REX K. KINCAID

Spring 2024

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Research Interests

Continuous and Discrete Network Location Theory
Metaheuristics for Discrete Optimization Problems

Education

1984	Ph.D.	Operations Research, School of Industrial Engineering Purdue University, West Lafayette, IN. Ph.D. Dissertation: "Location of Central Structures in Networks" Advisors: Thomas L. Morin and Timothy J. Lowe
1980	M.S.	Applied Mathematics, Department of Mathematics Purdue University, West Lafayette, IN.
1978	B.A.	Mathematics (with honors) DePauw University, Greencastle, IN.

Teaching Experience

From 1984	*College of William and Mary, Department of Mathematics* Assistant Professor (1984–1990) Associate Professor (1990–96) Full Professor (1996-present) Chancellor Professor (2017-present)
1992–1993	Lecturer, *Purdue University, School of Industrial Engineering*
1982–1984	*Purdue University, School of Industrial Engineering* Graduate Instructor and Teaching Assistant
1978–1982	*Purdue University, Department of Mathematics* Graduate Instructor, Course Coordinator, and Teaching Assistant

Courses Taught

Math 104 Mathematics of Powered Flight
Math 111 Calculus
Math 150 Graph Theory (1st Year Seminar)
Math 150 Graph Theory and Complex Systems (1st Year Seminar)
Math 323/423 Operations Research I–Deterministic Models
Math 424 Operations Research II–Stochastic Models
Math 490 Senior Seminar (Discrete Optimization, Networks and Complex Systems
Math 520 Computing in Operations Research
Math 553 Programming Techniques in Operations Research
Math 571/671 Introduction to Simulation
Math 577/677 & Csci 628 Linear Programming
Math 578/678 Nonlinear Programming
Csci 654 Combinatorial Optimization (with R. Simha)
Math 579/679 & Csci 758/658 Discrete Optimization
Math 580/680 Topics in Operations Research
Csci 688 Scale-Free Networks
Csci 618 Models and Applications of Operations Research
Csci 688 Network Location Theory
Csic 688 Scheduling Theory and Visualization of Quantitative Information
Csci 690 Air Transportation Optimization Models
Csci 690 Optimization Models for Dominating Sets

Professional Affiliations and Activities

Society Membership

InfORMS–Institute for Operations Research and the Management Sciences (1994-present)
Operations Research Society of America (Associate 1982-90, Full 1990-1994)
The Institute of Management Sciences (1993-1994) (In 1994 ORSA and TIMS merged forming a new society called InfORMS)
Computer Science Technical Section of ORSA (1988-present)
The Section on Locational Analysis of TIMS (1990-present)
Mathematical Programming Society (1985-1987)
Society of Industrial and Applied Mathematics (1986-1991)
Decision Sciences Institute (1986-1988)
New York Academy of Sciences (1987-1988)
International Society for Structural and Multidisciplinary Optimization (1993-1999)
American Institute of Aeronautics and Astronautics (2011-2012)

Service

Editorial Review Board *Intl. J. of Operations Research & Info. Systems* 2010-2019
Editiorial Advisory Board *J. of Mathematical Modelling and Algorithms* 2002-2015
Associate Editor for *INFORMS Journal on Computing* 2002-2008
Editorial Advisory Board for *Computers and Operations Research*, 1996-2006.
Program Committee InfORMS/CSTS conference in Dallas, TX, January 7-10, 1996.
Vice-Chair of Membership for College on Locational Analysis, TIMS, 1993-1997.

Referee For
8th AIAA Multidisciplinary Analysis and Optimization Proceedings (2000),
AIAA Journal of Aerospace Computing, Information and Communication (2012),
AIAA Aircraft, Technology, Integration, and Operations Conference proceedings (2012)
AIAA Journal of Spacecraft and Rockets (2003)
Algorithmica (1994),
American Journal of Mathematics and Management Sciences (1989),
Annals of Operations Research (1991,2002,2021),
Computers and Operations Research (1991–1994,1995,1997–2006,2009-2010),
Environmental Modeling and Assessment (2003)
European Journal of Operational Research (1989,1994,1996,1997,1998,2000,2002-2006),
Geographical Analysis (1990,2003),
IEEE Transactions on Control Systems Technology (2012),
IEEE Transactions on Systems, Man, and Cybernetics (1999),
IIE Transactions on Scheduling and Logistics (1993),
IEEE Journal of Robotics and Automation (1987),
IEEE Potentials (2000),
IEEE Transactions on Intelligent Transportation Systems (2013)
International Journal of Intelligent Systems (2020)
Information Systems and Operational Research (1989),
INFORMS Transactions on Education (2011)
J. of Air Transportation (2019)
J. of Air Transport Management (2015)
Intl. J. of Operations and Quantitative Management (1998),
Intl. J. of Operations Research and Information Systems (2011,2013)
Journal of Heuristics (1995),
Location Science (1992,1995,1997,1998,1999),
Naval Research Logistics (1986,1987,1996,1997,1999,2000),
Networks (1989,1991,2000,2001),
Operational Research: An International Journal (2016, 2017)
Operations Research (1992,1993,1994),
Operations Research Letters (1990,1994),
Optimization and Enginering (2012),
INFORMS Journal on Computing (1990,1992,1995),
Optimization and Engineering (2009),
RAIRO-Recherche Operationnelle (1993),
Structural and Multidisciplinary Optimization (2009),
Systems, Cybernetics and Informatics: WMSCI (2017)
TOP, Journal of the Spanish Society of Statistics and Operations Research (2012),
Transportation Science (1988,1991), and
Winter Simulation Conference Proceedings (2012)

Ph.d. Student Supervision

2007-2015 J. Scott Billie (Applied Science) ABD

2014-2019 D. Blair Sweigart (Applied Science) "Optimization Approaches for Open-Locating Dominating Sets"

2013-2018 Robin Givens (Computer Science) jointly with Gexin Yu (Mathematics) and Weizhen Mao (Computer Science) "Mixed-Weight Open Locating-Dominating Sets"

Undergraduate Honors Theses and Undergraduate Supervised Research

2023–Logan Wolf, "Analysis of Centralized and Distributed Air Traffic Management Systems," NASA Virginia Space Grant Consortium (summer).

2022–Cameron Curtis and Logan Wolf, "Analysis of Centralized and Distributed Air Traffic Management Systems," NASA Virginia Space Grant Consortium and Monroe Scholar respectively (summer).

2021–Erin Cronce, "Analysis of Centralized and Distributed Air Traffic Management Systems," NASA Virginia Space Grant Consortium (summer).

2020–Eli Gnesin, "Sensor Location for Measuring Hypersonic Flow Properties in Isolators," NASA Virginia Space Grant Consortium (summer).

2014–Devon Oberle, "Text Mining in Air Transportation Incident Reports," NSF-EXTREEMS (summer).

2014–Miranda Elliot, "Automating AidData's Data Extraction Process," NSF-EXTREEMS (summer).

2012-2013–Allison Oldham, "Open Locating Dominating Sets on Finite and Infinite Graphs" (jointly with Gexin Yu).

2011-2012–Sarah Kunkler, "Finding the Minimum Randic Index" (jointly with M.Drew Lamar).

2011–Allison Oldham, "Indications: A Matching-Like Structure on Directed Graphs," Computational Science training for Undergraduates in the Mathematical Sciences (CSUMS) summer.

2010–Jennifer Thorne, "Runway Configuration Management," $4,000 Virginia Space Grant Consortium research award for 2010 academic year.

2010–Zach Gates, "Network Bounds for the Zagreb Index," Computational Science training for Undergraduates in the Mathematical Sciences (CSUMS) summer.

2010–Melanie Haines, "Runway Configuration Management," Computational Science training for Undergraduates in the Mathematical Sciences (CSUMS) summer.

2005-2006–Michael Holroyd "Synchronizability and Connectivity of Discrete Complex Systems" High Honors.

