May 1, 2018.
56. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” ECSEL Seminar, ISU’s Electrical, Computer, and Software Engineers as Leaders (ECSEL) program for undergraduate woman students, Ames, Iowa, April 25, 2018.
57. “Multi-Platform, Multi-Architecture Runtime Verification for Autonomous Systems.” National Institute for Aerospace, NASA Langley Research Center, Hampton, Virginia, April 20, 2018.
58. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” IEEE Central Iowa Section Meeting Lecture, Ames, Iowa, March 22, 2018.
59. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” DLR, Braunschweig, Germany, November 16, 2017.
60. “Specification: The Biggest Bottleneck in Formal Methods and Autonomy.” Dagstuhl Seminar 17462, “A Shared Challenge in Behavioural Specification,” November 13, 2017.
61. “R2U2: Formal System Health Management for Autonomous Systems.” Rockwell Collins Trusted Systems/Autonomous Systems Research Seminar, Cedar Rapids, Iowa, September 25, 2017.
62. **Invitation-only Workshop:** “Safe CPS Implementation: How Do We Measure That?,” *NSF Workshop on Cyber-Physical System (CPS) Verification & Validation Industrial Challenges & Foundations (I&F): CPS and AI Safety*, Carnegie Mellon University, May 12, 2017.
63. “Specification: the Biggest Bottleneck in Formal Methods and Autonomy.” CS Logic and Algorithms for Programming Intelligent Systems (LAPIS) Research Seminar, Rice University, Houston, TX, May 4, 2017.
64. “R2U2: Formal System Health Management for Autonomous Systems.” NASA STMD ECF: “Verification and Validation of Autonomous Systems” Seminar, Johnson Space Center, Houston, TX, May 3, 2017.
65. “R2U2: Formal System Health Management for Autonomous Systems.” Electrical and Computer Engineering Seminar, Iowa State University, Ames, IA, April 13, 2017.
66. “What is Autonomy?” Spring 2017 Aerospace Industrial Advisory Council (IAC) Meeting, Iowa State University, Ames, IA, April 4, 2017.
67. “What is Autonomy?” DARPA Information Science and Technology (ISAT) “Communicating Intent for Autonomy” Workshop, Arlington, VA, March 16–17, 2017.
68. “R2U2: On-Board System and Safety Health Management of Unmanned Aerial Systems (UAS),” Boeing and Rockwell Collins Seminar, March 1, 2017.
69. “Specification: the Biggest Bottleneck in Formal Methods and Autonomy.” Dagstuhl Seminar 17071, “Computer-Assisted Engineering for Robotics and Autonomous Systems,” February 12-17, 2017.
70. “Adding Runtime Verification without Losing Certification.” Software Challenges in Aerospace, AIAA SciTech, Grapevine, Texas, January 9, 2017.
71. “R2U2: Formal System Health Management for Autonomous Systems.” NASA JPL Mobility and Robotics Section Seminar@198-102, Pasadena, CA, December 16, 2016.
72. “R2U2 in Space: System and Software Health Management for Small Satellites.” Spacecraft Flight Software Workshop (FSW), California Institute of Technology, Pasadena, CA, December 13–15, 2016.
73. “Runtime Verification for System Health Management: the R2U2 Framework.” Computer-Aided Verification and Reasoning (CAVR) Seminar, Rice University, Houston, TX, October 19, 2016.

74. “Linear Temporal Logic Satisfiability Checking.” Invitation-only workshop on the *Theoretical Foundations of SAT Solving*, Fields Institute, Toronto, Canada, August 15-19, 2016.
75. **Keynote:** “Specification: The Biggest Bottleneck in Formal Methods and Autonomy.” Conference on Verified Software: Theories, Tools, and Experiments (VSTTE), Toronto, Canada, July 18, 2016.
76. **Invitation-only Workshop:** “Specification: The Biggest Bottleneck in Aerospace V&V and Autonomy.” *NSF Workshop on Cyber-Physical System (CPS) Verification & Validation Industrial Challenges & Foundations (I&F): CPS and AI Safety*. The purpose of this NSF-sponsored workshop is to make academic solutions meet industrial challenges with the goal of identifying the most important present and future foundational challenges in cyber-physical systems verification and validation (CPS V&V) in the advent of increasingly AI-enhanced control in autonomous systems. Carnegie Mellon University, May 6, 2016.
77. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Autonomous Systems.” Northeastern University ECE Department Cyber-Human Systems and Robotics Seminar, April 4, 2016.
78. “Design-Time Formal Verification for Full-Scale Automated Air Traffic Control.” Galois Seminar, Portland, OR, March 24, 2016.
79. “R2U2: System Health Management for Intelligent Autonomous Unmanned Aerial Systems (UAS).” Microsoft Research Seminar, Redmond, WA, March 22, 2016.
80. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” Iowa State University Aerospace Engineering Seminar, Ames, IA, March 4, 2016.
81. “R2U2: System Health Management for Intelligent Autonomous Unmanned Aerial Systems (UAS).” Embry-Riddle Aeronautical University IEEE Daytona Section/ECSSE Department Colloquium, Daytona Beach, FL, February 29, 2016.
82. “Verification” University of Cincinnati, AEEM 5023-Spacecraft Design II course invited lecture, February 5, 2016.
83. “From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems.” University of Michigan Aerospace Engineering Seminar, Ann Arbor, MI, February 2, 2016.
84. **Seminar, Tutorial, and Short-term visit:** “Linear Temporal Logic Satisfiability Checking,” Theory Reading Group, KTH Royal Institute of Technology, Stockholm, Sweden, December 14–18, 2015.
85. **Keynote:** “Layers of Formal Verification for Full-Scale NextGen Automated Air Traffic Control,” Layered Assurance Workshop (LAW). Los Angeles, California, December 7–8, 2015.
86. EECS Department Research Seminar, University of Cincinnati, November 30, 2015.
87. “Formal Methods!” University of Cincinnati, EECE 6032-Software Testing and Quality Assurance course invited lecture, November 20, 2015.
88. “From Planes to UAS: Safe, Automated Air Traffic Control.” Grace Hopper Celebration of Women in Computing (GHC), Houston, Texas, October 15, 2015.
89. “Symbolic Model Checking for Full-Scale Design Space Exploration of NextGen Automated Air Traffic Control.” Computer-Aided Verification and Reasoning (CAVR) Seminar, Rice University, October 14, 2015.
90. “Intelligent Autonomous Unmanned Aerial Systems (UAS) and R2U2: a System Health Management Framework.” University of Cincinnati Seminar, October 8, 2015.
91. **Keynote:** “Intelligent Autonomous Unmanned Aerial Systems.” Safe and Secure Systems and Software Symposium (S5), sponsored by the Air Force Research Laboratory (AFRL), June 10, 2015. <http://www.mys5.org/>
92. “Linear Temporal Logic Satisfiability Checking.” Dagstuhl Seminar 15171, “Theory and Practice of SAT Solving” April 19-24, 2015.
93. “Formal Methods: Designing Safety-Critical Aerospace Systems at the University of Cincinnati.” Presentation at UC AEEM Advisory Board Meeting, April 17, 2015.

