Department of Electrical and Computer Engineering
Air Force Institute of Technology
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Research Assistant Professor of Computer Science
Department of Electrical and Computer Engineering
Air Force Institute of Technology, Wright-Patterson AFB, Ohio **2022-Present**

- Plans and executes a program of research in computer science. Works directly with Air Force and Department of Defense (DoD) organizations to meet research needs. Collaborates and works well with colleagues to accomplish individual and organizational research goals. Regularly publishes research results in archival journals and presents at technical conferences. Plans, directs, coordinates, and evaluates research programs of master's and doctoral students.
- Provides authoritative consultation in one or more areas of computer science to Air Force and DoD organizations.
- Mentors and manages the educational progress of MS and PhD students. Provides annual written feedback and reports on MS and PhD students as prescribed by Air Force and AFIT Operating Instructions.

Assistant Professor of Computer Science
Department of Electrical and Computer Engineering
Air Force Institute of Technology, Wright-Patterson AFB, Ohio **2015-2022**

- Teaches graduate-level courses in computer science that form parts of accredited masters and doctoral degree programs, as well as parts of professional continuing education programs.
- Develops courses and sequences of courses in computer science for degree programs and continuing education that meet the Air Force's dynamic educational needs.
- Plans and executes a program of research in computer science. Works directly with Air Force and Department of Defense (DoD) organizations to meet research needs. Collaborates and works well with colleagues to accomplish individual and organizational research goals. Regularly publishes research results in archival journals and presents at technical conferences. Plans, directs, coordinates, and evaluates research programs of master's and doctoral students.
- Provides authoritative consultation in one or more areas of computer science to Air Force and DoD organizations.
- Serves on department and school administrative and academic committees.
- Mentors and manages the educational progress of MS and PhD students. Provides annual written feedback and reports on MS and PhD students as prescribed by Air Force and AFIT Operating Instructions.

Founder
Computational Optimization Services, LLC
Dayton, Ohio **2011-2015**

- Custom websites for small businesses and non-profit organizations (CSS, PHP, Smarty, JQuery, MySQL, PayPal, WordPress, etc.)
- Computational optimization and technical writing
- Aspiring young adult suspense/mystery novelist
- Stay-at-home dad and part-time elder care provider

Assistant to the Chair
Department of Computer Science and Engineering
Wright State University, Dayton, Ohio **2008-2011**

Department has approximately 450 undergraduate students, 70 Masters students, and 40 PhD students; offers three degree programs at bachelors level with numerous concentrations, two at masters level, a PhD program, two minors, and four certificate programs; and has significant research component (approximately $875K/year external funding expenditures).

- Curriculum. Coordinated conversion from quarter-based to semester-based curricula. Advised students on academic program requirements, policies, and procedures, as well as career paths. Advised faculty on undergraduate curriculum. Led all assessment and accreditation activities, including preparation of ABET self-study documents.
- Operations. Developed course offering schedules and teaching assignments for inventory of approximately 200 courses taught by 26 full-time faculty, 15-20 part-time faculty, and 10 graduate teaching assistants. Recruited part-time faculty. Certified that students had completed degree requirements prior to graduation.
- Administration. Advised Chair on all issues including personnel, financial, and programmatic decisions. Represented Chair in essentially all areas of department operations when necessary. Oversaw all administrative support for faculty and students (varying degrees of supervisory responsibility for administrative assistants, receptionists, and system administrator). Formulated administrative policies and procedures, and authorized action on issues where precedent and policy were not clear.

Assistant Professor of Computer Science
Department of Computer Science and Software Engineering
Rose-Hulman Institute of Technology, Terre Haute, Indiana **2002-2008**

Assistant/Associate Professor of Computer Science
Department of Computer Science
United States Air Force Academy, Colorado **1999-2002**

Chief, Center for Plasma Theory and Computation (1998-1999) and
Leader, Computational Plasma Physics Group (1996-1998)
Air Force Research Laboratory, Kirtland AFB, New Mexico **1996-1999**

- Led 15 scientist team with 10 Ph.D.'s and a $1.1M/year budget developing and applying parallel computational plasma physics software for design of high-power microwave (HPM) devices
- Managed $3M/year HPCMO Computational EM and Acoustics effort
- Managed $2.7M High Energy Theory and Experiment contract
- Used evolutionary algorithms to optimize HPM source design
- Designed and developed enhancements for parallel software tools for particle-in-cell (PIC), computational magnetohydrodynamics (MHD), and computational electromagnetics (CEM) simulations
- Conducted computational PIC and MHD simulations of pulsed power devices and HPM sources using various scientific workstations and high performance scalable architectures

Artificial Intelligence Project Officer
AI Program Management Office, Wright-Patterson AFB, Ohio **1988-1991**

- Promoted insertion of AI technologies into Air Force logistics processes
- Taught 40-hour short courses on expert systems and M.1 programming to Air Force Logistics Command personnel
- Designed and implemented an automated text-retrieval system prototype that has evolved into the Air Force Acquisition Management system

CONCURRENT POSITIONS

Adjunct Faculty Member

Wright State University, Dayton, Ohio	2011
College of Santa Fe, Albuquerque, New Mexico	1998-1999
Chapman University, Albuquerque, New Mexico	1997-1998
Air Force Institute of Technology, Wright Patterson AFB, Ohio	1997-2003

Visiting Professor
Information Institute, Air Force Research Laboratory
Rome, New York 2004

- Completed high-level design for an "Evolutionary Algorithm" core for use in Field Programmable Gate Arrays
- Mentored undergraduate summer hire in the implementation of farming model and island model parallel implementations of an evolutionary algorithm to solve the problem of parameter fitting for a set of nonlinear differential equations modeling an antigen-antibody binding process of interest in DARPA's bio-computation program
- Contributed to the "Polymorphous Computing Architectures" section of a joint DoD/NASA proposal for Congressional funding in advanced computing architectures research

Individual Mobilization Augmentee ("Category B" Air Force Reservist)
Air Force Office of Scientific Research
Arlington, Virginia 2002-2007

- Allocated funds for the United States Air Force's basic research program in High Performance Computing
- Prioritized the United States Air Force's requirements for Department of Defense High Performance Computing Program resources

EDUCATION

Ph.D. in Computer Engineering **1996**

Air Force Institute of Technology, Wright-Patterson AFB, Ohio
Dissertation: *Analysis of Linkage-Friendly Genetic Algorithms*
Minor: Biochemistry (Wright State University)
Chairperson: Gary B. Lamont, Ph.D.

M.S.C.E. (Master of Science in Computer Engineering) **1992**

Air Force Institute of Technology, Wright-Patterson AFB, Ohio
Thesis: *Generalization and Parallelization of Messy Genetic Algorithms and Communication in Parallel Genetic Algorithms*
Advisor: Gary B. Lamont, Ph.D.

B.S. in Computer and Systems Engineering **1987**

Rensselaer Polytechnic Institute, Troy, New York

ORGANIZATION OF CURRICULUM VITAE

TEACHING

Summary

My first academic appointment was a part time opportunity (five courses per year) at the Albuquerque campus of Chapman University.[1] I was assigned to the Air Force Research Laboratory as a researcher and project manager at the time. When Chapman decided to restructure its system of satellite campuses, I helped arrange the details of a matriculation agreement with the College of Santa Fe.

Next, at the United States Air Force Academy (USAFA), I taught the standard load of three sections (and either two or three preparations) per semester. My teaching experiences there culminated in my role as the Course Director (CD) for the *Introduction to Computing* course during my third year.

In 2002, rather than accept an Air Force assignment that would have taken me out of both research and teaching, I left behind a successful 15-year military career in favor of my academic career. I chose a position at the Rose-Hulman Institute of Technology because of the outstanding students, the unambiguous focus on undergraduate education, and the strong sense of community.

In 2008, I returned to the Dayton, OH area and became the Assistant to the Chair in the Department of Computer Science and Engineering at Wright State University. My responsibilities in this position were administrative, but nonetheless I taught Numerical Methods for Computational Science in the Winter 2011 term. The course used an asynchronous web-based format.

Following a period of full-time parenting and self-employment, I returned to academia in 2015 as a member of the faculty of the Air Force Institute of Technology. I now have the pleasure of teaching and mentoring some of the most dedicated and capable students to be found anywhere.

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[1] My teaching experience began earlier. As a rising 8th grader, I gave a chemistry lecture and demonstration to several hundred high school students attending a summer program at the University of New Mexico. I tutored in mathematics and computer science during high school and as an undergraduate. My first Air Force assignment gave me the opportunity to teach short courses in the development of expert systems. In graduate school I gave guest lectures in algorithms and parallel computing.

Over the time described above, I have taught the following courses:

- Artificial Intelligence
- Compiler Construction
- Computer Architecture I and II
- Computer Programming I and II
- Computer Systems Analysis and Design I and II
- Operating Systems
- Computer Security
- Data Structures
- Design and Analysis of Algorithms
- Discrete Mathematics
- Evolutionary Algorithms
- Fund. of Software Development I
- Great Principles in Computing
- Introduction to Computers and Data Processing
- Introduction to Computing
- Numerical Methods for Computational Science
- Organizational Information Systems
- Parallel and Distributed Processing Algorithms
- Quantum Computing
- Theory of Computation

I have also served as the advisor for four undergraduate and numerous graduate independent studies, including:

- Cryptanalysis for Post-Quantum Cryptography
- Cybersecurity Research Education Fundamentals
- HW Verification for Quantum Computers I & II
- Parallel Evolutionary Algorithms
- Quantum Mechanics for Cryptographic Applications

Finally, I have served as the advisor for 8 senior theses, the chair of 13 master's thesis committees, the co-chair of 2 others, a member of 12 others (4 RHIT and 12 AFIT), as well as the chair of 2 Ph.D. committees, and a member of 7 others.

