CURRICULUM VITAE

**J. COLE SMITH**

Dean, College of Engineering and Computer Science

Professor of Electrical Engineering and Computer Science

Syracuse University

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**EDUCATION**

 B.S., Mathematical Sciences (emphasis in Computer Science), Clemson University, Clemson, S.C., 1996.

 Ph.D., Industrial and Systems Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, 2000. Dissertation: “Tight Discrete Formulations to Enhance Solvability with Applications to Production, Telecommunication, and Air Transportation Problems.”

**EMPLOYMENT**

2019 – present: *Dean*, College of Engineering and Computer Science, Syracuse University.

2018 – 2019: *Associate Provost for Academic Initiatives*, Clemson University.

2014 – 2018: *Professor and Chair*, Industrial Engineering, Clemson University.

2013 – 2014: *Professor and Interim Chair*, Industrial and Systems Engineering, University of Florida.

2010 – 2013: *Professor* (with tenure), Industrial and Systems Engineering, University of Florida.

2005 – 2010: *Associate Professor* (with tenure), Industrial and Systems Engineering, University of Florida.

2005 – 2006: *Associate Professor* (with tenure, on leave), Systems and Industrial Engineering, University of Arizona.

2000 – 2005: *Assistant Professor*, Systems and Industrial Engineering, University of Arizona.

**HONORS AND AWARDS**

2019 Member, Academy of Distinguished Alumni for the Grado Department of Industrial and Systems Engineering at Virginia Tech

 2018 Fellow, Institute of Industrial and Systems Engineers

 2014 Glover-Klingman Prize for Best Paper in *Networks* (Sullivan and Smith, 2014)

 2011 IERC Best Operations Research Track Paper Award

 2010 Hamed K. Eldin Outstanding Young Industrial Engineer in Education Award

 2009 IIE Operations Research Division Teaching Award

 2008 IERC Best Logistics and Inventory Track Paper Award

 2007 *IIE Transactions* Best Paper award (Lim and Smith, 2007)

 Honorable Mention, 2003 Junior Faculty INFORMS Group (JFIG) Best Paper Award

 Recipient of a Young Investigator Award by the Office of Naval Research, 2002

 SIE Faculty/Student Interface Excellence Award, 2002, 2003, 2004, 2005

**Student awards:**

First place, 2001 Pritsker Doctoral Dissertation Award, awarded by the Institute of Industrial Engineers

First place, Paul Torgersen Graduate Research Award for Most Outstanding Engineering Dissertation at Virginia Tech

 Cunningham Fellow at Virginia Tech, 1997-2000

1996 Samuel Maner Martin Award for Outstanding Senior in Mathematics at Clemson

 1995 Sue King Dunkle Award for Outstanding Junior in Mathematics at Clemson

**PROFESSIONAL SOCIETIES**

The Institute for Operations Research and the Management Sciences (INFORMS)

 The Institute of Industrial and Systems Engineers (IISE)

 Mathematical Optimization Society (MOS)

**EDITORIAL BOARD**

 **Focused Issue Editor**

 *IISE Transactions (Operations Engineering and Analytics)* (2018 – 2022)

**Series Editor-in-Chief**

*TutORials in Operations Research* (2012 – 2017)

 **Area/Department Editor**

 *IISE Transactions* (2009 – 2018)

 *OMEGA* (2008 – 2012)

*Encyclopedia of Operations Research and Management Science*, (2011 – current)

 **Associate Editor**

 *Operations Research* (2008 – current)

 *Networks* (2005 – current)

 *Optimization Letters* (2006 – current)

 *Journal of Global Optimization* (2005 – 2012)

 *Journal of Problem Solving* (2006 – 2018)

 *IIE Transactions* (2006 – 2008)

 *OMEGA* (2006 – 2008)

**Guest Editor:**

*Networks*, Special Issue on Games, Interdiction, and Human Interaction Problems on Networks, vol 52, no 3, 2008.

*Journal of Global Optimization*, Special Issue Honoring the Career of Dr. Hanif D. Sherali, vol 66, no 2, 2016.

*Networks*, with Raghu Raghavan, Special Issue on the 50th Anniversary of *Networks*, 2021.

**PUBLICATIONS**

*Edited Books*

[1] Smith, J.C. (ed.), *TutORials in Operations Research*, Institute for Operations Research and the Management Sciences, Hanover, MD, 2005.