94. "Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS." Poster and Presentation at College Advisory Council Meeting, University of Cincinnati, April 10, 2015.
95. "Formal Methods!" University of Cincinnati, EECE 6032-Software Testing and Quality Assurance course invited lecture, March 31, 2015.
96. "Crazy Idea: Net-Enabled Aircraft!" Invited Symposium at SRI's Crazy Idea Friday, March 20, 2015.
97. Research presentation at AEEM graduate student recruitment weekend, University of Cincinnati, March 7, 2015.
98. "Formal Methods! Designing Safety-Critical Systems at University of Cincinnati." Invited Symposium at University of Victoria's "Women in Engineering and Computer Science" Symposium series, February 27, 2015. <https://wecs.csc.uvic.ca/>
99. "Formal Methods Challenge: Efficient Reconfigurable Cockpit Design and Fleet Operations using Software Intensive, Networked, and Wireless-Enabled Architecture (ECON)." Dagstuhl Seminar 15071, "Formal Foundations for Networking," February 8-13, 2015.
100. "Formal Methods! Join the Laboratory for Temporal Logic at UC." Featured faculty speaker at joint AIAA/ACM-W student chapters meeting, February 3, 2015.
101. "Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS" with Johann Schumann and Corey Ippolito. 2015 NARI LEARN/Seedling Technical Seminar, January 13, 2015. <https://ac.arc.nasa.gov/p8rh8dsei1p/?launcher=false&fcsContent=true&pbMode=normal>
102. **Invitation-only Workshop:** "Integration of Formal Methods into Design and Implementation of Aerospace Systems." Cyber-Physical Systems (CPS) Verification & Validation: Industrial Challenges & Foundations, Carnegie Mellon University, December 11-12, 2014.
103. "Women in STEM Career Talk" Santa Clara University Women in STEM club, November 20, 2014.
104. "Probabilistic Model Checking for Comparative Analysis of Automated Air Traffic Control Systems." AFT Seminar, *NASA Ames Research Center*, October 27, 2014. (A = Aeronautics Directorate; F = Aviation Systems Division; T = Flight Trajectory Dynamics and Controls Branch)
105. **Keynote:** Systems Lunch, an event affiliated with the Grace Hopper Celebration of Women in Computing (GHC 2014), Phoenix, Arizona, October 10, 2014.
106. **Featured PI Presentation:** "Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS." One of three NASA Aeronautics Research Institute (NARI) PIs featured as the 'best of' funded research for the 2012-2014 funding periods, presenting to over 150K members of the public at NASA Ames Open House, Moffett Field, California, October 18, 2014.
107. **Panelist:** "Ask a NASA Expert." Served on **two panels** of six experts (11am & 3pm), NASA Ames Open House, Moffett Field, California, October 18, 2014.
108. **NASA TV/Ames Featured Speaker:** "No More Helicopter Parenting: Intelligent Autonomous Unmanned Aerial Systems." NASA Ames' premier seminar series, the Director's Colloquium, special edition in honor of NASA Ames' 75th Anniversary celebration, by special invitation of the Office of the Chief Scientist. NASA Ames Research Center, Moffett Field, California, June 10, 2014. (See this talk on NASA's YouTube channel: <https://www.youtube.com/watch?v=FTxT-fbCleA&list=UUggQcRNVNRaH3uEb4nqf0zg>)
109. "From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aerospace Systems." University of Cincinnati Aerospace Engineering Seminar, Cincinnati, Ohio, May 19, 2014.
110. "From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aeronautics Systems." Tulane Computer Science Seminar, New Orleans, Louisiana, April 23, 2014.
111. "From Design Time To Run Time: Formal Methods for Ensuring the Safety of Safety-Critical Aeronautics Systems." Arizona State University Computer Science Seminar, Tucson, Arizona, April 17, 2014.
112. "Advances in Linear Temporal Logic Translation: Ensuring the Safety of Safety-Critical Aeronautics Systems." Montana State University Computer Science Department Seminar, Bozeman, Montana, March 28, 2014.

113. **Keynote:** “LTL Satisfiability Checking.” Eighth International Workshop on Constraints in Formal Verification, a workshop affiliated with the IEEE/ACM International Conference on Computer-Aided Design, San Jose, California, November 21, 2013.
114. “Formal Specification: Linear Temporal Logic and Applications in Runtime Monitoring.” University of Miami, Department of Electrical and Computer Engineering EEN 417: Embedded Microprocessor System Design course invited lectures, September 25, 2013.
115. “Formal Specification: Linear Temporal Logic and Applications” and “Model Checking and Applications of Formal Methods at NASA.” Invited lectures for graduate course EEN 513 - Software Design and Verification (a course based in part on paper Roz11), University of Miami, Department of Electrical and Computer Engineering, September 24–26, 2013.
116. “Formal Methods and Other Awesome Applications in Engineering.” University of Miami, Department of Electrical and Computer Engineering EEN 112: Introduction to Engineering course invited lecture, March 6, 2013.
117. “Formal Specification and Verification: Linear Temporal Logic, State Machines, and Their Applications.” University of Miami, Department of Electrical and Computer Engineering EEN 417: Embedded Microprocessor System Design course invited lectures, October 12, 2012.
118. “Formal Specification and Verification of a Coordination Protocol for an Automated Air Traffic Control System at NASA.” University of Miami, Invited College of Engineering Colloquium, Miami, Florida, October 10, 2012.
119. “Probabilistic Formal Verification of the Automated Airspace Concept High-Level Architecture.” AFT/RSE Seminar, *NASA Ames Research Center*, June 25, 2012. (A = Aeronautics Directorate; F = Aviation Systems Division; T = Flight Trajectory Dynamics and Controls Branch)
120. “Explicit and Symbolic Compilation of Linear Temporal Logic to Automata for Verification.” PERFORM Performability Engineering Research Group Seminar Series, *University of Illinois at Urbana-Champaign* Coordinated Science Laboratory, Urbana, Illinois, February 17, 2012.
121. “A Multi-Encoding Approach for LTL Symbolic Satisfiability Checking,” Invited symposium at *Galois, Inc*, Portland, OR, August 10, 2011, <http://corp.galois.com/blog/>.
122. “Formal Verification of the Automated Airspace Concept High-Level Architecture,” AFT Seminar, *NASA Ames Research Center*, May 9, 2011. (A = Aeronautics Directorate; F = Aviation Systems Division; T = Flight Trajectory Dynamics and Controls Branch)
123. “Formal Methods for NGATS System Verification Explained,” NGATS Airspace AFT Seminar, *NASA Ames Research Center*, November 2, 2009. (A = Aeronautics Directorate; F = Aviation Systems Division; T = Flight Trajectory Dynamics and Controls Branch)
124. “Formal Methods Explained,” *University of Nevada at Reno* Computer Science & Engineering Colloquium Series, Reno, Nevada, October 29, 2009.
125. “Solving the Two Body Problem,” Panel organizer and panelist with Katy Dickinson (Sun Microsystems), Amarda Shehu (George Mason University), Evgenia Smirni (College of William and Mary). *Grace Hopper Celebration (GHC) of Women in Computing Conference*, Tucson, Arizona, September 30–October 3, 2009. (Presentation 1:45PM - 2:45PM on Oct. 2.)
126. “Women and the Flat Connected World,” Panel with Meenakshi Kaul-Basu (Sun Microsystems), Bev Crair (Quantum Corporation), Claudia Galván (Microsoft Corporation), Lydia Ash (Google), Radha Ratnaparkhi (IBM), Sumitha Prashanth (Sun Microsystems). *Grace Hopper Celebration (GHC) of Women in Computing Conference*, Tucson, Arizona, September 29–October 3, 2009. (Presentation 11:15AM - 12:15PM on Oct. 1.)
127. “MAGIC: Setting Up An Effective Organization To Support Girls,” Birds of a Feather (BOF) with Ira Pramanick, Fauzia Saeed, Katy Dickinson, Meenakshi Kaul-Basu, and Robin Wilensky. *Grace Hopper Celebration (GHC) of Women in Computing Conference*, Keystone Resort, Colorado, October 1–4, 2008. (Presentation 5:10PM - 6:10PM on Oct. 3.)
128. “Choosing Your Building Bricks: How to Find Your Research Direction,” Presentation with Kristen R. Walcott and Katie Panciera. *Grace Hopper Celebration (GHC) of Women in Computing Conference*, Keystone Resort, Colorado, October 1–4, 2008. (Presentation 2:50PM - 3:50PM on Oct. 3.)