Formal Courses[2]

AFIT CSCE[3] 031 Discrete Mathematics	Required refresher course for master's students	Fall Refresher 2017: 1 section Fall Refresher 2018: 1 section Fall Refresher 2019: 1 section Fall Refresher 2020: 1 section Fall Refresher 2021: 1 section Fall Refresher 2022: 1 section
AFIT CSCE 092 Computer Systems Architecture	Required refresher course for master's students	Fall Refresher 2016: 1 section
AFIT CSCE 492 Computer Systems Architecture	Program pre-requisite for Computer Science, Computer Engineering, Cyber Operations, and Electrical Engineering	Summer 2016: 1 section Summer 2017: 1 section Summer 2018: 1 section
AFIT CSCE 531 Discrete Mathematics	Required for Computer Science and for Software Engineering; contributes to breadth requirement for Digital Engineering track of Electrical Engineering, math requirement or theory requirement for Computer Engineering	Fall 2016: 1 section Fall 2017: 1 section Fall 2018: 1 section Fall 2019: 1 section Fall 2020: 1 section Fall 2021: 1 section Fall 2022: 1 section (co-taught)
AFIT CSCE 532 Theory of Computation	Required for Software Engineering; contributes to breadth requirement for Digital Engineering, math requirement or theory requirement for Computer Engineering, math/theory requirement for Computer Science	Winter 2016: 1 section Winter 2017: 1 section Winter 2018: 1 section Winter 2019: 1 section Winter 2020: 1 section Winter 2021: 1 section Winter 2022: 1 section Winter 2023: 1 section (8 of 40 hours) Winter 2025: 1 section
AFIT CSCE 656 Parallel and Distributed Processing Algorithms	Required for High Performance Computing track of Computer Science; elective for multiple majors	Spring 2018: 1 section Spring 2020: 1 section Spring 2021: 1 section Spring 2022: 1 section
AFIT CSCE 699	Optional for any major	Summer 2016: 2 students Spring 2017: 1 student Summer 2018: 1 student Winter 2019: 2 students Summer 2019: 2 students Spring 2020: 1 student Sprint 2025: 1 student
AFIT CSCE 886 Evolutionary Algorithms	Elective for multiple majors; satisfies final course requirement of Artificial Intelligence tracks of Computer Engineering and Computer Science	Fall 2017: 1 student (final project) Summer 2018: 1 student
AFIT CSCE 899	Optional for PhD students	Summer 2018: 1 student
AFIT EENG 899	Optional for PhD students	Winter 2019: 1 student Spring 2019: 1 student
AFIT PHYS 757	Optional for any major	Summer 2018: 1 section (10 of 40 hours) Summer 2019: 1 section (4+ of 40 hours) Summer 2020: 1 section (6 of 40 hours) Summer 2021: 1 section (6 of 40 hours) Summer 2022: 1 section (6 of 40 hours) Summer 2023: 1 section (6 of 40 hours) Summer 2024: 1 section (6 of 40 hours)

[2] Sorted by institution (reverse chronological) then course number (increasing)
[3] CSCE = Computer Science and Computer Engineering

WSU CS/MTH 317/517	Elective for multiple majors, required for Computational Science concentration of Bachelor of Science in Computer Science	Winter 2011: 1 section

RHIT CSSE[4] 120 Fundamentals of Software Development I	Required for Computer Engineering, Computer Science, Electrical Engineering, Mathematics, and Software Engineering majors	Spring 2002-03: 2 sections Winter 2003-04: 2 sections Winter 2006-07: 1 section
RHIT CSSE 232 Computer Architecture I	Required for Computer Engineering, Computer Science, and Software Engineering majors	Fall 2002-03: 1 section Winter 2002-03: 2 sections Fall 2003-04: 2 sections Fall 2005-06: 1 section Winter 2005-06: 1 section Fall 2006-07: 1 section Winter 2006-07: 1 section Fall 2007-08: 2 sections
RHIT CSSE 332 Operating Systems	Required for Computer Engineering, Computer Science, and Software Engineering majors	Winter 2004-05: 2 sections Spring 2005-06: 1 section Spring 2006-07: 1 section Summer 2006-07: 1 student
RHIT CSSE 442 Computer Security	Elective	Spring 2004-05: 2 sections Spring 2005-06: 1 section Spring 2006-07: 1 section Winter 2007-08: 1 section
RHIT CSSE 473 RHIT MA[5] 473 Design and Analysis of Algorithms	Fills theory elective for Computer Science majors and Computer Science elective for Mathematics majors	Fall 2006-07: 1 section Spring 2006-07: 2 students
RHIT CSSE 474 RHIT MA 474 Theory of Computation	Fills theory elective for Computer Science majors and Computer Science elective for Mathematics majors	Spring 2003-04: 2 sections Winter 2007-08: 1 section
RHIT CSSE 490 Great Principles in Computing	Optional for any major	Winter 2007-08: 1 section
RHIT CSSE 491 Directed Independent Studies	Optional for any major	Spring 2002-03: 1 student Spring 2004-05: 1 student Summer 2004-05: 1 student Spring 2006-07: 1 student
RHIT CSSE 495/496/497 Senior Thesis I/II/III	Optional for Computer Science majors	Fall/Winter 2002-03: 1 student[6] Fall/Winter 2003-04: 1 student[7] 2004-05: 2 students[8] 2005-06: 2 students[9] 2006-07: 1 student 2007-08: 1 student
RHIT ECE[10] 332 Computer Architecture II	Required for Computer Science and Computer Engineering majors	Fall 2004-05: 1 section

[4] CSSE = Computer Science and Software Engineering
[5] MA = Mathematics
[6] The thesis student (Mike Simon) published a paper based on his thesis research in the Undergraduate Student Workshop of the 2003 Genetic and Evolutionary Computation Conference.
[7] The thesis student (Ryan Poplin) and I submitted a journal article based on his thesis research.
[8] One of the thesis students (Eric Borzello) and I coauthored a refereed conference paper based on his thesis research in the Proceedings of the 2005 Congress of Evolutionary Computation.
[9] One of the thesis students (Mike McClurg) published a paper based on his thesis research in the Undergraduate Student Workshop of the 2006 Genetic and Evolutionary Computation Conference.
[10] ECE = Electrical and Computer Engineering

USAFA Computer Science 471 Artificial Intelligence		Optional for Computer Science and Computer Engineering majors.	Fall 1999 and 2000: Instructor[11] and Course Director (CD)[12].
			Spring 2002: Curriculum Committee Representative (CCR)[13]
USAFA Computer Science 110	Introduction to Computer Science	Required for all cadets (approximately 30 sections per semester).	Fall 1999: Instructor of 1 section
			Spring 2000: Instructor of 2 sections
			Fall 2000 and Spring 2001: CCR, as well as instructor for 1 experimental section using Lego Mindstorms to teach programming concepts.
			Fall 2001: CD (17 instructors) and instructor of 1 section
	Introduction to Computing		Spring 2002: CD (18 instructors) and instructor of 1 section
USAFA Computer Science 380 Algorithms and Data Structures		Required for Computer Science and Computer Engineering majors.	Spring 2000: CCR and 1 of 3 instructors.
			Spring 2001: CD (2 instructors) and instructor of 1 section.
USAFA Engineering 402 Preparation for Fundamentals of Engineering Exam		Encouraged for engineering majors.	Spring 2000, 2001, and 2002: Instructor for digital computing topics.
USAFA Computer Science 499 Independent Study		Optional for Computer Science majors.	Fall 2000: Mentor for 2 cadets investigating automatic domain decomposition using evolutionary algorithms.
USAFA Computer Engineering 465 Computer Systems Analysis and Design I		Required for Computer Engineering majors.	Fall 2000 (initial offering): CD and instructor.
			Fall 2001: CCR.
USAFA Computer Engineering 466 Computer Systems Analysis and Design II		Required for Computer Engineering majors.	Spring 2001(initial offering): CD and instructor.
			Spring 2002: CCR.

[11] USAFA instructor responsibilities include: preparing and delivering lectures; leading discussions; developing classroom and laboratory activities; assisting in development of handouts, homework assignments, programming exercises, exams, and other graded work; grade homework, programming exercises, exams, and other graded work.
[12] USAFA Course Directors (CDs) have overall responsibility for their courses, including design of syllabi; selection of textbooks; development of handouts, homework assignments, programming exercises, exams, and other graded work; development and maintenance of course website, and recommendation of course grades to the Dean.
[13] USAFA Curriculum Committee Representatives (CCR) within the Department of Computer Science provide final review and approval of all materials for their courses except textbooks, including syllabi, handouts, homework assignments, programming exercises, exams, and other graded work. Textbooks are reviewed and approved directly by the Curriculum Committee.

CSF[14] Computer Science 230 Computer Programming I	Required for Computer Science majors.	Term 3 1998: Full responsibility for all aspects of course.
CSF Computer Science 231 Computer Programming II	Required for Computer Science majors.	Term 4 1998: Full responsibility for all aspects of course.
CSF Computer Science 350 Data Structures	Required for Computer Science majors.	Term 4 1998: Full responsibility for all aspects of course.
CU Computer Science 200 Intro to Computers and Data Processing	Required for Computer Science majors.	Term 3 199715: Full responsibility for all aspects of course.
CU Computer Science 402 Compiler Construction	Required for Computer Science majors.	Term 3 1997: Full responsibility for all aspects of course.
CU Computer Science 350 Data Structures	Required for Computer Science majors.	Term 4 1997, Term 3 1998: Full responsibility for all aspects of course.
CU Computer Science 390 Artificial Intelligence	Optional for Computer Science majors.	Term 5 1997: Mentor for one student.
CU Computer Science 315 Organizational Information Systems	Required for Computer Information Systems majors.	Term 1 1998: Full responsibility for all aspects of course.

[14] Chapman University closed its Albuquerque Academic Center in 1998. Under an articulation agreement, the Albuquerque campus of the College of Santa Fe offered Chapman University courses to allow students to complete their degrees. Thus, the Term 3 1998 and Term 4 1998 were Chapman University courses, although they were taught at the College of Santa Fe, and I was officially an adjunct faculty member of the College of Santa Fe.
[15] The academic year for the Albuquerque Academic Center of Chapman University consisted of five terms of nine weeks. All of the courses that I taught had five contact hours per week.