[2] Kugler, T., Smith, J.C., Connolly, T., and Son, Y.-J. (eds.), *Decision Modeling and Behavior in Uncertain and Complex Environments*, Springer, New York, NY, 2008.

 *Papers Accepted or in Print*

[1] Sherali, H.D., Smith, J.C., and Adams, W.P., “Reduced First-Level Representations Via the Reformulation-Linearization Technique: Results, Counter-Examples, and Computations,” *Discrete Applied Mathematics*, 101(1), 247-267, 2000.

[2] Sherali, H.D., Smith, J.C., and Lee, Y., “Enhanced Model Representations for an Intra-Ring Synchronous Optical Network Design Problem Allowing Demand Splitting,” *INFORMS Journal on Computing*, 12(4), 284-298, 2000.

[3] Sherali, H.D., Smith, J.C., Trani, A.A., and Sale, S., “National Airspace Sector Occupancy and Conflict Analysis Models for Evaluating Scenarios Under the Free-Flight Paradigm,” *Transportation Science*, 34, 321-336, 2000.

[4] Sherali, H.D., Smith, J.C., and Selim, S.Z., “Convex Hull Representations of Models for Computing Collisions Between Multiple Bodies,” *European Journal of Operational Research*, 135(3), 514-526, 2001.

[5] Sherali, H.D., Smith, J.C., “Improving Zero-One Model Representations Via Symmetry Considerations,” *Management Science*, 47(10), 1396-1407, 2001.

[6] Sherali, H.D., Smith, J.C., and Trani, A.A., “An Airspace Planning Model for Selecting Flight-Plans Under Workload, Safety, and Equity Considerations,” *Transportation Science*, 36(4), 378-397, 2002.

[7] Smith, J.C., “A Genetic Algorithm Approach to Solving a Multiple Inventory Loading Problem,” *International Journal of Industrial Engineering*, 10(1), 7-16, 2003.

[8] Baker, K. and Smith, J.C., “A Multiple-Criterion Model for Machine Scheduling,” *Journal of Scheduling*, 6, 7-16, 2003.

[9] Smith, J.C., “Algorithms for Distributing Telecommunication Traffic on a Multiple-Ring SONET-based Network,” *European Journal of Operational Research*, 154(3), 659-672, 2004.

[10] Elshafei, M., Sherali, H.D., and Smith, J.C., “Radar pulse interleaving for multi-target tracking,” *Naval Research Logistics*, 51(1), 72-94, 2004.

[11] Smith, J.C., Schaefer, A., and Yen, J., “A Stochastic Integer Programming Approach to Solving a Synchronous Optical Network Ring Design Problem,” *Networks*, 44(1), 12-26, 2004.

[12] Mofya, E.C. and Smith, J.C., “The Optimal Deployment of Filters to Limit Forged Address Attacks in Communication Networks,” *Lecture Notes on Computer Science*, 3073, 239-251, 2004.

[13] Smith, J.C. and Jacobson, S.J., “An Analysis of the Alias Method for Discrete Random-Variate Generation,” *INFORMS Journal on Computing*, 17(3), 321-327, 2005.

[14] Lunday, B.J., Smith, J.C., and Goldberg, J.B., “Algorithms for Solving the Conditional Covering Problem on Paths,” *Naval Research Logistics*, 52(4), 293-301, 2005.

[15] Sherali, H.D. and Smith, J.C., “A Class of Web-Based Facets for the Generalized Vertex Packing Problem,” *Discrete Applied Mathematics*, 146(3), 273-286, 2005.

[16] Horne, J.A. and Smith, J.C., “A Dynamic Programming Algorithm for the Conditional Covering Problem on Tree Graphs,” *Networks*, 46(4), 186-197, 2005.

[17] Horne, J.A. and Smith, J.C., “Dynamic Programming Algorithms for the Conditional Covering Problem on Path and Extended Star Graphs,” *Networks*, 46(4), 177-185, 2005.

[18] Sherali, H.D. and Smith, J.C., “Interleaving Two-Phased Jobs on a Single Machine with Application to Radar Pulse Interleaving,” *Discrete Optimization*, 2(4), 348-361, 2005.

[19] Lim, C., Bearden, J.N., and Smith, J.C., “Sequential Search with Multi-Attribute Options,” *Decision Analysis*, 3(1), 3-15, 2006.

[20] Sherali, H.D. and Smith, J.C., “A Polyhedral Study of the Generalized Vertex Packing Problem,” *Mathematical Programming*, 107(3), 367-390, 2006.