2002-2003–Frank Curtis, "Special Classes of 0-1 Matrices," (jointly with Chi-Kwong Li) Highest Honors.

2002-2003–Mike Levy, "Computational Experiments with Two Response Methods for Stochastic Optimization," (jointly with Michael Trosset) High Honors.

2001–Lauren E. Nelson, Verizon Scholarship project "An Optimization Model for Actuator Placement in Hyperthermia Treatment for Tuwmors," Verizon Scholarship research project (summer).

1995-1996–Keith E. Laba, "Actuator Placement for Active Sound and Vibration Control," High Honors.

1993-1994–Andrew Martin, "Local Search Heuristics and the Polymer Straightening Problem," High Honors.

1991-92—Rosemary Berger, "Locating Structural Dampers on Flexible Space Truss Structures: A P-MaxMinSum Problem," High Honors.

1990-91—Lynne G. Yellin, "Noxious Facility Locations: The P-Dispersion-Sum Problem," High Honors.

Awards/Honors

2017–Chancellor Professor of Mathematics

2012–FAA Design Competition. 2nd place for Jennifer Thorne's paper A Tabu Search Approach to Tactical Runway Configuration Managment. R. Kincaid research mentor.

2011–Plumeri Award for Faculty Excellence (recognition for exemplary achievements in teaching, research and service), College of William & Mary.

2010–Finalist, Outstanding Faculty Award, Virginia State Council for Higher Education.

2000–NASA's Group Achievement Award, Active Structural Acoustic Control Flight Demonstration Team (8 members), Highest honor NASA bestows upon groups.

1993–Omega Rho international honorary society (Purdue University Chapter).

1990–College of William and Mary Alumni Fellow (awarded for excellence in teaching).

NASA Faculty Fellowship Program 1989, 1990, 1992, 1993, 1995, 2002-2005.

1983–David Ross Fellowship, Purdue Research Foundation.

1978–Kappa Delta Pi (educational honorary).

Honors Scholarship, DePauw University 1974-1978.

University and Departmental Activities

Applied Mathematics Unit Director, 2012-present.
CAMS (Computational and Applied Mathematics and Statistics) director, 2014-2019.
Graduate Director for Computational Operations Research M.S. degree program, 1995–present.
Merit Evaluation Committee, 1986-89, 1990-92, 1994, 2000, 2001, 2004, 2008, 2013-16.
Mathematics Concentrator Advisor, 1985-1992, 1994-1998, 2000-present.
Pre-major Advisor, 1985-1987, 1989-1992, 1993-1996, 2003-2009.
Chair of Hiring Committee, Department of Mathematics, 1991, 2005, 2012, 2020.
Personnel Committee, 1991, 1993(chair), 1996, 1998, 2006, 2007, 2009-2010.
Arts and Sciences Committee on Graduate Studies, 1995-1996, 2002-present.
Faculty Assembly (elected terms 1995-1998, 2015-2018).
Faculty Assembly Executive Committee (2015-2016).
Faculty Assembly Board Liason Committee (2015-2016).

Faculty Assembly COPAR (2016-2018) Chair 2017-2018.
Faculty Assembly Faculty Affairs Commitee (2016-2017)
Planning and Steering Committee (2017-18) College of William & Mary.
Retention, Promotion, and Tenure Committee (elected terms 1996-1999, 2020-2023, co-chair 2022-23).
Faculty Affairs Committee (elected terms 2000-2002, 2009-2011, 2015-2018) Chair 2002.
Engineering Design and Innovation Committee (apointed 2015-2016)
Arts and Sciences Budget Advisory Group (appointed 2002).
Dean's Advisory Council (appointed 2002).
University Teaching Enhancement Project (2000-2001).
Computer Science Graduate Admissions and Retention Committee, 1998, 2000-2002.
Affirmative Action Committee, Arts and Sciences, 1987-1991 (University 1988).
Colloquia Committee, Department of Mathematics, 1987-1989.
Chair of Mathematics Course Evaluation Committee, 1989-1991.
MOSt (mathematics organization for Students) advisor fall 1993.
Academic Advisory Committee (University) 1995-1998.

Research Grants and Contracts

Virginia Space Grant Consortium, *Summer Collaborative Bridge: Connecting Student Summer Research Experiences across Academics and Industry*, April—December 31, 2024, $4,800

Virginia Space Grant Consortium, *Summer Collaborative Bridge: Connecting Student Summer Research Experiences across Academics and Industry*, with Greg Hunt, March 13—December 31, 2023, $8,000

Virginia Space Grant Consortium and William & Mary, *Summer Collaborative Bridge: Connecting Student Summer Research Experiences across Academics and Industry*, with Greg Hunt, February 3—December 31, 2022, $16,000

National Institute of Aerospace, *A Comparative Study of Computational Architectures in Managing Airspace Complexity and Flexibility Preservation*, July 15, 2021—September 30, 2021, $16,500.

Virginia Space Grant Consortium, *Summer Collaborative Bridge: Connecting Student Summer Research Experiences across Academics and Industry*, with Greg Hunt, March 1—December 31, 2021, $7,000

Virginia Space Grant Consortium, *Summer Collaborative Bridge: Connecting Student Summer Research Experiences across Academics and Industry*, with Greg Hunt, April 13—September 30, 2020, $6,588

William and Mary Faculty Research Leave. "Optimization Models for Open Locating Dominating Sets," 8/18–12/18 and 8/19–12/19 Total budget 90% of annual salary.

NSF Expeditions in Training, Research, and Education for Mathematics and Statistics through Quantitative Explorations of Data (EXTREEMS-QED). Senior Personnel. $880,000, 2013-2018. (mentored 2 students in 2014)

Graduate student support (Kathryn Dugan) $5,000 Virginia Space Grant Consortium for 2013 academic year (R. Kincaid mentor).

The College of William and Mary / Eastern Virginia Medical School Collaborative Grant Program 2013. *Hospital Logistics* with Dr. Joseph Robbins, EVMS Clinical Assistant Professor, Professors Lawrence Leemis, Anke van Zuijlen and Frans Schalekamp, Department of Mathematics. $10,000 August 2013—October 2013.

NASA/NIA, "Comparative Analysis of Fundamental Properties of Centralized and Distributed Control of Transport Systems with Applications to Functional Allocation," $42,291, June 2012—December 2012.

Graduate student support (Jennifer Thorne) $5,000 Virginia Space Grant Consortium for 2011 academic year (R. Kincaid mentor).

William and Mary Faculty Research Leave. "Air Transportation Networks and Runway Configuration Management," 8/11–12/12. Total budget 90% of annual salary.

"Planning Optimal and Implementable Schedules of Airport Configurations and Operating Points in a Stochastic Dynamic System," with Mosaic ATM, Inc. NASA grant, 2009-2012. (William & Mary amount is $122,841.)

NASA, "Multiscale Tools for Airspace Modeling and Design," with S. Patek and E. Bass (Department of Systems and Information Engineering, U. of Virginia) $242,700 (William & Mary amount is $61,200.), February 2008 – May 2010.
Virginia Space Grant Consortium. Algorithms for Space Allocation with NASA-Langley Research Center GIS team. $36,600, 2006-2010 ($8,000 support for four M.S. students).

NASA-NFFP Summer Faculty Fellowship Program with Multidisciplinary Optmization Branch, $12,000, June 5—August 11, 2006.

William and Mary Faculty Research Assignment. "The How and Why of Scale-free Networks," 8/06–12/06. Total budget 90% of annual salary.

NASA-LaRC, "Evaluating the Performance of Air Transport Networks $13,337, September 22, 2005—May 21, 2006.

William and Mary Faculty Research Assignment. "The How and Why of Scale-free Networks," 8/05–12/05. Total budget 90% of annual salary.

NASA-NFFP Summer Faculty Fellowship Program with Multidisciplinary Optmization Branch, $12,000, June 6—August 12, 2005.

NASA-NFFP Summer Faculty Fellowship Program with Multidisciplinary Optmization Branch, $12,000, June 7—August 13, 2004.