Short Courses

"Quantum Computing" for AFRL Researchers 40-hour short course for researchers on fundamentals and technology forecast of quantum computing	2020
"Introduction to Artificial Intelligence and Expert Systems" 40-hour short course for engineers and logisticians on practical applications of artificial intelligence	1988-1991
"Introduction to M.1 Programming" 40-hour short course for the same audience in the use of a simple expert system shell	1988-1991

Guest Lectures

"An Introduction to Evolutionary Algorithms," Wright State University IEEE Seminar	2025
"Shor's Algorithm"	2023, 2024, 2025
"The Scientific Process," Air Force Institute of Technology	2019, 2023, 2024, 2025
"Evolutionary Algorithms," Rose-Hulman Institute of Technology	2004, 2006, 2007
"Introduction to Messy Genetic Algorithms," University of New Mexico	1997
"Introduction to Genetic Algorithms," Air Force Institute of Technology	1993-1996
Minimum Spanning Tree Algorithms (2 lessons), Air Force Institute of Technology	1994
Chemistry "Magic Show" and lecture for New Mexico High School summer program at University of New Mexico	1979

PROFESSIONAL DEVELOPMENT

Publications and Presentations

Invited

L. D. Merkle. Computational Complexity and Quantum Algorithms. Wright State University Department of Physics Seminar, 2023.

L. Merkle and M. Doyle. SIGCSE TS 2022 Report. ACM SIGCSE Bulletin, 54, 2 (April 2022), 3-5. DOI=https://doi.org/10.1145/3538522.3538525

M. Sherriff, L. Merkle, P. Cutter, A. Monge, J. Sheard. SIGCSE 2021 Technical Symposium Recap. SIGCSE Bulletin, 53, 3 (July 2021), 4–5. DOI=https://doi.org/10.1145/3483403.3483406

C. Laxer, L. D. Merkle, and F. Young. SIGCSE – Who We Are: A Brief History of Conference Registration and Demographics. ACM Inroads, Vol. 9, Issue 4, 2018, pp. 53-54.

DOI=https://doi.org/10.1145/3231746

L. D. Merkle. Selected Applications of Evolutionary Computation in Computational Science and Engineering. Indiana State University, Department of Life Sciences, 2006.

L. D. Merkle Electronic Voting. Invited panel member, Illiana Information Technology Association, October Meeting, 2004.

L. D. Merkle and J. W. Luginsland. Design Optimization for a Novel Class of High Power Microwave Sources. Proceedings of the 2003 IEEE Congress on Evolutionary Computation, presented in the special session on Evolutionary Design Optimization.

L. D. Merkle. Design Optimization for a Novel Class of High Power Microwave Sources: Incorporating Constraints in a Real-Valued Evolutionary Algorithm. Colloquium presented at various academic institutions, 2001-2002.

G. B. Lamont and L. D. Merkle. Towards Effective Evolutionary Algorithms for Polypeptide Structure Prediction. In G. Fogel and D. W. Corne, editors, Evolutionary Computation in Bioinformatics, 2003.

L. D. Merkle. Fielding expert systems: Really getting them used. Invited panel member, First World Congress on Expert Systems, 1991.

Journal Articles

S. Mochocki, M. Reith, L. D. Merkle, P. Singh, J. Zemmer, R. Gerra, G. Peterson, J. Jasper, B. Borghetti. A Personalized Learning Path Problem Based on the Cognitive Theory of Multimedia Learning. Expert Systems with Applications. In review.

S. A. Mochocki, M. G. Reith, B. J. Borghetti, G. L. Peterson, J. D. Jasper, L. D. Merkle. Computational complexity of personalized learning path problem variations and their impact on students: a systematic review of the literature. Journal of Computing in Higher Education. In review.

S. Mochocki, M. Reith, B. Borghetti, J. Jasper, G. Peterson, L. Merkle. Classification Categories for the Personalized Learning Path Problem. ACM Computing Surveys. In review.

M. Hirschfeld, L. Merkle, S. Graham, R. Hill. Evolutionary Generation of Diversity in Arm Executables for Cyber Resiliency Against Buffer Overflow Attacks. IEEE Transactions on Evolutionary Computation. In revision.

T. B. Dontigney, L. D. Merkle, R. G. Cobb, J. M. Columbi, and G. B. Lamont. Methodology for Comparison of Multi-Objective Optimization Algorithms for GEO Space Surveillance Network Architecture Design. Journal of Astronautical Science AMOS 2019 Special Topic. In review.

S. A. Mochoki, M. G. Reith, B. J. Borghetti, G. L. Peterson, J. D. Jasper, L. D. Merkle. Personalized Learning Path Problem Variations: Computational Complexity and AI Approaches. IEEE Transactions on Artificial Intelligence, vol. 6, no. 3, pp. 574-588, March 2025. DOI= https://doi.org/10.1109/TAI.2024.3483190

R. Raettig, J. D. Anderson, S. Nykl, L. D. Merkle. Accelerated Point Set Registration Method. The Journal of Defense Modeling and Simulation, 2024. DOI=https://doi.org/10.1177/15485129221150454

K. Graham, B. Heitmeyer, C. Rife, P. R. Patel, J. Anderson, S. Nykl, A. C. Lin, L. D. Merkle. Cyber Space Odyssey: A Competitive, Team-Oriented Serious Game in Computer Networking. IEEE Transactions on Learning Technologies, Vol. 13, No. 3, pp. 502-515. DOI=http://dx.doi.org/10.1109/TLT.2020.3008607

A. Chidanandan and L. D. Merkle. Use of Version Control Software in a Project-Based Introductory Computer Architecture Course. Computers in Education Journal, Vol. XVIIII [sic], 2009, No. 3, pp. 38-50. DOI=https://doi.org/10.1109/mse.2007.31

J. Holden, R. Layton, L. Merkle, and T. Hudson. Underwater Hacker Missile Wars: A Cryptography and Engineering Contest. Cryptologia, Vol. 30, 2006, pp. 69-77. DOI=https://doi.org/10.1080/01611190500401144

M. C. Carlisle and L. D. Merkle. Automated Load Balancing of a Missile Defense Simulation Using Domain Knowledge. Journal of Defense Modeling and Simulation, Vol. 1, Issue 1, April 2004, pp. 59-68. DOI=https://doi.org/10.1177/154851290400100105

B. S. Fagin and L. D. Merkle. Measuring the Effectiveness of Robots in Teaching Computer Science. ACM SIGCSE Bulletin, Vol. 35, No. 1, January 2003, pp. 307-311. DOI=https://doi.org/10.1145/792548.611994

B. S. Fagin and L. D. Merkle. Quantitative Analysis of the Effects of Robots on Computer Science Education. ACM Journal of Educational Resources in Computing, Vol. 2, No. 4, December 2002, pp. 1-18. DOI=https://doi.org/10.1145/949257.949259

A. T. Chamillard and L. D. Merkle. Evolution of an introductory computer science course: the long haul. J. Comput. Sci. Coll. 18, 1 (October 2002), 144-153, 2002.

A. T. Chamillard and L. D. Merkle. Management challenges in a large introductory computer science course. SIGCSE Bull. 34, 1 (February 2002), 252-256, 2002. DOI=https://doi.org/10.1145/563517.563440

DOI=http://dx.doi.org/10.1145/563517.563440

B. S. Fagin, L. D. Merkle, and T. W. Eggers. Teaching computer science with robotics using Ada/Mindstorms 2.0. Ada Lett. XXI, 4 (December 2001), 73-78, 2001. DOI=http://dx.doi.org/10.1145/507546.507592

Conferences (Refereed)

K. E. Wallace, M. K. Roberts, L. A. Hsia, L. D. Merkle, Physically Unclonable Characteristics for Trapped Ion Quantum Processors, National Aerospace & Electronics Conference (NAECON), Dayton, OH, August 2024.

C. Z. Chwa, L. A. Hsia, L. D. Merkle, Quantum Crosstalk as a Physically Unclonable Characteristic for Quantum Hardware Verification, National Aerospace & Electronics Conference (NAECON), Dayton, OH, August 2023. In review.

B. Martin, D. Hodson, L. D. Merkle. Understanding Unity's ECS Architecture. The 2021 World Congress in Computer Science, Computer Engineering, and Applied Computing (CSCE'21), Las Vegas, NV, July 2021.

L. A. Hsia, L. D. Merkle, D. E. Weeks, G. Vernizzi, M. Y. Lanzerotti, and D. Langley. Physically Unclonable Characteristics for Verification of Transmon-Based Quantum Computers. Government Microcircuit Applications & Critical Technology Conference, 2020.

T. B. Dontigney, L. D. Merkle, R. G. Cobb, J. M. Columbi, and G. B. Lamont. Comparison of Multi-Objective Optimization Algorithms for GEO Space Surveillance Network Architecture Design. 20th Annual Advanced Maui Optical and Space Surveillance Technologies Conference, 2019. https://amostech.com/TechnicalPapers/2019/Space-Situational-Awareness/Dontigney.pdf

L. A. Hsia, L. D. Merkle, G. Vernizzi, M. Y. Lanzerotti, and D. Langley. Hardware Verification and Security for Quantum Computing Systems. Government Microcircuit Applications & Critical Technology Conference, 2019.

A. Grimes, S. Bommer, and L. D. Merkle. The New Faculty Orientation: Using Input for Better Outcomes. 38th Annual Original Lilly Conference on College Teaching, 2018.

I. W. McQuaid, J. Fletcher, L. D. Merkle, R. Cobb, and B. Borghetti. Space Object Identification Using Deep Neural Networks. 19th Annual Advanced Maui Optical and Space Surveillance Technologies Conference, 2018.

M. H. Dunn and L. D. Merkle. Software Security in Direct-Recording Electronic Voting Machines. 13th International Conference on Cyber Warfare and Security, 2018.

M. H. Dunn, L. D. Merkle, et al. Proposed Cybersecurity Merit Badge for the Boy Scouts of America. Poster presented at 49th ACM Technical Symposium on Computer Science Education, 2018.