[21] Smith, J.C., Fraticelli, B.M.P, and Rainwater, C., “A Bracket Assignment Problem for the NCAA Men’s Basketball Tournament,” *International Transactions in Operational Research*, 13(3), 253-271, 2006.

[22]   Mofya, E.C. and Smith, J.C., “Exact and Heuristic Algorithms for Solving the Generalized Minimum Filter Placement Problem,” *Journal of Combinatorial Optimization*, 12(3), 231-256, 2006.

[23]   Armbruster, B., Smith, J.C., and Park, K., “The Optimization of Packet Filter Placements to Combat Distributed Denial of Service Attacks,” *European Journal of Operational Research*, 176(2), 1283-1292, 2007.

[24]   Lim, C. and Smith, J.C., “Algorithms for Discrete and Continuous Multicommodity Flow Network Interdiction Problems,” *IIE Transactions*, 39(1), 15-26, 2007.

[25]   Sherali, H.D. and Smith, J.C., “An Improved Linearization Strategy for Zero-One Quadratic Programming Problems,” *Optimization Letters*, 1(1), 33-47, 2007.

[26]   Smith, J.C., Lim, C., and Bearden, J.N., “On the Optimality of a Threshold Policy for a Multi-attribute Stopping Problem with General Value Functions,” *Operations Research Letters*, 35(3), 324-330, 2007.

[27]   Smith, J.C., Lim, C., and Sudargho, F., “Survivable Network Design Under Optimal and Heuristic Interdiction Scenarios,” *Journal of Global Optimization*, 38(2), 181-199, 2007.

[28]   Smith, C.M., Smith, J.C., Williams, S.K., Rodriguez, J.J., and Hoying, J.B., “Accurate Volumetric Measurements of Vasculature Using Confocal Microscopy and Image Processing,” *Journal of Microscopy*, 225(3), 244-257, 2007.

[29] Ragle, M.A., Smith, J.C., and Pardalos, P.M., “An Optimal Cutting-Plane Algorithm for Solving the Non-Unique Probe Selection Problem,” *Annals of Biomedical Engineering*, 35(11), 2023-2030, 2007.

[30] Garg, M. and Smith, J.C., “Models and Algorithms for the Design of Survivable Networks with General Failure Scenarios,” *Omega*, 36(6), 1057-1071, 2008.

[31] Andreas, A.K., Smith, J.C., and Küçükyavuz, S., “A Branch-and-Price-and-Cut Algorithm for Solving the Reliable h-paths Problem,” *Journal of Global Optimization*, 42(4), 443-466, 2008.

[32] Andreas, A.K. and Smith, J.C., “Mathematical Programming Algorithms for Two-Path Routing Problems with Reliability Constraints,” *INFORMS Journal on Computing*, 20(4), 553-564, 2008.

[33] Lopes, L., Aronson, M., Carstensen, G., and Smith, J.C., “Optimization Support for Senior Design Project Assignments,” *Interfaces*, 38(6), 448-464, 2008.

[34] Andreas, A.K. and Smith, J.C., “Decomposition Algorithms for the Design of a Non-simultaneous Capacitated Evacuation Tree Network,” *Networks*, 53(2), 91-103, 2009.

[35] Smith, J.C., “Organization of a College Baseball Tournament,” *IMA Journal of Management Mathematics*, 20(2), 213-232, 2009.

[36] Smith, J.C., Henderson, D., Ortega, A., and DeVoe, J., “A Parameter Optimization Heuristic for a Temperature Estimation Model,” *Optimization and Engineering*, 10(1), 19-42, 2009.

[37] Mofya, E.C. and Smith, J.C., “Algorithms for the Generalized Minimum Filter Placement Problem on Tree Structures,” *INFORMS Journal on Computing*, 21(2), 322-332, 2009.

[38] Sherali, H.D. and Smith, J.C., “Two-Stage Stochastic Risk Threshold and Hierarchical Multiple Risk Problems: Models and Algorithms,” *Mathematical Programming*, 120(2), 403-427, 2009.

[39] Henderson, D. and Smith, J.C., “An Exact Reformulation-Linearization Technique Algorithm for Solving a Parameter Extraction Problem Arising in Compact Thermal Models,” *Optimization Methods and Software*, 24(4-5), 857-870, 2009.

[40] Taskin, Z.C., Smith, J.C., Ahmed, S., and Schaefer, A.J., “Cutting Plane Algorithms for Solving a Robust Edge-Partition Problem,” *Discrete Optimization*, 6, 420-435, 2009.