NASA-NFFP Summer Faculty Fellowship Program with Multidisciplinary Optmization Branch, $12,000, June 2—August 8, 2003.

NASA-NFFP Summer Faculty Fellowship Program with Satellite Data Production Facility, $12,000, June 3—August 9, 2002.

Reves Center International Travel Grant $400 for ISOLDE IX.

NASA-LaRC, "Bell-Curve Based Evolutionary Strategies for Structural Optimization," (with Shelley Griffith and Ruth Sykes) $42,245, August 1, 2000—July 31, 2001

William and Mary Faculty Research Assignment. "Sensor/Actuator Placement Problems," 8/99–5/00. Total budget 80% of annual salary.

NASA-LaRC, "Bell-Curve Based Evolutionary Strategies for Structural Optimization," (with Michael Weber) $44,800, August 1, 1999—July 31, 2000

NASA-LaRC, "Bell-Curve Based Evolutionary Strategies for Structural Optimization," (with Michael Weber) $41,902, August 1, 1998—July 31, 1999.

NASA-LaRC, "Actuator Placement for Gust and Turbulence Control," $20,982, December 10, 1997—December 11, 1998.

NASA-Virginia Consortium of Engineering and Sciences, August 1, 1997–July 31, 1998, Faculty Advisor, "Probabilistic Mating Rules in Genetic Algorithms," Total award $27,615.

NASA-LaRC, "Actuator Placement for Active Sound and Vibration Control," $31,510, October 1, 1996–August 15, 1997.

NASA-Virginia Consortium of Engineering and Sciences, August 1, 1996–July 31, 1997, Faculty Advisor, "Probabilistic Mating Rules in Genetic Algorithms," Total award $55,230. (I was responsible for generating one-half of this award.)

NASA-LaRC, "Actuator Placement for Active Sound and Vibration Control," $27,568, January 1–August 15, 1996.

NASA–ASEE Summer Faculty Fellowship, Multidisciplinary Optimization Branch, $10,000, June 5 – August 11, 1995.

Roy R. Charles Center, "Curriculum Development—First Year Seminars," $600, May 16-27, 1994.

Faculty Research Award, "Molecular Optimization Problems," $5,700, Summer 1994.

NASA–ASEE Summer Faculty Fellowship, Chief Scientist NASA- LaRC, $10,000, June 7 – August 13, 1993.

William and Mary Faculty Research Assignment, "Noxious Location Problems," $38,160, August 15–May 15, 1993.

NASA–ASEE Summer Faculty Fellowship, Interdisciplinary Research Office NASA- LaRC, $10,000, June 1 – August 7, 1992.

NSF-REU Grant, "Undergraduate Research in Matrix Analysis and Applications," $40,000, June 1, 1991 – May 31, 1992 (faculty participant).

William and Mary Summer Research Assignment, "Metaheuristics for Discrete Network Location Problems," $4,400, Summer 1991.

NASA–ASEE Summer Faculty Fellowship, Interdisciplinary Research Office NASA- LaRC, $9,000, June 4 – August 12, 1990.

NSF Travel Grant to attend ISOLDE V in Los Angeles, CA, $400, June 1990.

NSF-REU Grant, "Undergraduate Research in Matrix Analysis and Applications," $32,000, June 1, 1990 – May 31, 1991 (principal investigator).

NASA–ASEE Summer Faculty Fellowship, Interdisciplinary Research Office NASA- LaRC, $8,000, June 4 – August 12, 1989.

IPA Assignment to the U.S. Army Logistics Management College "Case Studies in Military Operations Research," $12,254, May 23 – July 15, 1988.

Refereed Proceeding Publications

1. "An Interactive Approach to Network Location Problems", *Proceedings of the American Society for Engineering Education 20th Annual Meeting,* Columbia, MO., March 20-22, 1985, pp. 87-94.
2. "An Investigation into the Method of Karmarkar" (with C.M. Klein), in *Northeast American Institute for Decision Sciences Proceedings,* 1986, pp. 199-201.
3. "Fuzzy Networks and Central Structure Locations" (with C.M. Klein), *Southeast Decision Sciences Institute Proceedings,* 1987, pp. 227-229.
4. "A Survey of Submodular Functions and Their Applications" (with C.M. Klein), *International Proceedings of AMSE Conference on Modeling and Simulation,* 1987, pp. 83-114.
5. "The Design of Material Handling Systems for Flexible Manufacturing Systems," (with C.M. Klein) *Proceedings of the 20th Annual Modeling and Simulation Conference,* Pittsburgh, PA, May, 1989, pp. 443-446.
6. "Minimizing Distortion and Internal Forces in Truss Structures by Simulated Annealing," (with S. Padula) *Proceedings of 31st Structures, Structural Dynamics and Materials Conference,* June, 1990, pp. 327-333.
7. "Minimizing Distortion in Truss Structures: A Comparison of Simulated Annealing and Tabu Search," *Proceedings of 32nd Structures, Structural Dynamics and Materials Conference,* April, 1991, 424-430.

8. "The Damper Placement Problem for the CSI-Phase 1 Evolutionary Model," (with C. Bloebaum) *Proceedings of 34th Structures, Structural Dynamics and Materials Conference,* April, 1993.
9. "Optimal Sensor/Actuator Locations for Active Structural Acoustic Control" (with S.L. Padula and D.L. Palumbo) AIAA paper 1998-1865, in *Proceedings of the 39th AIAA/ASME/ASCE/AHS/ASC Structures, Dynamics and Materials Conference*, Long Beach, CA, April 20-24, 1998. AIAA Paper 98-1865.
10. "Bell-Curve Based Evolutionary Optimization Algorithm," with (J. Sobieszczanski-Sobieski and K. Laba) in *Proceedings of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization* , St. Louis, MO, September 2-4, 1998. AIAA Paper 98-4971, pp. 2083-2096.
11. "Applications of Combinatorial Optimization for Sensor and Actuator Placement", (with S. Padula) Short Paper Proceedings of the Third World Congress of Structural and Multidisciplinary Optimization. May 17-21, 1999, Buffalo, NY, pp 323-325.
12. "Performance of a Bell-Curve Based Evolutionary Optimization Algorithm," (with M. Weber and J. Sobieski) AIAA paper 2000-1388, Proceedings of the *41st AIAA Structures, Structural Dynamics, and Materials Conference*, April 2000.
13. "A Bell-Curve Based Algorithm for Mixed Continuous and Discrete Structural Optimization," (with M. Weber and J. Sobieski) AIAA Paper 2001-1550 (AIAA Accession number 25276); 42nd AIAA Structures, Structural Dynamics, and Materials Conference and Exhibit, Seattle, WA; April 2001.
14. "Bell-Curve Genetic Algorithm for Mixed Continuous and Discrete Optimization Problems," (with M. Griffith, R. Sykes and J. Sobieski) AIAA paper 2002-1675, Proceedings of the *43rd AIAA Structures, Structural Dynamics, and Materials Conference*, April 2002.
15. "Bell-Curved Based Optimization for Mixed Continuous and Discrete Structural Optimization Problems," (with R. Sykes and J. Sobieski) AIAA paper 2003-1443, Proceedings of *44th AIAA Structures, Structural Dynamics, and Materials Conference*, April 2003.
16. "Quasi-Newton methods for stochastic optimization,"(with M. Trosset and A. Dimnaku) *Proceedings of the Fourth International Symposium on Uncertainty Modeling and Analysis* September 21-24, 2003, pp. 304-309.
17. "Scale-free Networks: A Discrete Event Simulation Approach," (with N. Alexandrov) *Lecture Notes in Computer Science: Computational Science—ICCS 2005:5th International Conference, Atlanta, GA, USA, Proceedings*, Vol. 3514, pp. 1051-1058.
18. "Synchronizability and connectivity of discrete complex systems," (with M. Holroyd) in *Proccedings of the International Conference on Complex Systems 2006*, New England Complex Systems Institute, Quincy, MA. June (2006).
19. "Understanding the Structure of Power Law Networks," (with C. Gatz and M. Holroyd) *Proceedings of Spring Simulation Multiconference*, Vol. 2, pp. 104-111, March 25-28, 2007, Norfolk, VA., ISBN 1-56555-314-4.
20. "Space Allocation Optimization at NASA Langley Research Center," (with R. Gates and R. Gage) in Proceedings of the Seventh Metaheuristics International Conference, Montreal, CANADA, June 25-30, 2007.
21. "Probing the Effects of Synchrony on the Structure of Air Transport Networks," (with N. Alexandrov and J. S. Billie) in *Proceedings of Eighteenth International symposium on Mathematical Theory of Networks and Systems (MTNS2008)* , Blacksburg, VA, July 28 – August 1, 2008. (12 pages)
22. "Toward Optimal Transport Networks," (with N. Alexandrov and E.P. Vargo) in *Proceedings of the 12th AIAA/ISSMO Multidisciplinary Analysis and Optimiza-*

tion Conference Victoria, BC, Canada, September 12-15, 2008, (AIAA-2008-5814) (11 pages).