DOI=https://doi.org/10.1145/3159450.3162280

M. H. Dunn and L. D. Merkle. Assessing the Impact of a National Cybersecurity Competition on Students' Career Interests. 49th ACM Technical Symposium on Computer Science Education, 2018.

DOI=https://doi.org/10.1145/3159450.3159462

B. P. Froberg and L. D. Merkle. Ensuring Android Execution Containers with Formal Methods. 64th Annual Reliability and Maintainability Symposium, 2018.

C. Johnson, M. McGill, D. Bouchard, M. K. Bradshaw, V. A. Bucheli, L. D. Merkle, M. J. Scott, Z. Sweedyk, J. Ángel, Z. Xiao, and M. Zhang. Game Development for Computer Science Education. In Proceedings of the 2016 ITiCSE Working Group Reports (ITiCSE '16). ACM, New York, NY, USA, 23-44, 2016.

DOI=https://doi.org/10.1145/3024906.3024908

M. Kijowski, L. Merkle and J. Gallagher. Improved Learning in an Evolvable Hardware Hover Controller for an Insect Scale Flapping-Wing Micro Air Vehicle. 2011 IEEE Congress on Evolutionary Computation, 2011.

L. D. Merkle. Automated network forensics. In Proceedings of the 10th annual conference companion on Genetic and evolutionary computation (GECCO '08), Maarten Keijzer (Ed.). ACM, New York, NY, USA, 1929-1932, 2008.

DOI=http://dx.doi.org/10.1145/1388969.1389001

L. D. Merkle. Metaoptimization of the in-lining priority function for a compiler targeting a polymorphous computing architecture. In Proceedings of the 10th annual conference companion on Genetic and evolutionary computation (GECCO '08), Maarten Keijzer (Ed.). ACM, New York, NY, USA, 1921-1928, 2008.

DOI=http://dx.doi.org/10.1145/1388969.1389000

A. Chidanandan, R. DeVasher, P. Ferro, D. Fisher, S. Mitra-Kirtley, L. Merkle, D. Mutchler, S. Sexton, M. Simoni, and J. Williams. Work in Progress – Assessing the Impact of Pen-Based Computing and Collaboration-Facilitating Software in the Classroom. Proceedings of Frontiers in Education 2007.

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E. Borzello and L. Merkle. Multi-Robot Cooperation Using the Ant Algorithm with Variable Pheromone Placement. Proceedings of the 2005 IEEE Congress on Evolutionary Computation.

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Other

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A. T. Chamillard and L. D. Merkle. Evolution of an Introductory Computer Science Course: The Long Haul. Presented at the 2002 Rocky Mountain Conference of the Consortium for Computing in Small Colleges.

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C. E. Kaiser, L. D. Merkle, G. B. Lamont, G. H. Gates, Jr., and R. Pachter. Stochastic methods for prediction of modified polypetides. Presented at the First Annual International Conference on Computational Molecular Biology, 1997.

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L. D. Merkle, G. H. Gates, Jr., G. B. Lamont, and R. Pachter. Conformational search using a parallel fast messy GA with migration and parallel selection. Presented at the 209th National Meeting of the American Chemical Society, 1995.

L. D. Merkle, G. H. Gates, Jr., G. B. Lamont, and R. Pachter. Application of the parallel fast messy genetic algorithm to the protein folding problem. In Proceedings of the Intel Supercomputer Users' Group 1994 Annual North America Users Conference. Beaverton Oregon: Intel Supercomputer Systems Division, 1994.

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D. H. Merkle, and L. D. Merkle. High Frequency Analysis of Circular Arches. Air Force Weapons Laboratory Technical Report AFWL-TR-86-22, 1986.

Proposals

Pending

Successful

"Advancing Quantum Resistant Communication." PI for $660K Cooperative Research and Development Agreement with QRC, America. 2025

"Quantum Advantage in Space Domain Operations via Application Specific Quantum Integrated Circuits," Co-PI for one-time $250K from Advanced Science and Technology 2024

"Blue Optimization," PI for one-time $20K from Quantum Research Sciences, LLC 2024

"QIS: Error Mitigation, Chemistry, and HW Verification," PI for one-time $200K from Air Force Research Laboratory Information Directorate 2023

"Suitability of Qubit and Measurement Resonant Frequencies as Quantum PUCs," PI for one-time $30K from Air Force Institute of Technology Faculty Research Council 2023

"Phase II: Evaluation of IonQ Quantum Computing Systems," Co-PI for one-time $200K from Air Force Research Laboratory Information Directorate 2022

"Evaluation of IonQ Quantum Computing Systems," PI for one-time $400K from Air Force Research Laboratory Information Directorate 2022

"ML-Based Decoders and Group Theoretic Analysis of Quantum Error Correction and Mitigation," PI for one-time $50K from Air Force Institute of Technology Faculty Research Council 2022

"Space Situational Awareness Simulations," PI for DoD High Performance Computing Modernization Program project 2018-2022

"An Investigation of Quantum Error Correction on the IBM Transmon-Based Quantum Computers," Co-PI (33%) for $75K grant over 6 months from Air Force Research Laboratory Information Directorate. 2020

"Auto-correlation of GEO RSOs," PI for one-time $10K grant from Air Force Research Laboratory Space Vehicles Directorate 2018-2019

"Developing Physics-Based Machine Learning Algorithms to exploit Hyperspectral Imagery," Co-PI (33.3%) for $210K grant over 36 months from Air Force Research Laboratory Sensors Directorate 2017

"Quantum Computing – Review and Forecast," PI for one-time $5K grant from Air University Integration Cell 2017

Digilent Development Boards for CSSE 232 Computer Architecture I: Five Digilent Spartan Starter 3E Boards 2006

"Evolutionary Computation in Polymorphous Computing Architectures," PI for one-time $64K grant from Air Force Research Laboratory Information Directorate 2004-2007

"Advanced Computing Technology Branch Evolvable Hardware Support," PI for one-time $13K grant from Air Force Research Laboratory 2004

Xilinx Software and Digilent Development Boards 2003

- One time donation valued at $225K from Xilinx University Program for Computer Architecture I
- 90 licenses for full version of Xilinx ISE Foundations 5.2 (replaced $40 per copy student edition)
- Five Digilent Digilab D2E Development Boards (allowed students to implement project designs on state-of-the-art FPGAs)

"Information Warfare and Network Security," PI for renewable $50K per year grant from National Security Agency 2000-2002
"Advanced Evolutionary Computing for Directed Energy Applications," PI for DoD High Performance Computing Modernization Program project 1999-2002
"Computational Magnetohydrodynamics": Coordinator for proposal to renew Common High Performance Computing Software Support Initiative project 1999
"Virtual Prototyping of RF Weapons": Coordinator for proposal to renew DoD Challenge Project 1998

Others

"RAFTS/SMALLRAFTS: FPGA-Based Deep Learning Processor for IDAL," PI for $50K from the Air Force Research Laboratory 2025
"Leading the Way in a New Field: Bioinformatics Courses and an Interdisciplinary Bioinformatics Program," Co-PI for RHIT "Success Grant" $98K grant over two years 2005
"Using a Common Suite of Integrated EDA Tools throughout an Electrical and Computer Engineering Curriculum to Improve Student Learning of Engineering," Proposal Team Member 2003, 2004
"Using GQM for Program, Curriculum, and Course Assessment," Co-PI for $170K grant over 36 months from NSF 2003
"CAREER: Advanced Evolutionary Algorithms Theory and Techniques for Computational Science and Engineering Applications," one-time $463K grant over 60 months from NSF CAREER Grant proposal 2003

Memberships

Professional Societies

Air Force Association (Life Member)
American Association for the Advancement of Science
American Physical Society
American Society of Engineering Education. Divisions (varies):

- Aerospace
- Community Engagement
- Computers in Education
- Computing & Information Technology
- Educational Research and Methods
- Electrical and Computer
- Engineering and Public Policy
- Engineering Ethics
- Engineering Leadership Development
- Engineering Management
- Graduate Studies
- Liberal Education/Engineering & Society
- Mathematics
- Military and Veterans Constituent Committee
- Minorities in Engineering
- Pre-College Engineering Education
- Software Engineering
- Women in Engineering

Association for the Advancement of Artificial Intelligence
Association of Computing Machinery. Special Interest Groups (varies):

- Ada (SIGADA)

- AI (SIGAI)
- Algorithms and Computation Theory (SIGACT)
- Applied Computing (SIGAPP)
- Artificial Intelligence (SIGART)
- Computer Science Education (SIGCSE)
- Evolutionary Computation (SIGEVO)

Institute of Electrical and Electronics Engineers. Societies and communities (varies):

- Computational Intelligence (formerly Neural Networks)
- Computer
- Education
- Internet Technology Policy
- Rebooting Computing
- Smart Grid
- Social Implications of Technology

AFIT Research Centers and Groups

Autonomy & Navigation Technology Center
Center for Cyberspace Research
Center for Space Research and Assurance
Center for Technical Intelligence Studies and Research
Quantum Information Sciences Group

Conferences, Workshops, and Reviews

Joint Review of the AFOSR Quantum Information Science & Atomic Molecular Physics Portfolio — Online 2025
ACM Technical Symposium on Computer Science Education — Pittsburgh, PA 2025
Annual Review of MURI Effort on Full Quantum State Control at Single Molecule Levels — Boston, MA 2025

Quantum Cognitive Architecture (QCA) Workshop — WPAFB, OH 2024
Sixth Quantum for International Workshop — Rome, NY 2024
AFA Warfare Symposium — Online 2024

Fifth Quantum for International Workshop — Rome, NY 2023
Purdue Military Research Institute Inaugural Defense & Security Research Symposium — West Lafayette, IN 2023
General Assembly (Disciples of Christ) — Louisville, KY 2023
AFRL Quantum Enablement Workshop — Online 2023

ACM Special Interest Group on Computer Science Education — Providence, RI 2022

6th Workshop on Designing Empirical Education Research Studies in CS — Online 2021
ACM Special Interest Group on Computer Science Education — Online 2021