[41] Smith, J.C., Lim, C., and Alptekinoglu, A., “Optimal Mixed-Integer Programming and Heuristic Methods for a Bilevel Stackelberg Product Introduction Game,” *Naval Research Logistics*, 56(8), 714-729, 2009.

[42] Taskin, Z.C., Smith, J.C., Romeijn, H.E., and Dempsey, J.F., “Optimal Multileaf Collimator Leaf Sequencing in IMRT Treatment Planning,” *Operations Research*, 58(3), 674-690, 2010.

[43] Penuel, J., Smith, J.C., Yuan, Y., “An Integer Decomposition Algorithm for Solving a Two-Stage Facility Location Problem with Second-Stage Activation Costs,” *Naval Research Logistics*, 57(5), 391-402, 2010.

[44] Hartman, J.C., Büyüktahtakın, İ.E., and Smith, J.C., “Dynamic Programming Based Inequalities for the Capacitated Lot-Sizing Problem,” *IIE Transactions*, 42(12), 915-930, 2010.

[45] Shen, S., Smith, J.C., and Ahmed, S., “Expectation and Chance-constrained Models and Algorithms for Insuring Critical Paths,” *Management Science*, 56(10), 1794-1814, 2010.

[46] Hemmati, M. and Smith, J.C., “Finite Optimal Stopping Problems: The Seller’s Perspective,” *Journal of Problem Solving*, 3(2), 72-95, 2011.

[47] Behdani, B., Yun, Y., Smith, J.C., and Xia, Y., “Decomposition Algorithms for Maximizing the Lifetime of Wireless Sensor Networks with Mobile Sinks,” *Computers and Operations Research*, 39(5), 1054-1061, 2012.

[48] Sherali, H.D. and Smith, J.C., “Higher-Level RLT or Disjunctive Cuts Based on a Partial Enumeration Strategy for 0-1 Mixed-Integer Programs,” *Optimization Letters*, 6(1), 127-139, 2012.

[49] Taskın, Z.C., Smith, J.C., and Romeijn, H.E., “Mixed-Integer Programming Techniques for Decomposing IMRT Fluence Maps Using Rectangular Apertures,” *Annals of Operations Research*, 196(1), 799-818, 2012.

[50] Smith, J.C., Ulusal, E., and Hicks, I.V., “A Combinatorial Optimization Algorithm for Solving the Branchwidth Problem,” *Computational Optimization and Algorithms*, 51(3), 1211-1229, 2012.

[51] Sherali, H.D. and Smith, J.C., “Dynamic Lagrangian Dual and Reduced RLT Constructs for Solving 0-1 Mixed-Integer Programs,” *TOP*, 20(1), 173-189, 2012.

[52] Shen, S. and Smith, J.C., “Polynomial-Time Algorithms for Disconnecting Trees and Series-Parallel Graphs under Component Connectivity Metrics,” *Networks*, 60(2), 109-119, 2012.

[53] Tighe, P.J., Smith, J.C., Boezaart, A.P., and Lucas, S.D., “Social Network Analysis and Quantification of a Prototypical Regional Anesthesia and Perioperative Pain Medicine Service,” Pain Medicine, 13(6), 808-819, 2012.

[54] Shen, S., Smith, J.C., and Goli, R., “Exact Interdiction Models and Algorithms for Disconnecting Networks via Node Deletions,” Discrete Optimization, 9(3), 172-188, 2012.

[55] Penuel, J., Smith, J.C., and Shen, S., “Models and Complexity Analysis for the Graph Decontamination Problem with Mobile Agents,” *Networks*, 61(1), 1-19, 2013.

[56] Shen, S. and Smith, J.C., “A Decomposition Approach for Solving a Broadcast Domination Network Design Problem,” *Annals of Operations Research*, 210(1), 333-360, 2013.

[57] Prince, M., Smith, J.C., and Geunes, J., “Designing Fair 8- and 16-team Knockout Tournaments,” *IMA Journal of Management Mathematics*, 24(3), 321-336, 2013.

[58] Yun, Y., Xia, Y., Behdani, B., and Smith, J.C., “Distributed Algorithm for Lifetime Maximization in Delay-Tolerant Wireless Sensor Network with Mobile Sink,” IEEE Transactions on Mobile Computing, 12(10), 1920-1930, 2013.

[59] Behdani, B., Smith, J.C., and Xia, Y., “The Lifetime Maximization Problem in Wireless Sensor Networks with a Mobile Sink: MIP Formulations and Algorithms,” *IIE Transactions*, 45(10), 1094-1113, 2013.