129. “On Formal Methods.” *Longwood University Mathematics & Computer Science Colloquium Series*, Farmville, Virginia, September 4, 2008.
130. “Life-Critical System Verification.” *Visions for Theoretical Computer Science Workshop (TCS Visions)*, Seattle, Washington, May 17, 2008. Contributed to several nuggets; see Life-Critical System Verification in particular.
131. **Invited:** “Career Life Balance.” *Committee on the Status of Women in Computing Research (CRA-W) 2008 Grad Cohort Program for Women*, Seattle, WA, March 13–14, 2008.
132. “Symbolic LTL Compilation for Model Checking.” *Grace Hopper Celebration (GHC) of Women in Computing Conference*, Orlando, Florida, October 17–20, 2007.
133. NGATS Airspace API/Researcher Meeting Featured Presentation, *NASA Langley Research Center*, June 27, 2007.
134. Safety Critical Avionics Systems Branch Talk, *NASA Langley Research Center*, September 20, 2006.
135. “Algorithms for Automata-Theoretic Linear Temporal Logic Model Checking.” *Games and Verification (GAMES 2006)*, July 3–7, 2006.
136. “Algorithms for Automata-Theoretic LTL Model Checking.” *Cambridge University Automated Reasoning Group (ARG) Lunch Lecture Series*, June 28, 2006.

Selected Poster Presentations

- Poster: “CAREER: Theoretical Foundations of the UAS in the NAS Problem (Unmanned Aerial Systems in the National Air Space).” NSF CPS PI Meeting, Arlington, VA, November 21–22, 2019.
- Poster: “An Airspace Abundant with Automation.” De Lange Conference X on Humans, Machines, and the Future of Work, Rice University, Houston, TX, December 5–6, 2016.
- Poster: “CAREER: Theoretical Foundations of the UAS in the NAS Problem (Unmanned Aerial Systems in the National Air Space).” NSF CPS PI Meeting, Arlington, VA, October 31–November 1, 2016.

Training

- Next Big Research Challenges in Cyber-Physical Systems Invitation-only NSF Workshop, April 22-23, 2021.
- SWE Academic Leadership for Women in Engineering (ALWE) 2020-21 program; January 8-9, 2021
- ISU inaugural cohort of Research Collaboration Catalysts program, 2020-2021
- Shonan Village Center *Seminar 153 “The 3rd Controlled Adaptation of Self-adaptive Systems (CASaS)”*, Japan, January 13–17, 2019.
- Private Pilot Ground School, Trade Winds Aviation, Reid-Hillview Airport, San Jose, CA (6/13–9/19/2013)
- Long-term participant in the Programme on Logic and Algorithms at the Isaac Newton Institute for Mathematical Sciences (INI) at Cambridge University, and Unclassified Graduate Student, Pembroke College (01/06–07/06);
- Marktoberdorf formal methods school on Logical Aspects of Secure Computer Systems (8/2–14/05)
- Lipari School on Formal Methods: Theory and Practice (7/10–23/05)
- NASA Langley PVS Class (2003, 2007)
- NASA Airframe Noise Workshop (10/22–23/02)
- NASA Engineering Training (NET) Aeronautics Workshop (6/10–13/02)

Teaching Experience

Iowa State University

Spring 2024-25	361/Computational Techniques for Aerospace Design	<i>Major Course Updates</i>
Fall 2023-24	407/507/Applied Formal Methods	<i>Continuous improvements</i>

Spring 2022	361/Computational Techniques for Aerospace Design	<i>Major Updates to Lab Manual</i>
Spring 2019-20	361/Computational Techniques for Aerospace Design	<i>Major Updates to Lab Manual</i>
Spring 2018	361/Computational Techniques for Aerospace Design	<i>New Curriculum Development</i>
Fall 2017	160/Aerospace Engineering Problems (1/4 semester)	<i>New Curriculum Development</i>
Fall 2017-21	407X/507X/Applied Formal Methods	
Spring 2017	407X/507X/Applied Formal Methods	<i>New Course Development; 5/5</i>
University of Cincinnati		
Spring 2016	Formal Methods for Aerospace Engineering	<i>5/5</i>
Fall 2015	Mathematical Logic and Requirements Specification	<i>New Course Development; 4.5/5</i>
Spring 2015	Formal Methods for Aerospace Engineering	<i>New Course Development</i>
Rice University		
Fall 2005	Analysis of Algorithms	<i>Teaching Assistant</i>
Spring 2005	Discrete Mathematics	<i>Teaching Assistant</i>
Fall 2004	Analysis of Algorithms	<i>Teaching Assistant</i>
College of William and Mary		
Spring 2001	Computer Science for Non-Majors Laboratory	<i>Two Sections</i>
Fall 2000	Computer Science for Non-Majors Laboratory	<i>Two Sections</i>

Summer Schools, Short Courses, and Co-Teaching

- **Summer School on Formal Techniques**, Menlo Park, CA, USA, May 26-30, 2025.
- **SAT/SMT/AR Summer School** (co-located with IJCAR), Nancy, France, June 26-29, 2024. <https://sat-smt-ar-school.gitlab.io/www>
- **NASA JSC Lunar Gateway Vehicle System Manager (VSM) Formal Methods Training Course**, Houston, Texas, November 12, 2021.
- **How Logic Begets Peace**, part of the ISU Honors Seminar *The Art and Science of Peace*, Ames, Iowa, September 14, 2021.
- **Summer School 2021 on Formal Methods for Trustworthy Artificial Intelligence**, East China Normal University (ECNU), Shanghai, China August 23–27, 2021. [Virtual]
- **Fourth Swedish Summer School on Cyber-Physical Systems (SCPS)**, “Safe Intelligent Systems” theme. Course title: *Linear Temporal Logic Symbolic Model Checking*. Halmstad, Sweden, June 8–12, 2020. [Postponed, then ultimately canceled due to COVID-19]

Advising Experience

Graduated Students (by graduation date)

2024	Brian Kempa, Ph.D. in Aerospace Engineering, ISU
2024	Christopher Johannsen, M.S. in Computer Science, ISU
2022	Esther Conrad, Ph.D. in Mathematics, ISU
2021	Christopher Pohlen, M.S. in Human-Computer Interaction (HCI), ISU
2021	Zachary Luppen, M.S. in Aerospace Engineering, ISU
2021	Pei Zhang, Ph.D. in Computer Engineering, ISU
2020	Rohit Dureja, Ph.D. in Computer Science, ISU
2019	Matthew Cauwels, M.S. in Computer Engineering, ISU
2019	Brian Kempa, M.S. in Aerospace Engineering, ISU

————— **Funded and advised by KYR from NASA while completing university degrees** —————

2016	Marco Gario, Ph.D. in Formal Methods and Diagnosis, Università degli Studi di Trento & Fondazione Bruno Kessler (FBK)
2016	Cristian Mattarei, Ph.D. in Information and Communication Technology, Università degli Studi di Trento & Fondazione Bruno Kessler (FBK)
2015	Patrick Moosbrugger, M.S. in Embedded Systems, UAS Technikum Wien, Vienna

2014 Johannes Geist, M.S. in Embedded Systems, Fachhochschule Technikum Wien
2013 Thomas Reinbacher, Ph.D. in Computer Engineering, Technische Universit at Wien
2013 Yang Zhao, Ph.D. in Computer Science, University of California, Riverside

Postdoc

2023-2024 Postdoctoral advisor, Katherine Kosaian [now faculty at University of Iowa]
2017-2019 Postdoctoral advisor, Jianwen Li [now faculty at East China Normal University]

Ph.D.