5th Workshop on Designing Empirical Education Research Studies in CS — Online 2020
ACM Special Interest Group on Computer Science Education — Portland, OR 2020

General Assembly (Disciples of Christ) — Des Moines, IA 2019
4th Workshop on Designing Empirical Education Research Studies in CS — Online 2019
ORNL/AFIT Quantum Computing Collaboration Kickoff Meeting — Oak Ridge, TN 2019
NASA-Ames/AFIT/AFRL Quantum Computational Chemistry Collaboration Kickoff Meeting — Mountain View, CA 2019

Government Microcircuit Applications & Critical Technology Conference	Albuquerque, NM 2019
ACM Special Interest Group on Computer Science Education	Minneapolis, MN 2019
2018 Original Lilly Conference on College Teaching	Oxford, OH 2018
19th Annual Advanced Maui Optical and Space Surveillance Technologies Conference	Maui, HI 2018
IN-US JTG C4I Workshop	Bangalore, India 2018
3rd Workshop on Designing Empirical Education Research Studies in CS	Charlottesville, VA 2018
CRRC Malware Analysis Professional Development Workshop	Sioux Falls, SD 2018
AFGSC Quantum Information Sciences Workshop	Bossier City, LA 2018
ACM Special Interest Group on Computer Science Education	Baltimore, MD 2018
2nd Workshop on Designing Empirical Education Research Studies in CS	Charlottesville, VA 2017
General Assembly (Disciples of Christ)	Indianapolis, IN 2017
Innovative Technologies in Computer Science Education	Bologna, Italy 2017
Adiabatic Quantum Computing Conference	Tokyo, Japan 2017
ACM Special Interest Group on Computer Science Education	Seattle, WA 2017
International Conference on Cyber Warfare and Security	Dayton, OH 2017
Innovative Technologies in Computer Science Education	Arequipa, Peru 2016
1st Workshop on Designing Empirical Education Research Studies in CS	Raleigh, NC 2016
ACM Special Interest Group on Computer Science Education	Memphis, TN 2016
General Assembly (Disciples of Christ)	Columbus, OH 2015
ACM Special Interest Group on Computer Science Education	Kansas City, MO 2015
ACM Special Interest Group on Computer Science Education	Atlanta, GA 2014
General Assembly (Disciples of Christ)	Orlando, FL 2013
ACM Special Interest Group on Computer Science Education	Denver, CO 2013
ACM Special Interest Group on Computer Science Education	Raleigh, NC 2012
General Assembly (Disciples of Christ)	Nashville, TN 2011
ACM Special Interest Group on Computer Science Education	Dallas, TX 2011
Innovative Technologies in Computer Science Education	Ankara, Turkey 2010
ACM Special Interest Group on Computer Science Education	Milwaukee, WI 2010
General Assembly (Disciples of Christ)	Indianapolis, IN 2009
ACM Special Interest Group on Computer Science Education	Chattanooga, TN 2009
Rebooting Computing	Mountain View, CA 2009
Innovative Technologies in Computer Science Education	Madrid, Spain 2008
Genetic and Evolutionary Computation Conference	Atlanta, GA 2008
ACM Special Interest Group on Computer Science Education	Portland, OR 2008
General Assembly (Disciples of Christ)	Fort Worth, TX 2007
Genetic and Evolutionary Computation Conference	London, England, UK 2007
Innovative Technologies in Computer Science Education	Dundee, Scotland, UK 2007
Best Assessment Processes Symposium IX	Terre Haute, IN 2007
Regional Assembly (Disciples of Christ, Indiana Region)	Indianapolis, IN 2006
IEEE Congress on Evolutionary Computation	Vancouver, BC, Canada 2006
Genetic and Evolutionary Computation Conference	Seattle, WA 2006
Undersea Defence Technology: Europe	Hamburg, Germany 2006

IEEE SMC Information Assurance Workshop	West Point, NY 2006
Best Assessment Processes Symposium VIII	Terre Haute, IN 2006
ACM Special Interest Group on Computer Science Education	Houston, TX 2006
ABET Faculty Assessment Workshop Version 2.0	San Diego, CA 2005
Frontiers In Education	Indianapolis, IN 2005
IEEE Congress on Evolutionary Computation	Edinburgh, UK 2005
General Assembly (Disciples of Christ)	Portland, OR 2005
DoD/NASA Evolvable Hardware Workshop	Washington, DC 2005
Genetic and Evolutionary Computation Conference	Washington, DC 2005
IEEE SMC Information Assurance Workshop	West Point, NY 2005
ACM Special Interest Group on Computer Science Education	St. Louis, MO 2005
Evolutionary Computation in Polymorphous Computing Architectures Kickoff Meeting	Rome, NY 2005
PCA Principal Investigators Meeting	Scottsdale, AZ 2005
PCA Principal Investigators Meeting	Boulder, CO 2005
Regional Assembly (Disciples of Christ, Indiana Region)	French Lick, IN 2004
DARPA Polymorphous Computing Architectures PI Meeting	Monterey, CA 2004
Genetic and Evolutionary Computation Conference	Seattle, WA 2004
DoD/NASA Evolvable Hardware Workshop	Seattle, WA 2004
IEEE Congress on Evolutionary Computation	Portland, OR 2004
Information Institute General Workshop	Rome, NY 2004
IEEE SMC Information Assurance Workshop	West Point, NY 2004
Colloquium on Information Systems Security Education	West Point, NY 2004
Microsoft TechEd 2004	San Diego, CA 2004
Best Assessment Processes Symposium VI	Terre Haute, IN 2004
ACM Special Interest Group on Computer Science Education	Norfolk, VA 2004
IEEE Congress on Evolutionary Computation	Canberra, Australia 2003
General Assembly (Disciples of Christ)	Charlotte, VA 2003
Pi Kappa Alpha Officers Leadership Academy	Memphis, TN 2003
GECCO Afterglow Workshop	Champaign-Urbana, IL 2003
Genetic and Evolutionary Computation Conference	Chicago, IL 2003
IEEE SMC Information Assurance Workshop	West Point, NY 2003
DoD High Performance Computing Users Group Meeting	Seattle, WA 2003
High Performance Computing Advisory Panel Meeting	USAF Academy, CO 2003
Best Assessment Processes Symposium V	Terre Haute, IN 2003
ACM Special Interest Group on Computer Science Education	Reno, NV 2003
Women in Information Technology	Indianapolis, IN 2002
Annual Meeting of the Division of Computational Physics	San Diego, CA 2002
Genetic and Evolutionary Computation Conference	New York, NY 2002
IEEE SMC Information Assurance Workshop	West Point, NY 2002
ACM Special Interest Group on Computer Science Education	Covington, KY 2002
NSA review of Network Security and Information Warfare	Ft. Meade, MD 2001
Genetic and Evolutionary Computation Conference	San Francisco, CA 2001
IEEE International Conference on Plasma Science	Las Vegas, NV 2001
IEEE SMC Information Assurance Workshop	West Point, NY 2001
ACM Special Interest Group on Computer Science Education	Charlotte, NC 2001
ABET Open Enrollment Faculty Workshop	San Juan, PR 2001
Genetic and Evolutionary Computation Conference	Las Vegas, NV 2000
IEEE International Conference on Plasma Science	New Orleans, LA 2000

Congress on Evolutionary Computation	Washington, D.C.1999
High Power Microwave Conference	Albuquerque, NM 1999
IEEE International Conference on Plasma Science	Monterrey, CA 1999
DoD High Performance Computing Users Group Meeting	Monterrey, CA 1999
ACM Symposium on Applied Computing	San Antonio, TX 1999
Annual Meeting of the Division of Plasma Physics	New Orleans, LA 1998
DoD High Performance Computing Modernization Office review of Computational Electromagnetics and Acoustics Computational Technology Area	WPAFB, OH 1998
DoD High Performance Computing Users Group Meeting	Houston, TX 1998
International Conference on Evolutionary Computation	Anchorage, AK 1998
DoD High Performance Computing Modernization Office Common High-Performance Computing Software Support Initiative Alpha Test and review of Computational Magnetohydronamics	WPAFB, OH 1998
Workshop on Parallel Profiling and Debugging	Vicksburg, MS 1998
ACM Symposium on Applied Computing	Atlanta, GA 1998
Annual Meeting of the Division of Plasma Physics	Pittsburgh, PA 1997
International Conference on Genetic Algorithms	East Lansing, MI 1997
Intel Supercomputing Users Group Meeting	Albuquerque, NM 1997
SIAM Conf. on Parallel Processing for Scientific Computing	Minneapolis, MN 1997
American Chemical Society Central Regional Meeting	Dayton, OH 1996
International Conference on Evolutionary Computation	Perth, Australia 1995
U. Illinois Workshop: Fast Messy Genetic Algorithms	Champaign-Urbana, IL 1995
International Conference on Genetic Algorithms	Pittsburgh, PA 1995
Intel Supercomputing Users Group Meeting	Albuquerque, NM 1995
AFOSR Workshop on Optimization of Molecular Structures	Washington, D.C.1995
National Meeting of the American Chemical Society	Los Angeles, CA 1995
Intelligent Systems for Molecular Biology	Palo Alto, CA 1994
International Conference on Evolutionary Computation	Orlando, FL 1994
International Conference on Genetic Algorithms	Champaign-Urbana, IL 1993
AFOSR Workshop: Optimization Techniques for Large Compounds	Ames, IA 1993
Intel Supercomputing Users Group Meeting	Dallas, TX 1992
International Conference on Parallel Processing	St. Charles, IL 1992
World Congress on Expert Systems	Orlando, FL 1991
Oak Ridge National Laboratory Tenth Parallel Circus	Oak Ridge, TN 1991

Training and Self Improvement

Center for Innovation in Eduation workshops	2024-Present
Instructional Innovation for Deeper Learning Citation Management & Library Tools Designing for Engagement: Rethinking Curriculum to Spark Sensemaking in Engineering Generative AI Research Tools, Intentional AI: Using Gen AI to Augment Learning	
Microscopy at the Quantum Edge: Imaging Topological States, Skyrmions, and Superconductors	2025
IonQ Technology Updates	2025