[60] Prince, M., Smith, J.C., and Geunes, J., “A Three-Stage Procurement Optimization Problem Under Uncertainty,” Naval Research Logistics, 60(5), 395-412, 2013.

[61] Prince, M., Geunes, J., and Smith, J.C., “Procurement Allocation Planning with Multiple Suppliers under Competition,” *International Journal of Production Research,* 51(23-24), 6900-6922, 2013.

[62] Sullivan, K.M., Smith, J.C., and Morton, D.P., “Convex Hull Representation of the Deterministic Bipartite Network Interdiction Problem,” Mathematical Programming, 145(1-2), 349-376, 2014.

[63] Sullivan, K.M., Morton, D.P., Pan, F., and Smith, J.C., “Securing a Border under Asymmetric Information,” Naval Research Logistics, 61(2), 91-100, 2014.

[64] Tadayon, B. and Smith, J.C., “Algorithms for an Integer Multicommodity Network Flow Problem with Node Reliability Considerations,” *Journal of Optimization Theory and Applications*, 161(2), 506-532, 2014.

[65] Hemmati, M., Smith, J.C., and Thai, M.T., “A Cutting-plane Algorithm for Solving a Weighted Influence Interdiction Problem,” *Computational Optimization and Applications*, 57(1), 71-104, 2014.

[66] Buyuktahtakin, I.E., Smith, J.C., Hartman, J.C., and Luo, S., “Parallel Asset Replacement Problem under Economies of Scale with Multiple Challengers,” *The Engineering Economist*, 59(4), 237-258, 2014.

[67] Behdani, B. and Smith, J.C., “An Integer-Programming-Based Approach to the Close-Enough Traveling Salesman Problem,” *INFORMS Journal on Computing*, 26(3), 415-432, 2014.

[68] Sullivan, K.M. and Smith, J.C., “Exact Algorithms for Solving a Euclidean Maximum Flow Network Interdiction Problem,” *Networks*, 64(2), 109-124, 2014.

[69] Romich, A., Lan, G., and Smith, J.C., “Optimizing Placement of Stationary Monitors,” *IIE Transactions*, 47(6), 556-576, 2015.

[70] Tadayon, B. and Smith, J.C., “Algorithms and Complexity Analysis for Robust Single-Machine Scheduling Problems,” *Journal of Scheduling*, 18(6), 575-592, 2015.

[71] Buke, B., Smith, J.C., and Thomas, S.A., “On a Random Walk Reliability Problem with Arc Memory,” *Networks*, 66(1), 67-86, 2015.

[72] Acevedo, M.A., Sefair, J.A., Smith, J.C., and Fletcher, Jr., R. J., “Conservation with uncertainty: Identifying Protection Strategies under Worst-Case Disturbance Events,” *Journal of Applied Ecology*, 52(6), 1588-1597, 2015.

[73] Sonuc, S.B., Smith, J.C., and Hicks, I.V., “A Branch-and-Price-and-Cut Method for Computing an Optimal Bramble,” *Discrete Optimization*, 18, 168-188, 2015.

[74] Romich, A., Lan, G., and Smith, J.C., “A Robust Sensor Covering and Communication Problem,” *Naval Research Logistics*, 62(7), 582-594, 2015.

[75] Hemmati, M. and Smith, J.C., “A Mixed-Integer Bilevel Programming Approach for a Competitive Prioritized Set Covering Problem,” *Discrete Optimization*, 20, 105-134, 2016.

[76] Tang, Y., Richard, J.-P.P., and Smith, J.C., “A Class of Algorithms for Mixed-Integer Bilevel Min-Max Optimization,” *Journal of Global Optimization*, 66(2), 225-262, 2016.

[77] Sefair, J. and Smith, J.C., “Dynamic Shortest-Path Interdiction,” *Networks*, 68(4), 315-330, 2016.

[78] Curry, R.M. and Smith, J.C., “A Survey of Optimization Algorithms for Wireless Sensor Network Lifetime Maximization,” *Computers and Industrial Engineering*, 101, 145-166, 2016.

[79] Lozano, L. and Smith, J.C., “A Backward Sampling Framework for Interdiction Problems with Fortification,” *INFORMS Journal on Computing*, 29(1), 123-139, 2017.

[80] Lozano, L., Smith, J.C. and Kurz, M.E., “Solving the Traveling Salesman Problem with Interdiction and Fortification,” *Operations Research Letters*, 45(3), 210-216, 2017.