23. "Design and Analysis of Air Transport Networks," *Proceedings of the Location and Network Design Workshop*, Pucon, Chile, March 22-25, 2009 (one page abstract, p. 31).
24. "Toward Optimal Transport Networks," (with N. Alexandrov and E.P. Vargo) in *Proceedings of the 13th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2009*, July 10th - 13th, 2009, Orlando, Florida, USA. (5 pages). Selected as one of the top 10% of papers presented at the conference.
25. "Analyzing Historical Changes in the Airline Transportation Network from the 1920's to the Present," (with J.Scott Billie) to appear in the *Proceedings of The International Multi-Conference on Complexity, Informatics and Cybernetics: IMCIC 2010*, held in Orlando, Fl. (6 pages in length)
26. "A Runway Configuration Management Model with Marginally Decreasing Transition Capacities," (with C. Weld and M. Duarte) Proceedings of the 2010 IEEE Systems and Information Engineering Design Symposium, University of Virgina, April 23, 2010. (6 pages)
27. "Office Space Allocation Optimization," (with K. Cummiskey and R. Pereira) Proceedings of the 2010 IEEE Systems and Information Engineering Design Symposium, University of Virgina, April 23, 2010. (6 pages)
28. "Robust Optimization for Runway Configuration Management," (with Rui Zhang) Proceedings of the 11th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference, September 20-22, 2011, Virginia Beach, VA. AIAA 2011-6922 (12 pages)
29. "Tabu Search for Tactical Runway Configuration Management," (with Jennifer Thorne) Proceedings of the 12th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference, September 2012, Indianapolis, IN. AIAA 2012-5459, pages 1445-1457.
30. "An Integer Program for Open Locating Dominating Sets and Its Results on the Hexagon-Triangle Infinite Grid and Other Graphs," (with Daniel B Sweigart and Julia Presnell) 2014 IEEE Systems and Engineering Design Symposium, University of Virginia, April 25, 2014 (4 pages)
31. "The Robust Maximum-Coverage Problem," (with Ian Sturdy) 2014 IEEE Systems and Engineering Design Symposium, University of Virginia, April 25, 2014 (4 pages)
32. "P-Median Problems with Edge Reduction," (with Jana Hartman) 2014 IEEE Systems and Engineering Design Symposium, University of Virginia, April 25, 2014 (4 pages)
33. "Deep Space Storm Shelters and Discrete Event Simulation," (with Kathryn Dugan) 2014 IEEE Systems and Engineering Design Symposium, University of Virginia, April 25, 2014 (4 pages)
34. " Maximum Covering Formulation for Open Locating Dominating Sets," (with D. Blair Sweigart) (2018) In: Fink A., Fgenschuh A., Geiger M. (eds) Operations Research Proceedings 2016. Operations Research Proceedings (GOR (Gesellschaft fr Operations Research e.V.)). Springer, Cham (pp. 259-264) `https://doi.org/10.1007/978-3-319-55702-1_35`
35. "Homogeneous and Mixed Weight Open Locating-Dominating Sets," (with D. Blair Sweigart) *International Symposium on Locational Decisions, ISOLDE XIV*, Ontario, CANADA, July 2017, p. 210-212.
36. "Mixed-Weight Open Locating-Dominating Sets," (with Robin M. Givens, Weizhen Mao and Gexin Yu) *51st Annual Conference on Information Systems and Sciences Proceedings*, March 22-24, 2017 (6 pages). DOI: 10.1109/CISS.2017.7926110

37. "An Integer Linear Program for Mixed-Weight Open Locating-Dominating Sets," (with Robin M. Givens, Gexin Yu an Weizhen Mao) *52nd Annual Conference on Information Sciences and Systems*. accepted January, 2018.
38. "Tabu Search for a Mixed Strength Sensor Location Problem," (with Robin M. Givens) *Proceedings of the 2019 MODSIM World Conference*, Norfolk, VA, April 22-24, 2019, `http://www.modsimworld.org/conference-papers/2019`.
39. "Analysis of Centralized and Distributed Air Traffic Management Systems via Mixed Integer Linear Programs," (with Cameron Curtis and Logan Wolf) *Proceedings of the 2023 MODSIM World Conference*, Norfolk, VA, May 22-23, 2023, No. 3018 (9 pages) `http://www.modsimworld.org/conference-papers/2023`.

Refereed Journal and Book Publications

1. "A New Model for Facility Location Problems" (with C.M. Klein), *Advances in Modeling and Simulation Enterprises Review,* **3,** 1986, pp. 19-32.
2. "The Location of Central Structures in Trees" (with T.J. Lowe and T.L. Morin), *Computers and Operations Research,* **15,** (1988) pp.103-113.
3. "Fuzzy Location Problems" (with C.M. Klein), in *Fuzzy Methodologies for Industrial and Systems Engineering,* G.W. Evans, W. Karwowski, and M.R. Wilhelm (editors), Elsevier Publishers, pp.59-72, 1988.
4. "Locating Mobile Servers on a Congested Network: A Simulation Analysis," (with K. Miller and S. Park) in *Impact of Recent Computer Advances on Operations Research,* R. Sharda, B.L. Golden, E. Wasil, O. Balci, and W. Stewart (editors), Elsevier Publishing Co., New York, pp. 396-406, 1989.
5. "Locating A Point of Minimum Variance on Triangular Graphs," (with O. Maimon), *Transportation Science,* **23,** (1989) pp. 216-219.
6. "Locating an Absolute Center on Graphs That Are Almost Trees," (with T.J. Lowe) *European Journal of Operational Research,* **44** (1990) pp. 357-372.
7. "A Note on Locating a Central Vertex of a 3-Cactus Graphs," (with O.L. Maimon), *Computers and Operations Research,* **17** (1990) pp. 315-320.
8. A Note on "Facility Location Problems on a Network under Multiple Criteria– Fuzzy Set Theoretic Approach," (with S. Chaudhry) *International Journal of System Science,* **21** (1990) pp. 2387-2391.
9. "A Multistage Linear Array Assignment Problem,"(with D.M. Nicol, D.R. Shier, and D. Richards) *Operations Research,***38** (1990) pp. 993-1005.
10. "Simulation Analysis of Mobile Servers on a Congested Network," (with K. Miller and S. Park) *American Journal of Mathematics & Management Sciences* , **12** (1992) pp. 43-64.
11. "An Application of Simulated Annealing to Minimizing Surface Distortion and Internal Forces in Truss Structures," *Structural Optimization,* **4** (1992) pp. 55-61.
12. "Simulation Analysis of Mobile Servers on a Congested Network," (with S. Park, K. Miller, and S. Harvey) in *Computer Science and Operations Research*, Pergamon Press, pp. 105-116, 1992.
13. "Good Solutions to Discrete Noxious Location Problems via Metaheuristics," *Annals of Operations Research,* **40** (1992) pp. 265-281.
14. "The P-Dispersion-Sum Problem: Results on Trees and Graphs" (with L.G. Yellin) *Location Science,* **1** (1993) pp. 171-186.
15. "Minimizing Distortion in Truss Structures: A Comparison of Simulated Annealing and Tabu Search," *Journal of Structural Optimization*, **5** (1993) pp. 217-224.
16. "The Damper Placement Problem on Space Truss Structures," (with R.T. Berger) *Location Science* **1** (1993) pp. 219-234.
17. "The Discrete Anti-P-Center Problem", (with C.M. Klein) *Transportation Science* **28** (1994) pp. 77-79.