2024-present Ph.D. advisor, Alec Rosentrater (AERE)
2023-present Ph.D. advisor, Elizabeth Sloan (HCI)
2023-present Ph.D. advisor, Zili Wang (COMS)
2022-present Ph.D. advisor, Christopher Johannsen (COMS)
2021-present Ph.D. advisor, Laura Paola Gamboa Guzman (MATH)
2019-2024 Ph.D. advisor, Brian Kempa (AERE) [graduated]
2018-2022 Ph.D. co-advisor (with Leslie Hogben), Esther D. Conrad (MATH) [graduated]
2018-2019 Ph.D. advisor, Balaji Sivasubramanian (AERE) [left Collins Aerospace; was in Collins education program]
2017-2021 Ph.D. co-advisor (with Phillip Jones), Pei Zhang (ECpE) [graduated]
2016-2017 Mentor, advising Stefan Jaksic, Ph.D. student visiting ISU from Technikum Wien, Vienna, on NASA Autonomy Operating System project [completed visit]
2015-2020 Ph.D. advisor, Rohit Dureja (COMS) [graduated]
2015 Ph.D. advisor, Siddharth Sridhar, UC Ph.D. student in AEEM [didn't move to ISU]

Masters

2024-present M.S. research advisor, Michael Jacks (AERE)
2022-2024 M.S. research advisor, Christopher Johannsen (COMS) [graduated]
2020-2021 M.S. research advisor, Christopher Pohlen (HCI) [graduated]
2019-2021 M.S. co-advisor (with Dae Young Lee), Zachary Luppen (AERE) [graduated]
2018-2019 M.S. co-advisor (with Phillip Jones), Matthew Cauwels (ECpE) [graduated]
2017-2019 M.S. research advisor, Brian Kempa (AERE) [graduated]

Undergraduate Researchers

2024-2025 Boeing Fellowship advisor, Maheeka Devarakonda (EE)
2023-2024 Boeing Fellowship advisor, Luke Werthmann (AERE)
2022-2023 Honors Project research advisor: Ellie Diersen (AERE) "Survival Guide for Young Women in Aerospace Engineering"
2022-2023 Honors Project research advisor: Jessica A. Melville (AERE) "Cultivating a Sense of Belonging for Incoming Female Engineering Students"
2022-2023 Boeing Fellowship advisor, Taylor Warneke (AERE), "OpenUAS Avionics/Software Design for Reconfigurability"
Summer 2022 Research Experiences for Undergraduates (REU) advisor to Jenna Elwing, Jeremy N. Sorkin, Chiara Angels Travasset, and Zili Wang [NSF Award #1950583 "Math REU @ ISU" <https://reu.math.iastate.edu/projects.html>]
2021-2023 Honors Project research advisor: Khanh Hoang (AERE) "Autonomous Flight for a Quadcopter Drone"
2021-2022 Boeing Fellowship advisor, Abigail (Andy) Hammer, "Specification Elicitation using Assume Guarantee Contracts"

Summer 2021 Research Experiences for Undergraduates (REU) advisor to Kaili Henry, Yang He [NSF Award #1757393 “REU Site: Launching Aerospace’s Underrepresented Students into the Next Chapter - Unmanned Aerial Systems (LAUNCH-UAS)”]

2021-2023 Independent REU advisor to Michael Jacks, Muhamed Stilic, Nathan Baughman, Ryan Nasers

2021-2022 Honors Project research advisor: Hanna Stec (AERE)

2020-2021 Boeing Fellowship advisor, Colton Glick, “OpenUAS Development and Verification”

2020-2021 ECPE Senior Design Team Advisor on “IoT Security Verification” to undergraduates: KayAnne Bryant (Computer Engineering), Vincent Johnson (Software Engineering with a minor in Cyber Security), Jacob Conn (Computer Engineering), Jordan McKillip (Software Engineering), Joshua French (Computer Engineering), Marcus Reecy (Cyber Security)

2020 NSF REU advisor to Abigail Hammer (AERE), Meaghan McCleary (AERE)

2020 Summer Engagement in Cyber Undergraduate Research Experiences (SECURE) advisor to Marcella Anderson (ECpE), Muhamed Stilic (ECpE) [sdweb.ece.iastate.edu/sdmay21-41/www.docs.html]

2020-2021 Honors Project research advisor: Alexander Vande Loo (AERE)

2019-present Freshman honors/undergraduate project advisor: R2U2 Development: Gabriel Bayse (AERE, 2021-2022), Karthik Prasath (AERE/COMS 2022-23), Zachary Lewis (AERE, 2019-2022), Lily A. Rogers (AERE, 2021-2023), Meaghan McCleary (AERE, 2019-2020), Alec Rosentrater (AERE, 2022-2023), Jessica Melville (AERE, 2019-2022), Hanna Stec (AERE, 2019-2023), Colton Pilch (AERE, 2019-2020), Luke Werthmann (AERE, 2021-2022)

Summer 2019 Research Experiences for Undergraduates (REU) advisor to Aeowyn Kendall (Physics@Messiah College) and Judith Garcia (Computer Science@University of Texas at El Paso) [NSF Award #1757393 “REU Site: Launching Aerospace’s Underrepresented Students into the Next Chapter - Unmanned Aerial Systems (LAUNCH-UAS)”]

2019-2021 Specification patterns research advisor to undergraduates: Abigail Hammer (AERE), Benjamin Hertz (AERE)

2018-2019 Freshman honors advisor to: Abigail Hammer (AERE)

2017 B.S. research co-advisor (with Joseph Zambreno), Bijan Choobineh (ECpE)

2017-present OpenUAS research advisor to undergraduates: Gustavo Abagge Luzzi (AERE, 2023-), Natalia Almeida (EE, 2019), Hazel Ambort (MATE, 2019-2020), Marcella Anderson (ECpE, 2020-2021), Isaac C. Arp (AERE, 2023-), Jonak Bhagawati (AERE, 2024-), Arthur Borborema Nunes (AERE, 2023-), John Botsford (AERE, 2019-2020), William Burken (MECH, 2019-2022), Sushant Chiramana (AERE, 2024-), Faith Cornish (MECH, 2021), Ashton Corpuz (MECH, 2020), Maheeka Devarakonda (ECPE, 2024-), Andrés Batista Díaz (AERE, 2021-2022), Ellie Diersen (AERE, 2019-2023), Matt Dodge (MECH, 2020-2021), Sayak Dubey (MECH, 2023-), John Edgren (AERE, 2019-2023), Victoria Fleming (AERE, 2021-2023), Grace Gilsdorf (AERE, 2024-), Colton Glick (SE, 2020-2022), Grant Goebel (MECH, 2024-), Adam Goelitz (AERE, 2024-), Abigail Gries (AERE, 2017-2020), Declan Green (AERE, 2022-), Logan Gross (AERE, 2017-2019), Alex Harpenau (AERE, 2017-2018), Madison Harrington (AERE, 2017-2020), Nicholas Hendrickson (AERE, 2018-2020), Allison Howard (AERE, 2022-), Christopher Johannsen (AERE, 2017-2022), Stephanie Jou (AERE, 2019-2021), Mandy Kewitsch (AERE, 2017-2018), Kaitlin Kotvis (AERE, 2021-2022), Mukul S. Kulkarni (MECH, 2023-), Varad Vasant Kulkarni (AERE, 2021-2024), Adhyaksh Kumar (AERE, 2020-2022), John Levandowski (AERE, 2019-2020), Jaymee Logan (AERE, 2018-2019), Brenda A. Lora (MECH, 2023-), Dana A. Love (AERE, 2023-), Nayra T. Lujano (ECpE, 2021-2022), Gustavo Luzzi (AERE, 2023-), Luke Marzen (AERE, 2022-2024), Sara Mayne (MECH, 2020-2022), Samuel McClure (MECH, 2024-), Camryn Medendorp (AERE, 2019-2020), Evelyn Moyer (AERE, 2020-2023), Jack Newton (MECH, 2024-), Artur Nunes (AERE, 2023-), Divyansh Ojha (AERE, 2021-2022), Akwasi Quarcoo (AERE, 2024-), Nisha Raj