[81] Lozano, L. and Smith, J.C., “A Value-Function-Based Exact Approach for the Bilevel Mixed Integer Programming Problem,” *Operations Research*, 65(3), 768-786, 2017.

[82] Taskın, Z.C. and Smith, J.C., “Branch-Cut-Price Algorithms for Solving a Class of Search Problems on General Graphs,” *Networks*, 70(1), 4-18, 2017.

[83] Sefair, J. A., Smith, J.C., Acevedo, M.A., and Fletcher, Jr., R.J., “A Defender-Attacker Model and Algorithm for Maximizing Weighted Expected Hitting Time with Application to Conservation Planning,” *IISE Transactions*, 49(12), 1112-1128, 2017.

[84] Sefair, J. and Smith, J.C., “Exact Algorithms and Bounds for the Dynamic Assignment Interdiction Problem,” *Naval Research Logistics*, 64(5), 373-387, 2017.

[85] Buyuktahtakin, I.E., Smith, J.C., Hartman, J.C., “Partial Objective Inequalities for the Multi-Item Capacitated Lot-Sizing Problem,” *Computers and Operations Research*, 91, 132-144, 2018.

[86] Curry, R.M. and Smith, J.C., “Models and Algorithms for Semicontinuous Maximum Flow Problems,” *IISE Transactions*, 50(6), 484-498, 2018.

[87] Holzmann, T. and Smith, J.C., “A Solving Discrete Multi-objective Optimization Problems using Modified Augmented Weighted Tchebychev Scalarizations,” *European Journal of Operational Research*, 271(2), 436-449, 2018.

[88] Holzmann, T. and Smith, J.C., “The Shortest Path Interdiction Problem with Arc Improvement Recourse: A Multiobjective Approach,” *Naval Research Logistics*, 66(3), 230-252, 2019.

[89] Smith, J.C., and Song, Y., “Network Interdiction: Theory, Applications, and Emerging Challenges,” *European Journal of Operational Research*, 283(3), 797-811, 2019.

[--] Smith, J.C., “In Memoriam: Shabbir Ahmed (1969–2019),” *INFORMS Journal on Computing*, 31(4), 633-635, 2019.

[90] Lozano, L., Bergman, D., and Smith, J.C., “On the Consistent Path Problem,” *Operations Research* 68(6), 1913-1931, 2020.

[91] Holzmann, T. and Smith, J.C., “The Shortest Path Interdiction Problem with Randomized Interdiction Strategies: Complexity and Algorithms,” *Operations Research* 69(1), 82-99, 2021.

[92] Nguyen, D. and Smith, J.C., “Network Interdiction with Asymmetric Cost Uncertainty,” *European Journal of Operational Research*, 297(1), 239-251, 2022.

[93] Lozano, L. and Smith, J.C., “A Binary Decision Diagram Based Algorithm for Solving a Class of Integer Two-Stage Stochastic Programs,” *Mathematical Programming*, 191(1), 381-404, 2022.

[94] Curry, R.M. and Smith, J.C., “Minimum-cost Flow Problems Having Arc-activation Costs,” *Naval Research Logistics*, 69(2), 320-335, 2022.

[95] Curry, R.M. and Smith, J.C., “An Augmenting-flow Algorithm for a Class of Node-capacitated Maximum Flow Problems,” *Networks*, 80(1), 109-122, 2022.

[96] Nguyen, D. and Smith, J.C., “Asymmetric Stochastic Shortest-Path Interdiction Under Conditional Value-at-Risk,” to appear in *IISE Transactions*, 2023.

[97] Nguyen, D., Song, Y., and Smith, J.C., “A Two-Stage Interdiction-Monitoring Game,” to appear in *Networks*, 2023.

[98] Bochkarev, A.A., and Smith, J.C., “On Aligning Non-order-associated Binary Decision Diagrams,” to appear in *INFORMS Journal on Computing*, 2023.

*Papers Under Review*

[99] Bochkarev, A.A. and Smith, J.C., “Monte Carlo Tree Search for Dynamic Shortest-Path Interdiction,” under review.

*Refereed Conference Proceedings*

[1] Smith, J.C., Ortega, A., Gabel, C.M., and Henderson, D., “Parameter Optimization for a Temperature Estimation Model,” International Electronic Packaging Technical Conference and Exhibition, Maui, HI, 2003.