18. "The Maxminsum Problem on Trees," (with R.T. Berger) *Location Science,* **2** (1994) pp. 1-10.
19. "A Look-Ahead Heuristic for Scheduling Jobs with Release Dates on a Single Machine," (with W. Mao) *Computers and OR,* **21** (1994) pp. 1041-1050.
20. "On-Line Scheduling Algorithms," (with W. Mao and A. Rifkin) *The Impact of Emerging Technologies on Computer Science and Operations Research*, A. Sofer and S. Nash (editors) (1995) pp. 157-171.
21. "Solving the Damper Placement Problem using Local Search Heuristics," special issue of *OR Spektrum* on Applied Local Search, **17** (1995) pp. 149-158.
22. "Heuristic Search for the Polymer Straightening Problem," (with J. Hinkley and A. Martin) *Computational Polymer Science*, **5** (1995) pp. 1-5.
23. "An Analysis of Service Schedules for the Mobile k-Server Problem," (with W. Mao) *Location Science*, **3** (1995) pp. 107-124.
24. "Location Problems in Active Sound and Vibration Control of Cylinders,"Studies in Locational Analysis, Issue 9 (1996) pp. 69-70.
25. "The Molecular Structure Matching Problem," *Computers and OR*, Issue 1, Vol. 24 (1997) pp. 25-35.
26. "Quelling Cabin Noise in Turboprop Aircraft via Active Control," (with K. Laba and S. Padula) *J. of Combinatorial Optimization* **1**, Issue 3 (1997) pp. 1-22.
27. "Determining the Number of Kanbans and Lotsizes in a Generic Kanban System: A Tabu Search Approach," (with A. Martin, T. Chang, and Y. Yih) *Annals of Operations Research*, **78** (1998) pp. 210-217.
28. "Reactive Tabu Search and Sensor Selection in Active Structural Acoustic Control Problems," (with K. Laba) *J. of Heuristics*, **4** (1998) pp. 199-220.
29. "Actuator Selection for the Control of Multi-Frequency Noise in Aircraft Interiors", (with S.L. Padula) in *Meta-Heuristics: Advances and Trends in Local Search Paradigms for Optimization*, edited by S. Voss, S. Martello, I. Osman, and C. Roucairol, Kluwer, 1999 pp. 111-124.
30. "Bell-curve based evolutionary optimization algorithm," (with J. Sobieski and K. Laba) *Structural Optimization*, **18**, No. 4 (1999) pp. 264-276.
31. "D-Optimal Designs for Sensor/Actuator Placement," (with S. Padula) *Computers and Operations Research* **29**, No. 6 (2001) pp. 701-713.
32. "Performance of a Bell-Curve Based Evolutionary Optimization Algorithm," (with M. Weber and J. Sobieski) *Structural and Multidisciplinary Optimization Journal* Vol.21, No.4, June (2001) pp.261-271.
33. "A Bell-Curve Based Algorithm for Mixed Continuous and Discrete Structural Optimization," (with M. Weber and J. Sobieski) *Structural Optimization* Vol. 24, No. 2, September (2002) pp. 98-105.
34. "Bell-Curve Genetic Algorithm for Mixed Continuous and Discrete Optimization Problems," (with M. Griffith, R. Sykes and J. Sobieski) *Structural and Multidisciplinary Optimization* Vol. 26, No. 6 (2004) pp. 396-405.
35. "Approximate Solutions of the Continuous Dispersion Problems," (with M. Trosset and A. Dimnaku) *Annals of Operations Research* Vol. 136, No. 1 (2005) pp. 65-80.
36. "Minimum Kolmogorov-Smirnov Test Statistic Parameter Estimates," (with M. Weber and L. Leemis) *Journal of Statistical Computation and Simulation*, Volume 76, Number 3, 2006, 195-206.
37. "Determinant Optimization on Binary Matrices," (with F. Curtis) to appear in *American J. of Mathematics and Management Sciences.* Volume 26, Number 1/2, (2006) pp. 33-70.
38. "Metaheuristics for Discrete Optimization," chapter (60 pages) in Operations Research and Management Science Handbook, A. Ravi Ravindran (ed.), CRC Press, Taylor and Francis, December, 2007. ISBN: 9780849397219

39. "Computational Experiments with Heurisitcs for two Nature Reserve Site Selection Problems," (with M. Jeske and C. Easterling) *Computers and Operations Research*, Volume 35, Issue 2 (2008) pp. 499-512.
40. "An investigation of synchrony in transport networks," (with Natalia Alexandrov and Michael Holroyd) *Complexity* Volume 14, Number 4 (2009) pp. 34-43.
41. "Metaheuristics for Discrete Optimization," chapter (60 pages) in Operations Research Methodologies A. Ravi Ravindran (ed.), CRC Press, Taylor and Francis, November, 2008. ISBN: 9781420091823 a
42. "Exploiting Structure: Trees and Treelike Graphs," chapter 14 in Foundations of Location Analysis, H. A. Eiselt and V. Marianov (eds.), Berlin: Springer-Verlag, 2011. ISBN: 9781441975713
43. "Toward Optimal Transport Networks," (with N. Alexandrov and E.P. Vargo) *Journal of Systemics, Cybernetics and Informatics*, Volume 8, Number 4 (2010) pp. 59-64. An invited submission based on the conference paper with the same title. The journal paper has 20% new material.
44. "A Runway Configuration Management Model with Marginally Decreasing Transition Capacities," (with C. Weld and M. Duarte), *Advances in Operations Research* vol. 2010, Article ID 436765, 21 pages, 2010. doi:10.1155/2010/436765.
45. "Network Topology Measures," (with D. Phillips) invited paper for *Wiley Interdisciplinary Reviews: Computational Statistics - Operations research computations* Volume 3, Issue 6, pages 557565, November/December 2011.
46. "A Minimax Network Flow Model for Assessing Air Traffic Congestion Impacts," Lee, Douglas; Patek, Stephen; Alexandrov, Natalia; Bass, Ellen; Kincaid, Rex, *Journal of Guidance, Control, and Dynamics*, Volume 35, Number 5, pages 1616-1624, September/October 2012.
47. "Robust Optimization for Runway Configuration Management," (with R. Zhang) Applied Optimization & Computing. Special Issue International J. of Operations Research and Information Systems Vol. 5, No. 3 Juan, A.; Faulin, J.; Bektas, T.; Mendez, C. (eds.) 5(3), 1-26, July-September, 2014 (indexed in DBLP) ISSN: 1947-9328.
48. "Algorithm and complexity results for finding graphs with extremal Randic index," (with S. Kunkler, M.D. Lamar and D. Phillips) *Networks*. Vol. 67, Issue 4, July 2016, pp. 338-347.
`http://arxiv.org/abs/1307.0905`
49. "Network Sampling Algorithms and Applications" (with M.D. Lamar) chapter 11 (pages 325-354) in *Quantitative Graph Theory: Mathematical Foundations and Applications* edited by Professor Dehmer and Professor Emmert-Strib, Taylor and Francis, 2015. ISBN 978-1-46-658451-8
50. "Optimal open-locating-dominating sets in infinite triangular grids," (with Allison Oldham, Gexin Yu) *Discrete Applied Mathematics*, Volume 193, pp. 139-144, 2015; `http://arxiv.org/abs/1403.7061`.
51. "Open Locating-Dominating Sets in Circulant Graphs," (with Robin Givens and Gexin Yu)*Discussiones Mathematicae Graph Theory*, **42**, pp. 47-62, 2022. `https://doi.org/10.7151/dmgt.2235`
52. "Heuristics for Mixed Strength Sensor Location Problems," (with Robin M. Givens) *International Journal of Operations Research and Information Systems (IJORIS)* Volume 11(2), 2020. (13 pages) `DOI: 10.4018/IJORIS.2020040104`
53. "Mixed Weight Locating-Dominating Formulations and Their Use to Monitor Teriorst Networks," (with D. Blair Sweigart) *Military Operations Research Journal*, Volume 27(2), pp. 5-24, 2022.
54. "Simulated Annealing," (with A. Ninh) book chapter in *Discrete Diversity and Dispersion Optimization*, Rafi Marti and Anna Martnez-Gavara (editors) July 2023 (25 pages). DOI: 10.1007/978-3-031-38310-6_10