AFIT CSCE 544 Data Security	2025
Introducing Pasqal Community	2025
DPAAS Meeting on Hypersonics	2024
91st Cyberspace Operations Squadron Mission/Capabilities/Recruitment	2024
Course audit: PHYS 655 Quantum Physics, Maj Keith Wyman	2023
Course audit: PHYS 757 Quantum Computing, Prof. David Weeks	2018
Mentee, AFIT/EN Peer Mentoring Program	2017-2018
Muscatatuck Urban Training Center Field Trip	2017
Kern Entrepreneurial Engineering Workshop	2017
1st Workshop on Developing Empirical Education Research Studies	2016
Android App Development	2012-2013
Creative Writing	2012
General Election Poll Worker Training	2008, 2010
IEEE Consultants' Networks Workshop	2008
Personal Productivity System based on Getting Things Done: The Art of Stress Free Productivity, Dave Allen, and Take Back Your Life: Using Outlook to Get Organized and Stay Organized, Sally McGhee	2007
DoD Information Assurance Awareness Training	2007
Elders' Pre-Assembly Conference	2005, 2007
Structural Bioinformatics: A BioQUEST Curriculum Consortium Approach	2005
Not-for-profit Board Development Workshop	2004
Rose-Hulman Fall Writeoff	2004
Course audit: Compiler Construction, Prof. Claude Anderson	2004
Course audit: Computer Architecture II, Prof. Tina Hudson	2004
Course audit: Computer Security, Prof. Mark Ardis	2004
Evolutionary Bioinformatics: A BioQUEST Curriculum Consortium Approach	2004
Air Command and Staff College	1999-2004
Information Warfare Applications Course	2003
Guidant, Inc. visit focusing on computer architectures for pacemakers	2003
Reading Enhancement Course	2001
Course Assessment Seminar	2001
Center for Educational Excellence Seminars	
• "Preparing a Portfolio for Professional Growth and Promotion"	2001
• "Active Learning and Cooperative Groups in the Lecture Classroom"	2000
• "Interacting with Front Page"	2000
Academy Character Enrichment Seminar	1999
USAFA New Instructor Orientation	1999
Laser Short Course	1998
Acquisition Fundamentals	1997
Squadron Officers School	1994
Introduction to Acquisition Management	1990
Air Force Logistics Command Materiel Management	1988

SERVICE

Students

Air Force Institute of Technology

Cyber Advanced Networks in Mobile Applications Laboratory (Cyber ANiMAL)

- Facilitator 2020-Present
- Co-facilitator 2016-2020

Ph.D. Thesis Committee Chair and Academic Advisor

- Mitchell Hirschfeld, *Evolutionary Generation of Diversity for Cyber Resiliency* 2021
- Leleia Hsia, *Physically Unclonable Characteristics for Verification of Transmon-Based Quantum Computers* 2021

M.S. Thesis Committee Chair and Academic Advisor:

- Pope, Gregory, *TBD* TBD (part time)
- James Williams, *TBD* TBD (part time)
- Bazzell, Ryan, *TBD* Projected 2026
- Foster, Jack, *TBD* Projected 2026
- Mendoza, Matthew, *TBD* Projected 2026
- Christian Grauberger, *Quantum Circuit Reduction Using Three-Layer Transposition* 2024
- James Wang, *Group Convolutional Decoders for Toric Codes* 2024
- Brett Martin, *Evaluating Neural Network Decoder Performance for Quantum Error Correction Using Various Data Generation Models* 2022
- Claire Badger, *Performance of Various Low-Level Decoders for Surface Codes in the Presence of Measurement Error* 2021
- Brenna Cole, *Commuting Composition for Quantum Circuit Reduction*, Dean's Award 2021
- Brian Curran, *Solving the Quantum Layout Problem for NISQ-Era Quantum Computers via Metaheuristic Algorithms* 2021
- Brandon Kamaka, *Quantum Transpiler Optimization: On the Development, Implementation, and Use of a Quantum Research Testbed* 2020
- Jessica Switzler, *NewHope: A Mobile Implementation of a Post-Quantum Cryptographic Key Encapsulation Mechanism* 2020
- Marcus Catchpole, *Machine Learning in Education Content Selection*. 2019
- Troy Dontigney, *Multi-objective Optimization of a Space Situational Awareness (SSA) System Using Advanced Algorithms*. 2019
- Ian McQuaid, *Autonomous GEO Track Correlation with Machine Learning*. 2018
- Michael Dunn, *Impact of Extracurricular Cybersecurity Education Programs for Middle and High School Students*. 2018
- Brandon Froberg, *Formally Verified Execution Environments on Android*. 2018

Ph.D. Thesis Committee Member:

- Adrian Scheppe, *Topological Materials & Quantum Computing: Search and Implementation* 2023
- Nicolas Guerrero, *Quantum Error Detection Without Using Ancilla Quvits* 2022
- David Morrow, *Developing a Basic Formal Supply Chain Ontology to Improve Communication and Interoperability* 2021

- Jon Knapp, *Facilitating Automated Machine to Machine Protocol Analysis* 2020
- Frederick Webber, *Multi-Objective Reinforcement Learning with Concept Drift*. 2017
- Jesse Zydallis, *Building-Block-Based Multiobjective Messy Genetic Algorithms: Theory, Analysis, and New Innovations.* 2003
- David Van Veldhuizen, *Multiobjective Evolutionary Algorithms: Classifications, Analyses, and New Innovations*. 1999

M.S. Thesis Committee Member:

- Klepp, Kayleb, *TBD* Projected 2026
- Wong, Meilyn, *TBD* Projected 2026
- Wood, Dalton, *TBD* Projected 2026
- Douglas, Matthew, *Evaluating Learning Outcomes in a Serious Game: A Practical and Model Checking Approach* 2025
- Wallace, Karli, *Physically Unclonable Characteristics for Trapped Ion Quantum Processors* 2024
- Christopher Chwa, *Quantum Crosstalk as a Physically Unclonable Characteristic for Quantum Hardware Verification* 2023
- Robert Hall, *A Computational Analysis of Voltage-Controlled Majorana Zero Modes In Topological Nanowires* 2024
- Charles Woodrum, *Methods of Evaluating Quantum Phase Estimation Circuit Output* 2023
- Seth Hyra, *Coupling to Quantum Topological Order in Superconducting Qubit Systems* 2023
- Simeon Hanks, *Error Detection in Quantum Algorithms* 2021
- Ryan Raettig, *Accelerating Point Set Registration for Automated Aerial Refueling* 2021
- Adrian Scheppe, *Topological Realizations of Entanglish Quantum Gates* 2021
- Nicolas Guerrero, *Solving Combinatorial Optimization Problems using the Quantum Approximation Optimization Algorithm* 2020
- Marvin Newlin, *Quantitative Analysis of Evaluation Criteria for Generative Models* 2020
- Graig Ganitano, *Confidence Inference in Defensive Cyber Operator Decision Making* 2019
- Kolby Elliott, *Verifying Distributed Systems Reliability via Model Checking* 2018
- Rosemberg Ortiz, *Scouting in Real-Time Strategy Games: Theory, Methods, and Implementation*. 2017
- David Caswell, *Active Processor Scheduling Using Evolutionary Algorithms*. 2002
- Steve Michaud, *Solving the Protein Structure Prediction Problem with Fast Messy Genetic Algorithms*. 2001
- Karl Deerman, *Protein Structure Prediction Using Parallel Linkage Investigating Genetic Algorithms*. 1999

Rose-Hulman Institute of Technology

Thesis Committee Member:

- M.S. Thesis, Justin Dillman 2005-2008
- M.S. Thesis, Doug Morgan 2003-2008
- M.S. Thesis, Curtis A. Schmitt 2003-2008
- M.S. Thesis, Harsha V. Yarlagadda 2003-2005

Tau Beta Pi sponsored Fundamentals of Engineering Exam Review Session 2008

Participant, Mobile Computing Study 2007-2008
Faculty Advisor, Tau Beta Pi Honor Society 2005-2008
Rose-Hulman Chorus 2003-2008
- Faculty Co-advisor (2004-2008)

Faculty Advisor, Programming Contest Teams 2003-2008
- ACM Intercollegiate Programming Contest (2003 – 2008)
- Carnegie Mellon University Invitational Programming Contest (2005, 2007, 2008)

Faculty Advisor, Upsilon Pi Epsilon Honor Society 2003-2008
Academic Advisor 2003-2008
- 20 CS and SE majors (2007-2008)
- 14 Freshmen and four upperclass SE majors (2006-2007)
- 23 CS and SE majors (2003-2006)

New Student Orientation, Social, Professional, and Ethical Expectations 2002-2008
- Computing Perspective in Introductory Session (2006, 2007)
- Small Group Session Leader (2002)

Judge, CSSE Laboratory Design Contest 2007
Driver, Lambda Chi Alpha Run for Kids' Sake 2007
Chapter Advisor, Pi Kappa Alpha Social Fraternity (Iota Delta chapter) 2003-2007
Midwest Undergraduate Private Engineering Colleges Design Competition 2004
Client, Term Project, *Software Architecture* 2004
Laptop Orientation 2003, 2004
Client, Term Project, *Software Requirements and Specification* 2003
Client, Procedure Project, *Technical Communication* 2002

United States Air Force Academy

Faculty Advisor, ACM Student Chapter 2001-2002
Associate Air Officer Commanding, Cadet Squadron 21 2001-2002
Cadet Summer Research Program Representative 2000-2002
- Arrange summer positions with outside organizations (Air Force, DoD, and other government organizations)
- Manage logistical issues associated with cadet travel and performance evaluation

Sponsor Family, six USAF Academy cadets 2000-2002
Academic Advising 1999-2002
- Computer Engineering Assistant Advisor-In-Charge (2000- 2002)
- Advisor for over 50 cadets, including cadets majoring in computer science, computer engineering, and basic sciences, as well as undeclared cadets (1999-2002)