[2] Mofya, E.C. and Smith, J.C., “The Optimal Deployment of Filters to Limit Forged Address Attacks in Communication Networks,” 2nd Symposium on Intelligence and Security Informatics, Tucson, AZ, 2004. (This appeared in the *Lecture Notes on Computer Science* series.)

[3] Armbruster, B., Lachaine, M.E., Hamilton, R.J. and Smith, J.C., “Mathematical Programming Formulations for Optimizing Radiation Treatment Strategies,” 2004 IERC Conference Proceedings, Houston, TX, 2004.

[4] Andreas, A.K. and Smith, J.C., “Algorithms for Robust *k*-path Routing,” Proceedings of the International Workshop on Global Optimization, pp. 17-22, San José, Spain, 2005.

[5] Smith, J.C., Sudargho, F. and Lim, C., “Survivable Network Design under Various Interdiction Scenarios,” Proceedings of the International Workshop on Global Optimization, pp. 225-230, San José, Spain, 2005.

[6] Smith, J.C., “Organization of the NCAA Baseball Tournament,” in D. Percy, P. Scarf, and C. Robinson (Eds.), Proceedings of the First International Conference on Mathematics in Sport, Manchester, UK, pp. 198-203, 2007. Institute of Mathematics and Its Applications.

[7] Smith, J.C. and Penuel, J., “Solving a Two-Stage Facility Location Problem with Second-Stage Activation Costs,” 2008 IERC Conference Proceedings, Vancouver, CA, 2008.

[8] Yun, Y., Xia, Y., Behdani, B., and Smith, J.C., “Distributed Algorithm for Lifetime Maximization in Delay-Tolerant Wireless Sensor Network with Mobile Sink,” 49th IEEE Conference on Decision and Control, Atlanta, GA, 2010.

[9] Prince, M., Geunes, J., and Smith, J.C., “Optimizing Exclusivity Agreements in a Three-Stage Procurement Game,” 2011 IERC Conference Proceedings, Reno, NV, 2011.

[10] Prince, M., Smith, J.C., and Geunes, J., “Designing Fair 8- and 16-Team Tournament Brackets,” in D. Percy, J. Reade, and P. Scarf (Eds.), Proceedings of the Third International Conference on Mathematics in Sport, Manchester, UK, pp. 195-201 2011.

[11] Curry, R.M. and Smith, J.C., “A Heuristic Approach to a Class of Node-capacitated Maximum Flow Problems,” in L. Cromarty, R. Shirwaiker, and P. Wang (Eds.), Proceedings of 2020 IISE Annual Conference and Expo, New Orleans, LA, 2020.

 *Chapters in Scholarly Books*

[1] Contributor for *CRC Standard Mathematical Tables and Formulae* (Discrete Mathematics Chapter).

[2] Smith, J.C., Lim, C., “Algorithms for Network Interdiction and Fortification Games,” In: *Pareto Optimality, Game Theory and Equilibria* (edited by A. Migdalas, P. M. Pardalos, L. Pitsoulis, and A. Chinchuluun), Nonconvex Optimization and its Applications Series, Springer, New York, NY, 2008.

[3] Smith, J.C., Taskin, Z.C., “Tutorial Guide to Mixed-Integer Programming Models and Solution Techniques,” In: *Optimization and Biology in Medicine* (edited by G.J. Lim and E.K. Lee), Auerbach Publications, Boca Raton, FL, 2008.

[4] Smith, J.C., “Basic Interdiction Models,” In: *Encyclopedia of Operations Research and Management Science* (edited by J. Cochran), Wiley, Hoboken, NJ, 2011.

[5] Smith, J.C. and Ahmed, S., “Introduction to Robust Optimization,” In: *Encyclopedia of Operations Research and Management Science* (edited by J. Cochran), Wiley, Hoboken, NJ, 2011.

[6] Smith, J.C. and Cochran, J., “Introduction to Tabu Search,” In: *Encyclopedia of Operations Research and Management Science* (edited by J. Cochran), Wiley, Hoboken, NJ, 2011.

[7] Smith, J.C. and Sonuc, S., “An Introduction to Integer and Large-Scale Linear Optimization,” In: *Wireless Network Design: Optimization Models and Solution Procedures* (edited by J.L. Kennington, E.V. Olinick, and D. Rajan), 2011.

[8] Smith, J.C., Prince, M., and Geunes, J., “Modern Network Interdiction Problems and Algorithms,” In: *Handbook of Combinatorial Optimization*, 2nd Edition (edited by P.M. Pardalos, D.-Z. Du, and R. Graham), 2012.