Technical Reports, Unrefereed Proceedings, and Working Papers

1. Multilevel Control and Optimization of Future Air Traffic Systems via Management of Complexity Bounds, (with Alexandrov, N., Kincaid, R., Thorne, J., Zinn, M. and Webb, K.) NASA/TM-2014-XXXXXX, NASA Technical Memorandum–in review 2014.
2. "Computational Modeling for Runway Configuration Management," (with M. Duarte, M. Haines, J. Thorne, C. Weld, and R. Zhang), *High Performance Computing Applications Highlights*, (summarizing my 3 year project on optimization models for runway configuration management) College of William & Mary, 2012. `http://www.hpc.wm.edu/SciClone/AppHighlights`
3. "A Minimax Network Flow Model for Characterizing the Impact of Slot Restrictions," (with Lee, Douglas; Patek, Stephen; Alexandrov, Natalia and Bass, Ellen) NASA Technical Memorandum NASA/TM2010-216207 (28 pages).
4. "An Investigation of Synchrony in Transport Networks," (with Natalia Alexandrov) NASA/TM-2007-214855.
5. "An Atypical $(\mu + \mu)$ Evolutionary Algorithm," (with M. Weber and J. Sobieski) NASA technical memorandum (2004).
6. "Scale-free Graphs for General Aviation Flight Schedules," NASA technical memorandum (2003) November, NASA/CR-2003-212648. (http://techreports.larc.nasa.gov/ltrs/ltrs.html)
7. "Reactive Tabu Search for Location Problems in Quelling Cabin Noise in Turboprop Aircraft," *Proceedings of the 2nd International Conference on Metaheuristics,* Sophia Antipolis, France, July 21-24, 1997.
8. "Location Problems Arising in Active Sound and Vibration Control of Cylinders," in Proceedings of 43rd North American Meetings of the Regional Science Association International, November 1996.
9. "Actuator Placement for Active Sound and Vibration Control of Cylinders," in NASA Contractor Report 198210, 85, 1995.
10. "Aerospace Applications of Integer and Combinatorial Optimization," (with S.L. Padula) NASA Technical Memorandum 110210, 1995.
11. "The Molecular Matching Problem," in NASA Contractor Report 191544, 120-122, 1993.
12. "The Damper Placement Problem for Large Flexible Space Structures," in NASA Contractor Report 189691, 133-135, 1992.
13. "Material Handling Design for Flexible Manufacturing System: A Network Approach," (with O. Maimon) working paper.
14. "Minimizing Distortion in Truss Structures via Tabu Search," in NASA Contractor Report 182092, 71-72, 1990.
15. "Location of a Point That Minimizes the Variance Equity Measure on Triangular Graphs," (with O. Maimon) College of William and Mary, Department of Mathematics, 1987, Technical Report #89.10.
16. "Minimizing Distortion and Internal Forces in Truss Structures by Simulated Annealing," in NASA Contractor Report 181894, 95-102, 1989.
17. "Quasi-Efficiency and The Theory of Vector Maximization", (with T.J. Lowe and T.L. Morin) Research Memorandum Series 86-15, School of Industrial Engineering, Purdue University, West Lafayette, IN 47907.
18. "Finding Two-Centers of Graphs That Are Almost Trees," working paper (1986).

Invited and Contributed Talks

1. "Relationships Between Efficient and Quasi-Efficient Solutions to Vector Maximization Problems", Mathematics Department Colloquium, College of William and Mary, December 1985.

2. "An Interactive Approach to Network Location Problems", ASEE 20th Annual Meeting, Columbia, MO., March, 1985.

*3. "Relationships Between Efficient and Quasi-Efficient Solutions to Vector Maximization Problems", NASA Langley Research Center, January 1986.

4. "An Investigation into the Method of Karmarkar", (with C.M. Klein) Northeast AIDS, Williamsburg, VA., March, 1986.

5. "Locating Absolute Centers on Treelike Graphs: A Transformation Approach", TIMS/ORSA Joint National Meeting, Los Angeles, CA., April 1986.

*6. "Is Karmarkar's Algorithm 50 Times Faster Than the Simplex Method", Systems Engineering Department Colloquium, University of Virginia, September, 1986.

*7. "Is Karmarkar's Algorithm 50 Times Faster Than the Simplex Method", Department of Mathematics and School of Business Joint Colloquium, Virginia Commonwealth University, April 1987.

*8. "Central Structure Location Problems," (with O. Maimon), TIMS/ORSA Joint National Meeting, St. Louis, MO., October 1987.

*9. "Research Directions in Location Theory," Decisions Sciences Institute National Meeting, Boston, MA., November 1987.

10. "Two Centers of Graphs That Are Almost Trees", TIMS/ORSA Joint National Meeting, New Orleans, LA., May 1987.

11. "The Vertex of Minimum Variance of 3-Cactus Graphs", (with O. Maimon) TIMS/ ORSA Joint National Meeting, New Orleans, LA., May 1987.

12. "The Point of Minimum Variance on 3-Cactus Graphs", (with O. Maimon) International Symposium on Locational Decisions, Namur, Belgium, June 1987.

13. "Network Algorithms for a Processor Scheduling Problem," (with D. Shier and D. Nicol) TIMS/ORSA Joint National Meeting, Denver, CO., October 1988.

14. "Locating Mobile Servers on a Congested Network: A Simulation Analysis," (with K. Miller and S. Park) Conference on the Impact of Recent Computer Advances on Operations Research, Williamsburg, VA., January, 1989.

15. "Locating Mobile Servers on a Congested Network: A Simulation Analysis," (with K. Miller and S. Park) Mathematics Department Colloquium, College of William and Mary, January 17, 1989.

*16. "Optimization Models and Simulation Analysis: A Friendly Juxtaposition," Systems Engineering Department Colloquium, University of Virginia, February, 1989.

17. "The Design of Material Handling Systems for Flexible Manufacturing Systems," (with C.M. Klein) Presented at the 20th Annual Modeling and Simulation Conference, Pittsburgh, PA., May, 1989.

18. "Modeling Uncertainties in Coverage Models: Approaches and Validation," (with S. Chaudhry, R. Batta, and N.N. Krishnamurthy) CORS/TIMS/ORSA Joint National Meeting, Vancouver, Canada, May 1989.

19. "Solving Problems in Engineering Design by Discrete Optimization," Interdisciplinary Research Office, NASA Langley Research Center, Hampton, VA., May, 1989.

20. "Minimizing Distortion and Internal Forces in Truss Structures by Simulated Annealing," Interdisciplinary Research Office, NASA Langley Research Center, Hampton, VA., July, 1989.

*21. "Location Problems in Flexible Space Structures," TIMS/ORSA Joint National Meeting, New York, NY., October 1989.

*22. "Discrete Optimization Problems in Engineering Design," Department of Mathematics and Computer Science, Hampden–Sydney College, VA., April, 1990.