Associate Air Officer Commanding, Basic Cadet Training B Squadron 2001
Officer Member, Cadet Wing Honor Board 2001
Shadow Program 2001

Department

Air Force Institute of Technology, Electrical and Computer Engineering

Advised five casual students on Random Benchmarking of Circuit-Model Quantum Computers project 2022-2023
Member, ENG Direct Accession Recruitment Working Group 2022-2023
CCR-USCYBERCOM Research Excellence Award Committee 2018
Interim Computer Engineering Curriculum Chair 2018
- Admissions Academic Reviews
- Program History for SECAF Study
- Program Assessment Meeting and Report

Wright State University, Computer Science and Engineering

Undergraduate Curriculum Committee, ex officio 2009-2011

Rose-Hulman Institute of Technology, Computer Science and Software Engineering

Computer Science Program Vision Statement Committee 2007-2008
Computer Science Program Coordinator 2004-2008

- Lead implementation of CSSE Continuous Course Improvement Process (2004-2008)
- ABET Computing Accreditation Commission Self-Study (2005-2006) – program accredited
- Led development of CSSE Continuous Course Improvement Process (2004-2005)

Operating Systems and Computer Security Lab Equipment Committee 2004-2008
Fundamentals of Software Development Committee 2003-2006
Awards and Honors Ceremony 2004
Chair, Fundamentals of Software Development Committee 2003-2004
New Faculty Mentor, Prof. Archana Chidanandan 2003-2004
Honors and Awards Committee 2003

United States Air Force Academy, Computer Science

Director of Core Instruction 2001-2002

- Overall responsibility for introductory computing course
  - Graduation requirement for all cadets
  - Supervised 22 instructors teaching 59 sections
  - 1171 cadets completed course
  - Represents over half of department's teaching workload
- Responsible for textbook selection, development of course materials, development and maintenance of course website, and recommendation of course grades to the Dean
- Ensure consistent grading and dissemination of information about graded events by all instructors

Led department-wide redesign of introductory computing course 2000-2002

- Added application-level learning objectives for algorithms, systems, databases, and other non-programming topics to make course relevant to cadets in non-computing majors
- Added web-based pre-assessment quizzes covering reading at the knowledge and comprehension learning levels, allowing class time to focus on more difficult application level objectives.
- Emphasized active and collaborative teaching techniques
- Incorporated classroom use of standard issue laptops
- Simplified programming syntax to allow instructors to focus on principles underlying programming constructs
- Instituted Honors version for advanced cadets – covers same topics in more depth, as well as additional programming topics
- Outstanding results:
  - Students better prepared for class
  - Higher grades, supporting observation of better learning
  - Despite the course's bad reputation, students rated it highest of any core course in Basic Sciences or Engineering in 9 of 36 categories, including "amount learned" and "course as a whole"

Supervisor 2000-2002

- Civilian faculty (one associate professor)

- Military faculty (one assistant professor and three instructors, all captains)
- Newly commissioned lieutenant awaiting pilot training, performing some duties similar to a graduate assistant

Computer Science Curriculum Committee 1999-2002

Deputy for Computer Engineering 2001

- Department focal point for issues associated with new Computer Engineering major, jointly administered with Department of Electrical Engineering
- Serve as Division Head in course assessment process for all Computer Science courses taken by Computer Engineering majors – assist course directors in development of Course Assessment Plans, review Course Assessment Reports, develop and deliver Division Assessment Report

Research Director, USAFA Department of Computer Science 2000-2001

- Hired Research Associate
  - Faculty are heavily loaded with teaching duties, and do not have graduate students to pursue interesting areas of research
  - Department has several sources of external funding
- Disseminated information about research opportunities (implemented web page and database to organize information)
- Maintained records of department research
  - Prepare annual Department Research Review/Summary
  - Assisted in self-study for CSAB accreditation.
  - Prepare department submissions for both internal and external research bulletins
- Reviewed department research proposals and publications
- Coordinated Independent Study courses
- Point of contact for Air Command and Staff College research topic "Information Operations"

Institution

Air Force Institute of Technology

Facilitator, Quantum Information Science Weekly Seminar 2018-Present

Advisor, Tau Beta Pi 2025-Present

Attended national convention 2023-2024

Attended regional convention 2025

Core Member Representative, NCWIT Academic Alliance 2021-Present

Lead Writer, Proposal for Program Assessment Committee of the Faculty Council 2025

Inactive since Jan 2025 due to federal policy on DEI

Prepared AFIT Response to "DOE Office of Science: Request for Information for Preparing a Future Workforce in Quantum Information Science" 2023

Developed Senior Leadership QIS briefing for AFIT/CL and AFIT/CZ 2023

Teaching Effectiveness Tool Implementation Team 2021-2022

Member, EN Faculty Development Advisory Committee 2016-2022

Member, EN New Faculty Orientation Committee 2016-2022

Facilitator, EN Course Design Workshop 2016-2022

- Included in AETC/CLO Courseware Repository
- Syllabus requested by National Intelligence University
- EN Assessment Committee 2019-2020

- EN Strategy Development Team for Science and Technology 2018-2020

Facilitator, Commander's Professional Development Book Colloquium 2019
Member, Higher Learning Commission 2020 Assurance Argument Team (Criterion 4 Teaching and Learning) 2017-2018
Panel Member, *What I Wish I Had Known*, New Faculty Orientation 2018
Member, Teaching Excellence Subcommittee, EN Strategic Plan 2017-2018
Ph.D. Thesis Dean's Representative:

- Grant M. Thomas, *Prototype Development and Dynamic Characterization of Deployable CubeSat Booms* 2019
- David H. Curtis, *Satellite Articulation Sensing using Computer Vision*. 2018
- Cory T. Lane, *In-Scene Atmospheric Compensation of Thermal Hyperspectral Imaging With Applications to Simultaneous Shortwave Data Collection*. 2017

Member, External Subcommittee, HLC Quality Initiative Project, "Modernization of AFIT's Instructional Capabilities" 2016-2017

Rose-Hulman Institute of Technology

Chair, Advisory Committee on Academic Computing 2007-2008
Beta Tester, Automated Absence Notification System 2006-2008
Parallel Computing Steering Committee 2005-2008
Greek Advisory Council 2003-2008
Math Advisory Committee 2003-2008
Focus Group Member, Academic Governance Commission 2007
Howard Hughes Medical Institute Undergraduate Science Proposal Team Education 2007
ABET "Supergroup" 2005-2007
Faculty Affairs Committee 2005-2007
Laptop Computer Committee 2005-2006
Rules and Discipline Committee 2004-2005
Second Year Faculty Perspective, New Faculty Dinners 2003-2004
Secretary, Quality of Education Committee 2003-2004
Judge, MATHCOUNTS 2003
Visual and Performing Arts Committee 2002-2003

United States Air Force Academy

Engineering Programs Advisory Council, Computer Engineering Evaluator 2018
Process Improvement Principle, Department of Electrical Engineering 2001-2002
Co-Chair, Computer Engineering Curriculum Committee 1999-2002
USAFA Engineering Criteria 2000 Committee

- Represent Department of Computer Science in the development of assessment plan for computer engineering program 1999-2002
- Initial ABET visit for computer engineering program in Fall of 2002 led to accreditation

Chair, Computer Engineering Working Group 2000-2001

- Under the guidance of the Computer Engineering Steering Group, coordinate the joint administration of the computer engineering major between the Department of Computer Science and the Department of Electrical Engineering

Officer of the Day (about once per semester) 2001
Basic Sciences Division representative for selection of Thomas D. Moore Award winner for outstanding research in the Cadet Summer Research Program 2000
Summer Scientific Seminar coordinator 2000

- Each summer, several hundred prospective applicants attend seminars offered by the academic departments during each of two weeks. One of USAFA's most effective recruiting tools.
- Coordinated department's offering of "Programming for the World Wide Web," in which students use web authoring tools to develop a home page
- Student feedback was extremely positive

Chapman University

Represented Department of Computer Science in negotiating articulation agreement with College of Santa Fe. 1998

Profession

Technical Consulting

ABMS TM-BM Generate Battle COA software development sprint week 2024
AFRL CIO 2024
NC3 Integration Division 2022-2023
Mentor, Workshop on Developing Empirical Education Research Studies 2017-2019
Member, Advisory Board, Air Force Research Laboratory Senior Scientist for Space Situational Awareness 2015-2016
National Air and Space Intelligence Center 2016

Conference Organization

ACM SIGCSE Global Computing Education Conference 2019-Present
- Associate Program Chair (2019-2023)

ACM SIGCSE Innovative Technologies in Computer Science Education 2007-Present
- Associate Program Chair (2019-2023)
- Member, Working Group on Games for Computing Education (2016-2017)
- Registrar and Treasurer (2007-2008, 2010)

ACM SIGCSE Technical Symposium on Computer Science Education 2003-Present
- Associate Program Chair (2018-2020, 2022-Present)
- Co-registrar (2003-2020)
- Co-chair, Poster Track (2019)
- Co-chair, Workshops Track (2020)
- Judge, Doctoral Consortium (2003, 2018)
- 2021 Junior Symposium Co-chair (2020-2021)
- 2022 Senior Symposium Co-chair (2021-2022)

ACM SIGEVO Genetic and Evolutionary Computation Conference 1999, 2003-2008
- Program Committee, Genetic Algorithms Track (1999, 2004- 2006)
- Undergraduate Workshop
  - Chair/co-chair (2004-2008)
  - Panel Member (2003-2008)
- Workshop on Defense Applications of Computational Intelligence (formerly Workshop on Military and Security Applications of Evolutionary Computation), Co-chair (2004-2008)

ASEE Frontiers in Education, Session Chair 2005
IEEE Congress on Evolutionary Computation, Session Chair 2004
WWW@10 Conference, Host of Distinguished Guest 2004
IEEE Int'l Conf. on Systems, Man, and Cybernetics, Tutorials Chair 2002-2003
ACM SIGAPP Symposium on Applied Computing, Session Chair 1998
Intel Supercomputer Users Group Meeting
- Vendor Coordinator 1997