(SE, 2023-), Eric A. Rasmussen (AERE, 2023-2024), Jordan Reese (AERE, 2018-2019), Taylor Roquet (AERE, 2020-2023), Robert Santiago (AERE, 2021-2022), Sarthak Satpathy (AERE, 2024-), Mehmet Sefer (AERE, 2022-), Catherine Sener (AERE, 2017-2019), Antara Shah (AERE, 2022-2024), Karanvir Singh (AERE, 2023-), Aidan Sippel (MECH, 2024-), Sydney Turner (AERE, 2022-2024), Broderick Urbanz (MECH, 2024-), Alexander Vande Loo (AERE, 2018-2021), Swathy Vidyadharan (MECH, 2018-2019), Josh Wallin (ECpE, 2017-2019), Taylor Warneke (AERE, 2022-2023), Andrew Williams (AERE, 2023-)

- 2016-2017 Freshman honors advisor to: Jason Cheng (EE), Joseph Gurin (AERE)
- 2016-2018 B.S. research advisor (UC) to: Codi Burley (EECS)
- 2016 B.S. research advisor (UC) to: Christopher Crowell (EECS), Douglas Flick (EECS), McKenzie Kinzbach (AEEM)
- 2015-2016 B.S. research advisor, Jessica Glass, UC undergraduate in AEEM
- 2004 [At NASA] Mentor, with Ben Di Vito, of the Hypatheon Group summer interns. Responsible for co-advising a group of four undergraduates contributing to the Hypatheon database for deductive knowledge in coordination with the PVS theorem prover. Assessment Technology Branch, NASA Langley Research Center.

Graduate Students Funded and Advised at NASA: Long-term, Summer, and Internship

- 2014-2015 Mentor, co-advising (with Johann Schumann) Quoc-Sang Phan, Ph.D. student at Queen Mary University of London on *Unobtrusive On-board Software Health and Security Monitoring for Autonomous UAS* under Aeronautics Research Mission Directorate (ARMD) Seedling Fund Phase I Award, “Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS.”
- 2014-2017 Mentor, co-advising (with Johann Schumann) Patrick Moosbrugger, Ph.D. student at Technikum Wien, Vienna on *Unobtrusive On-board Software Health Monitoring for Autonomous UAS* under Aeronautics Research Mission Directorate (ARMD) Seedling Fund Phase I Award, “Intelligent Hardware-Enabled Sensor and Software Safety and Health Management for Autonomous UAS,” [2014]; Ph.D. thesis research [2015–2019]
- 2013-2015 Mentor, advising Marco Gario, Ph.D. student at Università degli Studi di Trento and Fondazione Bruno Kessler on *Formal Analysis for Functional Allocation of the Automated Airspace Concept Air Traffic Control Technologies* in coordination with NASA’s Airspace Systems Program
- 2013-2015 Mentor, advising Cristian Mattarei, Ph.D. student at ICT Doctoral School, University of Trento on *Formal Analysis for Functional Allocation of the Automated Airspace Concept Air Traffic Control Technologies* in coordination with NASA’s Airspace Systems Program
- 2013-2014 Mentor, co-advising (with Johann Schumann) Johannes Geist, Masters student at Vienna University of Technology on hardware implementation of a real-time, realizable, responsive, unobtrusive unit
- 2013 Mentor, advising Jordi Navarrette, Ph.D. student at CUNY on *Model Checking High-Level Architectures for Future Autonomous Systems* in coordination with NASA’s ARMD (Aeronautics Research Mission Directorate) PDM (Prognostics and Decision Making) program
- 2012-2013 Mentor, advising Jose Quaresma, Ph.D. Candidate at DTU Denmark on *Safety and Security Analysis of Communications Under the ADS-B Protocol* in coordination with NASA’s Airspace Systems Program
- 2012-2013 Mentor, co-advising (with Johann Schumann) Thomas Reinbacher, Ph.D. Candidate at Vienna University of Technology on *Combining Real-Time Runtime Verification with Software Health Management*
- 2011-2013 Mentor, advising Yang Zhao, Ph.D. Candidate at UC-Riverside, on *Model-based Design and Verification of the Automated Airspace Concept High-Level Architecture* and

Probabilistic Model Checking of a Coordination Protocol for an Automated Air Traffic Control System in coordination with NASA's Airspace Systems Program

High School Mentorships

2008-2010	Mentor, advising Alexandra Johnson, high school student (later CMU undergraduate majoring in computer science) under MAGIC (More Active Girls In Computing)
2002	Gloucester High School Senior Project advisor. Advised student on introductory computer engineering project including researching and building a custom computer

Thesis Committees (by graduation date)

2027	Ph.D. Thesis, Iowa State University, Aerospace Engineering: Erin Ashley
2026	Ph.D. Thesis, Iowa State University, Computer Science: Michael Qi Yin Chen
2024	Ph.D. Thesis, Iowa State University, Computer Engineering: Fan Zhang
2024	Ph.D. Thesis, Iowa State University, Aerospace Engineering: Uriah Tobey
2024	Ph.D. Thesis, Iowa State University, Computer Science: Ritam Ganguly
2024	Ph.D. Thesis, Iowa State University, Aerospace Engineering: Nathan Scheirer
2023	Ph.D. Thesis, Iowa State University, Computer Science: Gokul Hariharan
2022	Ph.D. Thesis, Iowa State University, Mathematics: Elizabeth Sprangel
2022	Ph.D. Thesis, Iowa State University, Computer Engineering: Om Rameshwar Gatla
2022	M.S. Thesis, Iowa State University, Aerospace Engineering: Gage Lochner
2021	Ph.D. Thesis, Iowa State University, Computer Science: Seyedehzahra Hosseini
2020	Ph.D. Thesis, Iowa State University, Aerospace Engineering: Robert Philpott
2020	M.S. Thesis, Iowa State University, Aerospace Engineering: Mohammad Manjanoor
2019	M.S. Thesis, Iowa State University, Computer Engineering, Megan Reiman Ryan
2017	M.S. Thesis, Iowa State University, Computer Science: Swarn Priya
2016	Ph.D. Thesis, Aalto University (Finland), School of Science: Jussi Lahtinen
2016	M.S. Thesis, University of Cincinnati, Aerospace Engineering: Owen Macmann
2015	M.S. Thesis, University of Cincinnati, Aerospace Engineering: Brandon Brown
2015	M.S. Thesis, University of Cincinnati, Aerospace Engineering: Siddharth Sridhar

Selected Professional Service

Grant proposal evaluation and administration for NASA

- Contracting Officer's Technical Representative (COTR): civil servant technical expert with specific authority granted by the Contracting Officer to fulfill responsibilities associated with managing research contracts for NASA

2010-2014 NRA Contract for subtopic B.6 Verification and Validation of Flight Critical Systems (VVFCS1)

2011-2012 SBIR 2011 Phase 1 & 2 proposals

- Proposal Reviewer/Panelist, NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES)

01/2025 *Solicitation:* NNH24ZTR001N-25NSTGRO_B4 (NSTGRO25): NASA Space Technology Graduate Research Opportunities – Fall 2025 (NSTGRO25)

01/2024 *Solicitation:* 80HQTR23NOA01-24NSTGRO_B4 [NSTGRO24]: NASA Space Technology Graduate Research Opportunities – Fall 2024 (NSTGRO24) [Primary]

01/2023 *Solicitation:* 80HQTR22NOA01-23NSTGRO_B4 [NSTGRO23]: NASA Space Technology Graduate Research Opportunities – Fall 2023 (NSTGRO23)

01/2022 *Solicitation:* 80HQTR21NOA01-22NSTGRO_B4 [NSTGRO22]: NASA Space Technology Graduate Research Opportunities - Fall 2022 (NSTGRO22)