23. "Analysis of Discrete Obnoxious Location Problems," (with C.M. Klein) International Symposium on Locational Decisions, Fullerton, CA., June 1990.
24. "Minimizing Distortion in a Tetrahedral Truss Structure: Simulated Annealing versus Tabu Search," Interdisciplinary Research Office, NASA Langley Research Center, Hampton, VA., August, 1990.
25. "Minimizing Distortion in Truss Structures via Simulated Annealing and Tabu Search," TIMS/ORSA Joint National Meeting, Nashville, TN., May 1991.
26. "Simulation Analysis of Mobile Servers on a Congested Network," (with S.Park, K.Miller, S.Harvey) ORSA/CSTS Computer Science and Operations Research: New Developments in their Interfaces, Williamsburg, VA, January 1992.
27. "Locating Dampers on a Flexible Space Structure," (with R. Berger) TIMS/ORSA Joint National Meeting, Orlando, FL, April 1992.
28. "The p-dispersion-sum problem on Trees and Graphs" (with L. Yellin) TIMS/ORSA Joint National Meeting, Orlando, FL, April 1992.

*29. "Combinatorial Optimization Problems and Space Applications," Governor's School held at The College of William and Mary, Williamsburg, VA, July 1992.

30. "Discrete Optimization Techniques for the Damper Placement Problem in Large Flexible Space Structures," IRO/Structural Dynamics Division, NASA-Langley Research Center, Hampton, VA, July 1992.
31. "Heuristic Search and the Damper Placement Problem in Large Flexible Space Structures," School of Industrial Engineering, Purdue University, West Lafayette, IN, October 1992.
32. "Placement of Structural Dampers on Large Truss Structures," (with R. Berger) 39th North American Meeting of the RSAI, Chicago, IL, November 1992.
33. "Research Program Summary Presentation for IE697: Purdue Graduate Student Colloquium," Purdue University, West Lafayette, IN, January 19, 1993.
34. "Optimization Models and the Space Station Freedom," DePauw University, Greencastle, IN, March 1, 1993.
35. "Discrete Optimization Models for the Placement of Active and Passive Dampers on the Space Station Freedom," School of Industrial Engineering, University of Missouri, Columbia, MO, March 12, 1993.

*36. "Choosing the Correct Design Mode and Placement of Passive Dampers on Large Space Structures," CSTS sponsored session on heuristic search at TIMS/ORSA Joint National Meeting, Chicago, IL, May 1993.

*37. "Combinatorial Optimization Problems in the Life Sciences," Governor's School held at The College of William and Mary, Williamsburg, VA, July 2, 1993.

38. "Using Tabu Search to Determine the Number of Kanbans and Lotsizes in a Generic Kanban System," (with A. Martin, T. Chang, and Y. Yih) Symposium on Business Applications of Artificial Intelligence, McIntire School of Commerce, University of Virginia, Charlottesville, VA, November, 1993.
39. "The Molecular Matching Problem," ORSA/CSTS Conference: The Impact of Emerging Technology on Computer Science and Operations Research, Williamsburg, VA, January 1994.
40. "On-line Scheduling Algorithms," (with W. Mao and A. Rifkin) ORSA/CSTS Conference: The Impact of Emerging Technology on Computer Science and Operations Research, Williamsburg, VA, January 1994.
41. "Tabu Search and Combinatorial Optimization," Computer Science Department Colloquium, The College of William and Mary, February 1994.
42. "Heuristic Search Techniques for the Polymer Straightening Problem," (with A. Martin) TIMS/ORSA Joint National Meeting, Boston, MA, April 1994.
43. "Combinatorial Optimization," Governor's School held at The College of William and Mary, Williamsburg, VA, July 1994.

44. "Combinatorial Optimization," Governor's School held at The College of William and Mary, Williamsburg, VA , July 20, 1995.
*45. "Aerospace Applications of Integer and Combinatorial Optimization," (with S.L. Padula) invited presentation for the SIAM Annual Meeting, Charlotte, NC, October 1995.
46. "Actuator Placement for Active Sound and Vibration Control of Cylinders," InfORMS/CSTS conference on Computer Science and Operations Research: Recent Advances in the Interface, Dallas,TX, January 7-10, 1996.
47. "Actuator Placement for Active Sound Control of Commuter Jets," (with Keith E. Laba) InfORMS National Meeting, Washington DC, May 5, 1996.
48. "Location Problems in Active Sound and Vibration Control of Cylinders," ISOLDE VII, Edmonton, Alberta (CANADA) June 27, 1996.
49. "Application of a Tabu Search Heuristic on the Problem of Active Structural Acoustic Control," (with K.E. Laba and S.L. Padula) Interior Noise Workshop, NASA Langley Research Center, Sept. 10-12,1996.
50. "Location Problems Arising in Active Sound and Vibration Control of Cylinders," 43rd North American Meetings of the Regional Science Association International, November 14-17, 1996 Arlington, VA.
*51. "Optimization Modeling in Active Sound and Vibration Control of Propeller Driven Aircraft," Virginia State University, November 21, 1996.
*52. "Location Problems Arising in Active Sound and Vibration Control of Cylinders," Systems Engineering Department, U. of Virginia, Charlottesville, VA, Februrary 7, 1997.
53. "Reactive Tabu Search for Location Problems in Quelling Cabin Noise in Turboprop Aircraft," 2nd International Conference on Metaheuristics, Sophia Antipolis, France, July 21-24, 1997.
54. "Actuator Selection for Control of Aircraft Interior Noise," Multi-Disciplinary Optimization Branch, NASA Langley Research Center, July 31, 1997.
*55. "Actuator/Sensor Placement for Active Sound and Vibration Control in Turboprop Aircraft," Mechanical Engineering Graduate Seminar, Old Dominion University, October 10, 1997.
56. "Location Problems Arising in Active Sound and Vibration Control of Cylinders," INFORMS National Meeting, Dallas, TX, October 26-29, 1997.
57. "Tabu Search for Sensor/Actuator Location Problems for Active Noise Control," Sixth INFORMS CSTS Conference–Computer Science and Operations Research: Recent Advances in the Interface, January 7-9, 1998, Monterey, California.
58 "Application of Scaled COSA to a Protein Folding Problem" (with M. Fleischer) presented at Informs Cincinnati Meeting, May 4, 1999.
59. "Bell-Curve Based Evolutionary Optimization for Structural Optimization' (with M. Weber and J. Sobieszczanski-Sobieski) presented at Informs Cincinnati Meeting, May 4, 1999.
60. "Tabu Search and the Polymer Straightening Problem" (with D. Evans and J. Hinkley) presented at Informs Cincinnati Meeting, May 4, 1999.
61. "Actuator Placement for Gust and Turbulence Control of Aircraft" (with S. Padula) presented at Informs Cincinnati Meeting, May 4, 1999.
62. "Sensor and Actuator Locations Problems," (with S. Padula) presented at the 8th International Symposium On Locational Decisions in Coimbra, Portugal, June 23-30, 1999.
63. "Sensor and Actuator Placement Problems," presented in an invited session at the International Symposium on Combinatorial Optimization (CO2000) held at U. of Greenwich, London, U.K., July 12-14, 2000.
64. "An Atypical Evolutionary Algorithm for Structural Optimization," presented at the Informs National meeting San Antonio, TX, November 4-8, 2000.