- Session Chair 1997

Technical Reviews

External Reviewer:

- AFOSR Korean Quantum Initiative proposals (2024)
- AFWERX Phase I SBIR Open Topic Call quantum computing proposals (2019)
- Award Application Reviewer, National Center for Women & Information Technology (2019)
- Panel Member, DoE Accelerated Strategic Computing Initiative PSE/DisCom2 Milepost Review (2001)
- Proposal Reviewer, Common High Performance Computing Software Support Initiative Computational Electromagnetics and Acoustics project (1999)
- Beta Test reviewer, DoD Common High Performance Computing Software Support Initiative project EIGER – Electromagnetic Interactions GeneRalized (1999)
- Proposal Reviewer, Department of Energy Small Business Innovative Research (1998-1999)

Journal Article Referee:

- IEEE Transactions on Evolutionary Computation (2023)
- ASEE Computers in Education Journal (2018, 2020, 2021, 2023, 2025)
- Annals of Operations Research (2007)
- IEEE Transactions on Systems, Man, and Cybernetics (2000, 2001, 2007)
- International Journal of Electrical Engineering Education (2018)
- Journal of Defense Research and Engineering, Microelectronics Special Edition (2019)
- Journal of Interactive Learning Environments (2006, Sp2007, Fa2007)
- Inverse Problems in Engineering (2006)
- Genetic Programming and Evolvable Machines special issue on Biological Applications of Genetic and Evolutionary Computation (2003)
- Genetic Programming and Evolvable Machines special issue on Computation in Gene Expression (2001)
- Evolutionary Computation special issue on Scalable Evolutionary Computation (two articles) (1999)

Conference Associate Program Chair

- ACM SIGCSE Technical Symposium on Computer Science Education approximately five papers per year, 2018-present)

Conference Paper Referee:

- NAECON (2 submissions, 2024)
- ASEE Annual Conference & Exposition (23 papers, 2017-2018)
- IEEE International Conference on Systems, Man, and Cybernetics (2003-2004)
- IEEE International Conference on Systems, Man, and Cybernetics Student Paper Competition (2003)
- IEEE SMC Information Assurance Workshop (4 papers, 2002)
- ACM SIGCSE Innovative Technologies in Computer Science Education (5 papers/year, 2007-2018; working group report, 2017)
- Intel Supercomputer Users Group Meeting (3 papers/year, 1994-1997)

- Parallel Problem Solving from Nature (5 papers, 2002)
- ACM SIGAPP Symposium on Applied Computing (4 papers/year, 1994-2008)
- ACM SIGCSE Technical Symposium on Computer Science Education (papers, posters, special session, workshops/tutorials, 2017-present)

Miscellaneous

Co-Chair, Quantum Working Group, Midwest Microelectronics Consortium	2025-Present
Web-based SIGCSE Conference Registration System – Lead designer, developer, and maintainer	2004-2009
United States Air Force Scientific Advisory Board Study, Technical Editor *Science & Technology and the Air Force Vision: Achieving a More Effective S&T Program*	2000
HPM Generation Seminar, Initiator and coordinator	1998-1999

Outside Organizations

NATO SPC AFSC Risk Reduction and Feasibility Studies (RRFS) Technical Concept Assessment	2023
SAF-CIO A6 Air Force Quantum Strategy Working Group	2018-2019
• Face-to-face Meeting Host	2018
Subject Matter Expert, Air Force Science and Technology Strategy 2030	2018

Community

Troop Committee Chair, BSA Troop 116	2018-2024
Judge, Normandy Creek Elementary Science Fair	2018
Advancement Coordinator, BSA Troop 116	2015-2018
Pleasant Hill Swim Club Board of Directors	2014-2016
Volunteer Coordinator, Fighting Fish Swim Team	2012-2015
Academic Volunteer Program, Centerville City Schools	2010-2015
General Election Polling Location Supervisor	2010-2015
Webmaster, Centerville Middle School Cross Country	2012-2013
Mentor, BSA Troop 116 Patrol Leader	2012-2013
Advancements Chair, Cub Scout Pack 315	2009-2011
General Election Poll Worker	2008
Volunteer, Lost Creek Elementary School Computer Laboratory	2007-2008
Assistant Cubmaster, Cub Scout Pack 200	2007-2008
Rose-Hulman United Way Campaign Representative	2007
Wildwood Day Camp Den Walker	2007
Tiger Den Leader, Cub Scout Pack 200	2006-2007
Substitute Teacher, World Gospel Church Homeschool Algebra Class	2005
Judge, Community Theatre of Terre Haute	2003-2004
Rose-Hulman Daycare Committee	2002
Judge, Mountain Ridge Middle School Science Fair	2001
Judge, New Mexico High School Supercomputing Challenge	1997-1999
Volunteer, Habitat for Humanity	1992, 1997
Judge, Miami Valley Regional Science Fair	1993-1996
Assistant Scoutmaster, Troop 85, Kirtland AFB, NM	1984-1987

Religious

Multifaith Campus Alliance in the Miami Valley

Board of Directors	2009-2017
Chair, Finance and Administration Committee	2010-2017
Chair, By-Laws Revision Committee	2011-2012
Treasurer	2010-2011
Chair, Funds Development and Public Relations Committee	2009-2010

Central Christian Church of Kettering, OH

Elder	2025-Present
Member, Chancel Choir	1992-1996,2023-Present
Secretary, Board of Elders	2025-2026
Leader, Chi Rho Youth Group	2012-2014
Chair, Children and Youth Christian Education Ministry	2013
Member, Intentional Interim Working Group	2012-2013
Webmaster	2012-2013
Member, Technology Ministry	2012-2013
Member, By-Laws Committee	2011-2013
Chair, Adult Christian Education Ministry	2009-2013
Pulpit Committee	2012
Sunday School Teacher	2008-2012
Delegate, General Assembly	2011, 2013
Unbinding the Church, Prayer Team Leader	2009
Member, Nominating Committee	1996
Chair, Debt Retirement Campaign	1996
President, Chancel Choir	1995-1996
Secretary, Bridge Club	1995-1996
Member, Stewardship Committee	1995-1996
Deacon	1990-1996, 2009-2012
Co-leader, Christian Children's Fellowship	1994-1995
"Jeffrey" in the musical Godspell	1992
Worship Leader	1990

Indiana Commission on United Ministries in Higher Education

Board of Directors 2004-2008

- Chair, Review and Consultation Committee (2005-2008)
- Personnel Committee (2004-2005)

Chair, Review and Consultation Team, Fort Wayne Campus Ministry 2005

United Campus Ministry of Terre Haute, IN

Board of Directors 2003-2008

- Chair (2006-2007)
- Representative to Indiana Commission of United Ministries in Higher Education (2004-2008)
- Executive Committee (2004-2007)
- Finance Committee (2004-2008)
- Vice Chair (2005)
- Chair, Building and Grounds Committee (2004-2006)

Central Christian Church of Terre Haute, IN

Board of Elders 2005-2008

- Chair (2005)

- Representative to General Board (2007-2008)

Congregational Representative, *Disciples World* (monthly denominational magazine) 2003-2008
"New Frontiers" Sunday School class leader (occasional) 2003-2005
Regional Assembly Delegate 2004, 2006
General Assembly Delegate 2003, 2005, 2007
Moderator (two terms) 2004-2005

- Chair of General Board
- Major rewrite of Constitution & By-Laws
- Successful Senior Minister search
- Development and adoption of vision statement
- Successful debt retirement Capital Campaign
- Ex-officio member of all church committees

Chair, Vision Statement Committee 2004
Interim Minister Search Committee 2003
Member, Chancel Choir 2002-2003
Member, Men's Choir 2002-2003
Member, Worship Committee 2003

First Christian Church of Colorado Springs, CO

Chair, Capital Campaign Task Force 2001-2002
Deacon 2001-2002
Member, Chancel Choir 1999-2002

Monte Vista Christian Church of Albuquerque, NM

Co-chair, Membership Ministry 1998-1999
Deacon 1997-1999
Member, Chancel Choir 1997-1999

HONORS

Academic

(Student Award) Best Presentation, Space Situational Awareness Session, 20th Annual Advanced Maui Optical and Space Surveillance Technologies Conference	2019
Order of the Engineer	2019
Best Poster, 22nd Colloquium for Information Security Systems Education	2018
Who's Who in Engineering Education	2005-2006
Best Paper, Mechanical Engineering Division, 2005 American Society for Engineering Education Annual Conference & Exposition	2005
USAFA Department of Computer Science Research Excellence Award	2001-2002
Upsilon Pi Epsilon	2001
Winning team of Service Academy Faculty Programming Contest	2000-2001
Technical Editor for United States Air Force Scientific Advisory Board	2000
Eta Kappa Nu	1992
Tau Beta Pi	1992
National Merit Semifinalist	1983
Presidential Scholar	1983

Leadership and Service

AFIT Team Award (QIP Team, 3rd Quarter)	2017
Newcomer Award – Troop Level	2016
Rose-Hulman Institute of Technology Faculty Member of the Week (five times)	2003-2005
Credentialed Space Professional	2004
Outstanding Associate Air Officer Commanding, 2nd Basic Cadet Training	2001
Air Force Achievement Medal	2000
Air Force Meritorious Service Medal	1999
Outstanding Briefing Letter, Squadron Officer School	1994
Air Force Commendation Medal	1991
Air Force Reserve Officer Training Corps Scholarship	1983-1987
Eagle Scout	1984

REFERENCES

William T. Cooley
Retired Commander, Air Force Research Laboratory
4817 Copper Mountain, Richardson, TX 75082
(617) 633-3142
billcooley@me.com

Prof. Mark Sherriff
Professor and Associate Department Chair, Computer Science
Rice Hall 400
Box 400740
Charlottesville, VA 22904
(434) 982-2688
sherriff@virginia.edu

Prof. David Weeks
Professor of Physics
2950 Hobson Way
Wright-Patterson AFB, OH 45433
(937) 255-3636 x4561 [Dr. Weeks' personal mobile number is available upon request.]
david.e.weeks@icloud.com