- 03/2021 *Solicitation:* NNH20ZDA001N-CLDTCH [CLDTCH21]: C.26 Concepts for Ocean Worlds Life Detection Technology (COLDTech): Autonomy, Communications, and Radiation-Hard Devices [Primary]
- 02/2021 *Solicitation:* 80HQTR20NOA01-21NSTGRO_B4 [NSTGRO21]: NASA Space Technology Graduate Research Opportunities - Fall 2021 (NSTGRO21) [Primary]
- *subtopic:* TA03 - Space Power and Energy Storage
 - *subtopic:* TA04 - Robotics and Autonomous Systems
- 12/2013 *Solicitation:* NNH13ZEA001N-SSAT - B.2 System-Wide Safety Assurance Technologies (SSAT)
- 06/2012 *Solicitation:* NNH11ZEA001N-SSAT - B.2 System-Wide Safety Assurance Technologies (SSAT)
- Proposal Reviewer, NASA Small Business Innovation Research (SBIR), Phase I and Phase II proposals, <http://sbir.gsfc.nasa.gov/SBIR/SBIR.html>
- 03/2014 *subtopic:* S5.05 - Fault Management Technologies
- 01/2014 *subtopic:* A1.06 - Assurance of Flight-Critical Systems; Phase II
- 02/2013 *subtopic:* A1.06 - Assurance of Flight-Critical Systems
- 01/2013 *subtopic:* S5.05 - Fault Management Technologies
- 01/2013 *subtopic:* H10.01 - Ground Processing Optimization and Technology Infusion
- 10/2012 *subtopic:* A1.20 - Verification and Validation of Flight-Critical Systems; Phase II
- 10/2011 *subtopic:* A1.20 - Verification and Validation of Flight-Critical Systems
- Proposal Reviewer, NASA Minority-Serving Institution Faculty Engagement Competition (11/2011)

Research Advisory Boards, Proposal Reviews, and Panels

- Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) for the following funding opportunities: Alliance grants (Fall, 2024), Discovery grants (Fall, 2024)
- Proposal Reviewer, Canada Foundation for Innovation (CFI), John R. Evans Leaders Fund (7/2024)
- NFM (NASA Formal Methods) representative on FME's (Formal Methods Europe) *FM Conferences Synergy Board* (Spring 2024–**present**)
- NSF PFI Program Panel Reviewer, 2023.
- **Board Member**, Embry-Riddle Aeronautical University, Department of Electrical Engineering and Computer Science, Industry Advisory Board, 2023 – **present**.
- NSF POSE Program Panel Reviewer, 2023.
- NSF CPS Program Panel Reviewer, 2022.
- NSF EHR Racial Equity in STEM Education Program Panel Reviewer, 2022.
- Formal Methods Europe (FME, <https://www.fmeurope.org/>) Industry Committee (2022 – **present**)
- **Community Leader**, MLTL (Mission-time Linear Temporal Logic), StarExec: <https://www.starexec.org> (2022–**present**)
- Proposal Reviewer, Israel Science Foundation (ISF), (5/2021, 3/2022, 3/2023)
- **Board Member**, UK Research and Innovation (UKRI) Trustworthy Autonomous Systems Verifiability Node International Advisory Board [Web: <https://verifiability.org>; YouTube: TAS Verifiability Node; Twitter: [tas_verif](https://twitter.com/tas_verif)] (2020–**present**)
- NSF Cyber-Physical Systems (CPS) Panel Reviewer, Fall/Winter 2018.
- NSF Cyber-Physical Systems (CPS) Panel Reviewer, Fall/Winter 2017.
- NSF Cyber-Physical Systems (CPS) Panel Reviewer, Spring/Summer 2017.
- NSF Software and Hardware Foundations (SHF) Panel Reviewer, Fall/Winter 2015/2016.
- NSF Cyber-Physical Systems (CPS) Panel Reviewer, 2015.
- Founding Author (one of seven), Reproducible Science Blog: <http://reproduciblescience.blogspot.com>, 2015–2018.

Research Peer Review (in addition to service on Programme Committees, above)

- Reviewer, Logical Methods in Computer Science (LMCS) Journal, EPI Sciences (3/2022)
- Reviewer, AIAA Journal of Guidance, Control, and Dynamics (8/2021, 3/2022)
- Reviewer, IEEE Access (2021)
- AIAA Aerospace Cybersecurity Working Group (ACWG) (2020–present)
- Reviewer, Springer Journal of Autonomous Agents and Multi-Agent Systems (AGNT) (4/2020, 9/2020)
- Reviewer, IEEE Transactions on Aerospace and Electronic Systems (4/2020)
- Reviewer, Software Tools for Technology Transfer (STTT) Journal
 - special issue on the International Conference on Runtime Verification (RV 2019), 2020
 - special issue on the International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2020), 2022
- Reviewer, Formal Methods in System Design (FMSD) Journal (4/2019)
- Reviewer, Journal of Automated Reasoning (JAR) (4/2018)
- Book Reviewer, Valasek, John (ed), *Advances in Computational Intelligence and Autonomy for Aerospace Systems*, American Institute of Aeronautics and Astronautics, 2018.
- Reviewer, AIAA Science and Technology Forum and Exposition 2018 (SciTech 2018)
- Reviewer, Journal of Artificial Intelligence Research (JAIR) (6/2017, 6/2018, 8/2022)
- Reviewer, Journal of Automated Reasoning (JAR) (2/2017)
- Reviewer, Formal Aspects of Computing Journal, Special Issue on FASE'16 (1/2017, 6/2017)
- Reviewer, IEEE Transactions on Software Engineering (TSE) (9/2016, 2/2017, 10/2019, 6/2020)
- Reviewer, 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2016) (4/2016)
- Reviewer, 19th International Conference on Theory and Applications of Satisfiability Testing (SAT 2016) (03/2016)
- Reviewer, AIAA Science and Technology Forum and Exposition 2015 (SciTech 2015), 5-9 January 2015 in Kissimmee, Florida. (2014)
- Reviewer, Fifth International Symposium on Games, Automata, Logics and Formal Verification (GandALF 2014) (06/2014)
- Reviewer, IEEE Transactions on Intelligent Transportation Systems (6/2014)
- Reviewer, Communications of the ACM (CACM), the leading print and online publication for the computing and information technology fields (05/2014, 01/2015, 04/2015, 06/2015, 8/2023)
- Reviewer, Formal Aspects of Computing (FAOC) Journal, Springer (03/2014, 09/2014, 11/2024)
- Reviewer, Journal of Applied & Computational Mathematics (JACM), (12/2013)
- Reviewer, 17th International Conference on Fundamental Approaches to Software Engineering (FASE) (2014)
- Reviewer, 20th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS) (2014)
- Reviewer, Annals of Mathematics in Artificial Intelligence (AMAI) (11/2013)
- Reviewer, Annual Conference of the Prognostics and Health Management Society (PHM 2013) (2013)
- Reviewer, Journal of Software Testing, Verification and Reliability (2013)
- Reviewer, 28th IEEE/ACM International Conference on Automated Software Engineering (ASE) (2013)
- Reviewer, Journal of Logic and Algebraic Programming (7/2013)
- Reviewer, Innovations in Systems and Software Engineering (ISSE): A NASA Journal, Special Issue on Software Health Management (SI: SwHM) (4/2013)
- Reviewer, 9th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE) (2013)
- Reviewer, 25th International Conference on Computer Aided Verification (CAV) (2013)
- Reviewer, 24th International Conference on Automated Deduction (CADE-24) (2013)
- Head Book Reviewer (chair of peer-review committee, invited peer reviewers, coordinated all book chapter reviews, other organizational tasks): Valasek, John (ed), *Advanced Intelligent and Autonomous Aerospace Systems*, American Institute of Aeronautics and Astronautics, October, 2012.