64. "Computational Experience with an Evolutionary Search Procedure for MINLPs in Structural Optimization," (with Ruth Sykes) InfORMS National Meeting, Miami, FL, Novemeber 3-7, 2001 (session sponsored by the InfORMS Society on Computing).
65. "Pitfalls of Mathematical Modelling," Atmospheric Sciences Data Center seminar series, NASA-Langley Research Center, June 5, 2002.
66. "Approximate Solutions to the Continuous p-Dispersion Problem via Nonlinear Optimization," (with M. Trosset and A. Dimnaku) Ninth International Symposium on Locational Decisions, New Brunswick, Canada, June 13-18, 2002.
67. "Metaheuristics for Discrete and Continuous Optmization Problems," Atmospheric Sciences Data Center seminar series, NASA-Langley Research Center, July 29, 2002.
68. "Scheduling Theory and the Data Production Problem at ASDC," Atmospheric Sciences Data Center seminar series, NASA-Langley Research Center, July 31, 2002.
69. "Bell-Curve Based Optimization for Mixed Continuous and Discrete Structural Optimization Problems," (with M. Griffith, R. Sykes and J. Sobieski) presented at the *44th AIAA Structures, Structural Dynamics, and Materials Conference*, April 7-10, 2003, Norfolk, VA.
70. "Computational Experiments with the Maximal Expected Species Covering Model for Nature Reserve Site Selection," (with M. Jeske and C. Easterling) 50th Regional Science Association International Meeting, November 20-22, 2003, Philadelphia, PA..
71. "Scale-free networks: what are they and why are they important?" Multi-Disciplinary Optimization Branch, NASA-Langley Research Center, July 25, 2003.
72. "Formation of Scale-free networks: A Discrete-Event Simulation Approach," Multi-Disciplinary Optimization Branch, NASA-Langley Research Center, July 30, 2004.
73. "Computational Experiments Exploring the How and Why of Scale-Free Networks," Informs Computing Society Conference, January 5-7, 2005, Annapolis, MD.
74. "Computational Experiments with Heuristics for Two Nature Reserve Site Selection Problems," Informs Computing Society Conference, January 5-7, 2005, Annapolis, MD.
75. "Computational Experiments with Heuristics for Two Nature Reserve Site Selection Problems," Institute of Integrative Bird Behavior Studies, The College of William and Mary, March 30, 2005.
76. "Scale-Free Networks: A Discrete Event Simulation Approach," 5th International Conference on Computational Science, May 22-25, 2005, Atlanta, GA.
77. "Evaluating the Performance of Air Transport Networks," Aeronautics Systems Analysis Branch, NASA Langely Research Center. August 8, 2005

*78. "Evaluating the Performance of Air Transport Networks," NASA Peer Review of Systems Analysis Directorate, October 26, 2005, NASA Langely Research Center.

*79. "Evaluating the Performance of Air Transport Networks," Systems Engineering Department Colloquium, University of Virginia, October 28, 2005.

80. "Scale-Free Networks: A Discrete Event Simulation Approach," Informs National meeting, Nov. 13-16, 2005, San Francisco, CA.
81. "Design and Evaluation of Air Transport Networks," Aeronautics Systems Analysis Branch, NASA Langely Research Center. August 7, 2006
82. "Synchronization of Networks for Discrete Complex Systems," Informs National meeting, Nov. 5-8, 2006, Pittsburgh, PA.
83. "Airtransport Network Design", Spring Simulation Multiconference, Sponsored by Society for Modeling and Simulation International and ACM/SIGSIM March 25-28, 2007, Norfolk, VA.

84. "Space Allocation Optimization at NASA-LaRC," 7th Metaheuristics International Conference, June 25-29, 2007, Montreal, Canada.
*85. "Probing the Effects of Synchrony on the Structure of Air Transport Networks," 18th International symposium on Mathematical Theory of Networks and Systems (MTNS2008), July 28 – August 1, 2008.
*86. "Topological Considerations for Air Transport Networks," Informs National meeting, Oct. 12-15, 2008, Washington, D.C. (invited session).
87. "Design and Evaluation of Transport Networks," *Location and Network Design Workshop*, Pucon, Chile, March 22-25, 2009.
88. "Computational Operations Research at NASA Langely Research Center," CSUMS, Department of Mathematics, College of William & Mary, July 15, 2009.
*89. "Metaheuristics for Discrete Optimization Problems," Department of Mathematics and Statistics, Old Dominion University, Sponsored by the ODU Mathematics/Statistics Club/SIAM Student Chapter, October 6, 2009.
*90. "Active Design of Air Transport Networks," *Optimization for Logistics Planning Workshop* October 10, 2009, Sponsored by the UC Davis Graduate School of Management. Part of the 2009-2010 VIGRE Focus on Optimization at UC Davis.
91. "Discrete Optimization Problems at NASA Langely Research Center," CSUMS, Department of Mathematics, College of William & Mary, March 3, 2010.
92. "Optimization Models for Runway Configuration Management," (with M. Haines, J. Thorne, and R. Zhang) INFORMS Computing Society conference, Monterey, CA, January 9-11, 2011.
93. "Design and Evaluation of Transport Networks," CSUMS, Department of Mathematics, College of William & Mary, June 14, 2011.
*94. "Optimization Models for Runway Configuration Management," (with R. Zhang) MOPTA (Modeling and Optimization: Theory and Applications), Lehigh University, Bethlehem, PA, August 18, 2011.
95. "Robust Optimization for Runway Configuration Management," (with Rui Zhang) AIAA-ATIO conference, Virginia Beach, VA, September 20-22, 2011.
96. "Robust Optimization for Runway Configuration Management," (with Rui Zhang) Informs National Meeting, Charlotte, NC, November 13-16, 2011.
*97. "Experience with Discrete Optimization Models at NASA," Aeronautics Systems Engineering Branch, NASA Langley Research Center, March 7, 2012.
98. "Three Optimization Models for Runway Configuration Management," CSUMS talk, College of William & Mary, June 21, 2012.
*99. "Discrete Optimization Problems at NASA Langley Research Center," Rose-Hulman Institute of Technology, Department of Mathematics, September 12, 2012.
100. "Heuristic Search for Tactical Runway Configuration Management," AIAA Aviation Technology, Integeration, and Opertaions Conference, September 17-19, 2012, Indianapolis, IN.
101. "Algorithm and Complexity for a Network Assortativity Measure," (with S. Kunkler, M.D. Lamar and D. Phillips) Informs Computing Society conference, Sante Fe, NM, January 6-8, 2013.
102. "Text Mining for Bird Strikes and Geocoding," (with D. Oberle and M. Elliot) Informs Computing Society conference, Richmond, VA, January 11-13, 2015. (Session Chair)
*103. "Text Mining for Bird Strikes and Geocoding," (with D. Oberle and M. Elliot) NASA Langely Research Center, Hampton, VA, March 4, 2015.
104. "Homogeneous and Mixed Weight Open Locating-Dominating Sets," (talk given by D. Blair Sweigart) *International Symposium on Locational Decisions, ISOLDE XIV*, Ontario, CANADA, July 9-12, 2017.
105. "Tabu Search for a Mixed Strength Sensor Location Problem," (with Robin M. Givens) *MODSIM World Conference*, Norfolk, VA, April 22-24, 2019.

106. "Optimization and Open Locating Dominating Sets," (with Robin M. Givens and D. Blair Sweigart) InfORMS Annual Meeting, October 20-23, 2019, Seattle, WA.
107. "Locating Dominating Sets for Criminal Network Modeling," (talk given by D. Blair Sweigart) InfORMS Annual Meeting, October 20-23, 2019, Seattle, WA.
108. "Optimization Models for Sensor Location Problems," Applied Mathematics Seminar, William & Mary, November 6, 2019.
109. "Analysis of Centralized and Distributed Air Traffic Management," (with Logan Wolf and Cameron Curtis) InfORMS Annual Meeting, October 16-19, 2022, Indianapolis, IN. (*) denotes an invited talk

Other Conferences

Attended ESRI International User Conference, June 18-22, 2007, San Diego, CA.
Attended AMS-SIAM conference on "The Mathematics of Stochastic Manufacturing Systems, Williamsburg, VA, June 17-21, 1996.
Attended "NASA/Air Force Symposium on Recent Experiences in Multidisciplinary Analysis and Optimization," Hampton, VA., September 1988.
Attended "3rd SIAM Conference on Discrete Mathematics," Clemson, SC., May 1986.
Attended "TIMS/ORSA Applied Probability Conference," Williamsburg, VA., Jan. 1985.