- Reviewer, 19th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS) (2013)
- Reviewer, 14th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI) (2013)
- Reviewer, Science of Computer Programming Journal, Elsevier (9/2012, 11/2013, 10/2014, 11/2014, 6/2015, 8/2019, 2/2020, 6/2020)
- Reviewer, The 19th International SPIN Workshop on Model Checking of Software (SPIN) (2012)
- Reviewer, The 18th International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR-18) (2012)
- Reviewer, The 4th International Conference on Verified Software: Theories, Tools and Experiments (VSTTE) (2012)
- Reviewer, 13th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI) (2012)
- Reviewer, Automated Technology for Verification and Analysis (ATVA) (2011)
- Reviewer, Elsevier Computer Science Review Journal (11/2011)
- Reviewer, 23rd International Conference on Computer Aided Verification (CAV) (2011)
- Reviewer, ACM SIGSOFT 19th International Symposium on the Foundations of Software Engineering (FSE) (2011)
- Reviewer, SPIN 2010: 17th International SPIN Workshop on Model Checking of Software (2010)
- Reviewer, AIAA Journal of Aerospace Computing, Information, and Communication (JACIC) (2010)
- Reviewer, Annals of Mathematics in Artificial Intelligence (AMAI) for the topic area “Formal Methods in Aerospace” (2010)
- AIAA Intelligent Systems Book: chair of peer-review committee, invited peer reviewers, coordinated all book chapter reviews, other organizational tasks
- Reviewer, Intelligent Systems Track, 48th AIAA Aerospace Sciences Meeting (ASM) (2010)
- Reviewer, Formal Methods in Computer Aided Design (FMCAD) (2009)
- Reviewer, AIAA Journal of Aerospace Computing, Information, and Communication (JACIC) (2009)
- Reviewer, ACM Transactions on Software Engineering and Methodology (TOSEM) Journal (2009, 3/2013, 8/2013)
- **Founding Member of the Steering Committee**, the NASA Formal Methods Symposium (NFM) (2008)
- Reviewer, ISoLA Workshop On Leveraging Applications of Formal Methods, Verification and Validation: Special Workshop Theme: Formal Methods in Avionics, Space and Transport (10/2007)

Mentor Programs, STEM Workshop Leadership, Career Fairs, and Support for Underrepresented Groups

- AnitaB.org Researchers Technical Equity Experience Study participant (2024)
- Jewels Academy “Aerospace July” lab tour, activity, and visit to ISU (15 middle school “Young Emerging Scientists”) (7/13/2024)
- Panelist, AIAA and Sigma Gamma Tau Aerospace Engineering Honor Society’s Faculty Panel, ISU (2/26/2024)
- Mentor, ETAPS Mentoring Workshop (EMW) 2023: <https://etaps.org/2023/sat-events/mentoring-workshop/> (4/23/2023)
- Mentor, CAV-related Mentoring Workshop at FLoC 2022: <http://i-cav.org/2021/mentoring/> (8/5/2022)
- SWE Professor Presentation Special Event, ISU, Ames, Iowa (3/30/2022)
- Panelist, Academic Women in STEM, joint SWE/WISE Confidence Workshop, Ames, Iowa (3/9/2022)
- Mentor, quoted in monthly advice column and on the SWE website (<http://wia.swe.org/mentoring-blog/category/all>), *SWEet WIA Wisdom for January 2022* (1/2022)
- Aerospace Engineering ENGR 101 “Lunch with Faculty,” hosted six multi-student mentoring sessions (Fall, 2021)
- Panelist and Mentor, including “Paths to Academia” Panel, Rising Stars in Aerospace 2021, MIT, <https://www.rising-stars-aerospace-2021.com/> (5/26–28/2021)

- Panelist, SWE Silicon Valley Virtual Career Day for high school and undergraduate students (3/27/2021)
- Panelist, NSF CAREER Awardee Panel for Assistant Professors on “How to Develop a Successful NSF CAREER Proposal” at Iowa State University (3/17/2021)
- ENGR 101 “Faculty Panel” Video, answering questions and imparting advice for incoming freshmen, Fall 2020
- **Board Member**, the Jewels Academy, an Iowa non-profit offering STEM and self-enrichment programs for underrepresented girls in 4th–12th grades (<http://jewelsacademy.com>) (2020–**present**)
- 2024-09-19 “Keeping the Brilliance in Jewels” Fundraiser event (including award presenter)
- 2021-07-15 Judge, App-Building Camp for grades 4-9
- 2021-06-26 “Keeping the Brilliance in Jewels” Fundraiser event (including award presenter)
- Participant, NSF ADVANCE Research Study on Gender Equity for STEM Women in the Covid-19 Working Environment (7–9/2020)
- AIAA WoAA (Women of Aeronautics and Astronautics) Committee (8/2020–**present**)
- Women in STEM Research Study participant (8/2019); also Research on Women and Leadership study for an ISU student capstone project (8/2019)
- Aerospace Engineering ENGR 101 “Lunch with Faculty,” hosted four multi-student mentoring sessions (Fall, 2019)
- Faculty Mentor to Assistant Professor Bella Kim (8/2018–8/2021)
- STEM Women surveys, University of Akron (IRB protocol: 20170502), 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024 (URL: <https://journals.sagepub.com/doi/10.1177/00110000231201881?icid=int.sj-full-text.similar-articles.3>). UNESCO/SWE 2024 Gender Scan.
- Des Moines Investing In My Future’s (IIMF) Bridging the Gap to College Day, STEM Careers presentation to middle school children and their parents, Grand View University (10/28/2017)
- Geek Girl Interview project helping to support women in STEM (8/10/2017)
- Mentor, ISU’s Electrical, Computer, and Software Engineers as Leaders (ECSEL) program for undergraduate woman students, funded by an NSF SSTEM grant; <https://ecsel.ece.iastate.edu/students/ecsel-scholars/> (2017–**present**)
- Presenter, Galaxy Girls 3-2-1 Blast Off, Girl Scout Day Camp, Izaak Walton League Park, two presentations to 60 7–10 year old girls (6/28/2017)
- Featured Presentation, ISU Digital Women Code Camp (4/8/2017, 4/6/2019, 3/26/2022)
- Faculty Advisor, ISU Women in Aviation International Chapter (<https://www.wai.org/>), (2/2017–**present**)
- Featured faculty member, Professor Poster Project, Sigma Gamma Tau (SGT) National Honor Society in Aerospace Engineering, ISU (Fall, 2016)
- Panelist, Graduate School Panel, Tri-State Women in Computing Conference: An ACM-W Celebration (TRIWIC); a regional ACM-W Celebration of Women in Computing. TRIWIC brings together female technical women from Kentucky, Ohio, Indiana, and beyond (2-19-2016)
- UC Representative and Speaker at Women in STEM events including: WomEngineer Welcome [8/25/2015], Women In Engineering High School Tour Day [10/28/2015], Cincinnati Woman’s Club Scholarship Program [11/20/2015]
- Faculty Fellow and Mentor, Data Science for Social Good Summer Fellowship, University of Chicago, Chicago, Illinois. (summer, 2015)
- Faculty Advisor, UC Student Chapter of AIAA, 2015–2016
- Faculty Advisor, UC CubeCats (CubeSat Club), 2015–2016
- Faculty Advisor, class of 2019, Department of Aerospace Engineering and Engineering Mechanics, UC, 2015–2016
- Undergraduate Admissions Service, Department of Aerospace Engineering and Engineering Mechanics, UC. Responsible for calling, emailing, and giving tours to admitted female undergraduate students. 2015 – 2016
- Mentor, NASA GIRLS program 2014. NASA GIRLS is a summer mentoring program aimed at inspiring middle school girls interested in STEM that includes instructional material from NASA. (summer, 2014)

- Volunteer Mentor, Data Science for Social Good Summer Fellowship, University of Chicago, Chicago, Illinois. (summer, 2014)
- Invited speaker, CSters, the Rice University club for women in computer science. Topics included career path, options for interdisciplinary work, retention rates for women in the field, advertising one's research, choosing a graduate advisor, interviewing concerns, and the two-body problem (4/28/2014)
- Workshop Organizer for series of workshops titled "Logic is Magical!" aimed at exposing high school girls to mathematical logic and reasoning about knowledge; also professional panelist on panel for parents of high school girls to learn about opportunities for their daughters, challenges they may face, and ways of aiding their daughters in the pursuit of math and science careers. Society for Women Engineers (SWE) "WOW! That's Engineering!" San Jose State University (02/01/2014)
- Mentor, NASA GIRLS program 2013. NASA GIRLS is a summer mentoring program aimed at inspiring middle school girls interested in STEM that includes instructional material from NASA. (summer, 2013)
- Mentor, The Huffington Post's Girls in STEM mentorship program (2013)
- NASA Technical Recruiter for Undergraduate and Graduate Students: 2013 Winter Engineering Career Fair at Santa Clara University (1/16/2013), San Jose State University Expo '13 (2/26/2013)
- Mentor for WitsOn (Women in Technology Sharing Online), a Harvey Mudd College and Piazza pilot mentoring project to connect undergraduates pursuing STEM degrees with female mentors from industry and academia who can speak from personal experience about issues of particular concern to young women (10-11/2012)
- NASA speaker at Mountain View High School's College Awareness Day Career Fair (10/12/11)
- NASA speaker at Peninsula Girl Scout Day Camp, Huddart Park, presented to 150 teens aged 12-18 years (7/21/2010)
- NASA speaker for EPATT (East Palo Alto Tennis and Tutoring) Lunchtime Speaker Series event, 3rd-6th grade groups (6/29/10)
- NASA Event Staff (Careers and STEM Booth), 35th Annual Sunnyvale Art and Wine Festival (6/6/2009), 36th Annual (6/6/2010)
- Girls Achieving in Non-traditional Subjects (GAINS) "Lunch with a NASA Scientist" (2/17/09)
- NASA Combined Federal Campaign (CFC) key worker 2008
- NASA Event Staff, Airship Ventures Dedication/Moffett 75th Diamond Jubilee Ceremony, Moffett Field, CA (11/21/2008)
- NASA representative, Smithsonian Folklife Festival, Washington, DC (7/3/2008)
- MAGIC (More Active Girls In Computing) core team member/mentor (10/2007-8/2010)
- NASA Exhibition Trailer staff at Air Power Over Hampton Roads, Langley AFB (4/28/2007)
- NASA representative at the Virginia Air and Space Center SpaceQuest Opening (4/21/2007)
- CHROME Club Speaker at Jones Middle School (2/12/2007), Eaton Middle School (6/07/2007)
- Workshop Leader and Speaker: "Just Plane Wings," Girl Scout Day (a day for Brownie Girl Scouts to learn about science), Rice University (11/12/2005)
- National Space Day presenter, McIntosh Elementary (5/1/2003)
- NASA "Careers in Aerospace" Speaker: Dozier Middle School (4/11/2002), Hines Middle School (3/13/03), Jones Magnet School (twice: 4/8/2004), Reservoir Middle School (3/13/2007)

Science Fairs, Scholarships, Other Award Judging and Project Mentoring

- SWE-SCV (Silicon Valley) Scholarship Judge, high school division, <https://www.swescv.com/scholarships> (4/2022)
- Iowa Space Grant Merit Scholarship Evaluator (7/2021)
- AIAA Region V Associate Fellow Award Panel Reviewer (7/2018)
- Iowa Space Grant Consortium application Reviewer (8/2017)
- Co-organizer, AIAA Intelligent Systems Award, Santa Clara Valley Science and Engineering Fair Synopsys Championship (2015, 2016, 2017)
- "What is an Intelligent System" Video Contest Judge, AIAA ISTC (10/2012)
- Head Judge and award founder, AIAA Intelligent Systems Award, Santa Clara Valley Science and Engineering Fair Synopsys Championship (3/9/11, 4/3/11, 3/7/12, 3/13/13, 3/12/14)

- Santa Clara Valley Science and Engineering Fair 2011 Mentor
- AIAA Intelligent Systems Award Selection Panel: “The Selection Panel will include 4 additional members to be appointed by the ISTC Chair. These appointees shall be nationally recognized experts in areas relevant to ISTC scope, and should be members of AIAA in good standing, but need not be current members of ISTC.” (2010)
- National Center for Women & Information Technology (NCWIT) Award for Aspirations in Computing Judge (April–May/2010, Oct–Nov/2010, Nov/2011)
- Intel International Science and Engineering Fair 2009 Judge, Reno, Nevada (5/12-13/2009)
- 16th Annual NASA Ames Student Space Settlement Design Contest Judge (4/23/09), 17th Annual (4/20/10)
- AIAA/NASA Ames Research Center Galileo High School Scholarship Evaluator (April-May/2009, March-May/2010)
- Santa Clara Valley Science and Engineering Fair Synopsys Championship Judge (3/18/09, 3/17/10)
- Virginia Junior Academy of Science (VJAS) Computer Science Judge (5/21/2008)
- Gildersleeve Science Fair Judge (12/13/2007)
- eCYBERMISSION Judge (3/2007)
- York County Regional Science Fair Judge at Bruton High School (1/31/2007), Grafton High (1/31/2008)
- River Oaks Baptist School of Houston Science Fair Judge (11/17/2005)
- Tidewater Regional Science Fair Judge (3/20/2004, 3/08/2008)
- Menchville High School Science Fair Judge (12/09/2003, 12/11/2006, 12/06/2007)
- Newport News All City Science Fair Computer Science Judge (1/25/2003, 1/31/2004, 1/20/2007, 1/12/2008)
- Dozier Middle School Science Fair Engineering Judge (12/5/2002)
- New Horizons Governor’s School for Science and Technology presentation observer (5/2/2002) and judge (5/2/2003, 4/29/2004)
- Virginia State Science and Engineering Fair Computer Science Judge, Randolph-Macon College (4/13/2002, 4/5/2003), George Mason University (CS Chair: 4/12/2008)

University Service

- AERE Women’s Lunch Series (monthly lunchtime mentoring conversations with female undergraduate students) (Spring 2023–**present**)
- ISU Parks Library research/instruction feedback focus group (2/15/2023)
- ISU College of Engineering Proposal Reviewer: Exploratory Research Project (ERP) (2022)
- ISU College of Engineering Proposal Reviewer: Research Laboratory Equipment and Tools (2022)
- Aerospace Engineering Muilenburg Chair Search Committee (8/2019–2020)
- Aerospace Engineering Software and Computing Program Committee (8/2019–**present**)
- Aerospace Engineering Qualifying Exam Committee (8/2019–2020)
- Department Chair Search Committee, Aerospace Engineering Department, Iowa State University (2017/2018, 2019/2020, 2023/2024)
- Curriculum Committee, Department of Aerospace Engineering, ISU (2017–2023)
- Faculty Search Committee, Department of Aerospace Engineering, ISU (2016–2017, 2017–2018)
- UC Representative, Ohio Center of Excellence for Advanced Communications, Positioning, Navigation, and Timing (C2PNT) (2015–2016)
- Faculty Hiring Committee, Department of Aerospace Engineering and Engineering Mechanics, UC (2015–2016)
- Graduate Student Visit Weekend Planning Committee, Department of Electrical Engineering and Computing Systems, UC (2015–2016)
- Graduate Program Committee, Department of Aerospace Engineering and Engineering Mechanics, UC (2015–2016)
- Strategic Planning Committee, Department of Aerospace Engineering and Engineering Mechanics, UC (2015–2016)

Memberships

- Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA). Software Technical Committee (SWTC) 2021–**present**. Aerospace Cybersecurity Working Group (ACWG) 2020–**present**. Intelligent Systems Technical Committee (ISTC) 2008–2018: Chair, Publications Subcommittee 2010–2015; Chair, Professional Development, Education, and Outreach subcommittee 2009–2018.
- Senior Member of IEEE
- Senior Member of Association for Computing Machinery (ACM)
- Senior Member of Society for Women Engineers (SWE)
- Women in Aviation International (WAI)
- Women In Aerospace (WIA)
- Formal Methods Europe (FME) <https://www.fmeurope.org/>
- Association for the Advancement of Artificial Intelligence (AAAI)
- Phi Beta Kappa (PBK)
- Sisters

References

Available upon request.