[9] Sonuc, S. and Smith, J.C., “Models for Assessing Vulnerability in Imperfect Sensor Networks,” In: *Dynamics of Information Systems: Algorithmic Approaches* (edited by A. Sorokin, M. Banghart, P.M. Pardalos, and R. Murphey), 2013.

[10] Tadayon, B. and Smith, J.C., “A Survey of Robust Offline Single-Machine Scheduling Problems,” In: *Encyclopedia of Operations Research and Management Science* (edited by J. Cochran), Wiley, Hoboken, NJ, 2015.

[11] Lozano, L. and Smith, J.C., “A Brief Overview of Interdiction and Robust Optimization,” In: *Optimization in Large Scale Problems: Industry 4.0 and Society 5.0 Applications* (edited by M. Fathi, M. Khakifirooz, and P.M. Pardalos), Springer, 2019.

[12] Smith, J.C., “Development of Publications and Community at the Interface Between Operations Research and Computing,” In: *Harvey J. Greenberg: A Legacy Bridging Operations Research and Computing* (edited by A. Holder), Springer, 2020.

 *Scholarly Presentations*

[1] “Models and Algorithms for a Synchronous Optical Network Design Problem,” INFORMS Fall Meeting, November 1999, Philadelphia, PA.

[2] “Conflict Resolution Models for Airspace Management,” INFORMS Spring Meeting, May 2000, Salt Lake City, UT.

[3] “Solution to a Synchronous Optical Network Design Problem,” Invited Lecture, Texas Tech University, May 2000, Lubbock, TX.

[4] “Improving Zero-One Model Representations via Symmetry Considerations,” 17th International Symposium on Mathematical Programming, August 2000, Atlanta, GA.

[5] “Radar Pulse Interleaving Algorithms for Multi-Target Tracking,” INFORMS Fall Meeting, November 2000, San Antonio, TX.

[6] “Radar Pulse Interleaving Algorithms for Multi-Target Tracking,” Invited Seminar, Raytheon Lecture Series, January 2001, Tucson, AZ.

[7] “Airspace Planning Models to Reduce Airspace Congestion,” Invited Lecture, Carnegie-Mellon University (Graduate School of Industrial Administration), February 2001, Pittsburgh, PA.

[8] “The Optimal Design of a SONET Network with Uncertain Demands,” INFORMS International Conference, June 2001, Maui, HI.

[9] “Fast Algorithms for Multi-Target Tracking,” INFORMS International Conference, June 2001, Maui, HI.

[10] “Basics of System Optimization: When am I Ever Going to Use This?,” Three-hour seminar presented to SECME, Inc., July 2001.

[11] “The Design of Modern Survivable Networks,” Fault Tolerant Network Principal Investigator Meeting, August 2001, Colorado Springs, CO.

[12] “Advanced Optical Network Design Methodology,” Invited Lecture (Mathematics), Clemson University, September 2001, Clemson, SC.

[13] “Operations Research: Applications, Innovations, and Challenges,” First Symposium on Industrial Engineering, October 2001, Baja California, MX.

[14] “Topics in Optical Network Design,” Invited Lecture, North Carolina State University (Computer Science), October 2001, Raleigh, NC.

[15] “Convex Hull Representations of Models for Computing Collisions Between Multiple Bodies,” INFORMS Fall Meeting, November 2001, Miami, FL.

[16] “Design of a Stochastic Synchronous Optical Network,” INFORMS Fall Meeting, November 2001, Miami, FL.

[17] “Topics in Optical Network Design,” Invited Lecture, George Washington University (Computer Science), November 2001, Washington, DC.

[18] “The Design of Modern Survivable Networks,” Fault Tolerant Network Principal Investigator Meeting, January 2002, San Diego, CA.

[19] “A Stochastic Intra-Ring SONET Design Problem,” Invited Lecture, Arizona State University, February 2002, Tempe, AZ.

[20] “A Stochastic Intra-Ring SONET Design Problem,” Invited Lecture, University of Texas, April 2002, Austin, TX.

[21] “Valid Facetial Inequalities for a Generalized Vertex Packing Problem,” Invited Lecture, IFORS 2002 Conference, July 2002, Edinburgh, UK.

[22] “The Design of Modern Survivable Networks,” Summer 2002 Fault Tolerant Network Principal Investigator Meeting, July 2002, Newport, RI.

[23] “Contemporary Optimization Methods,” a 20-hour short course delivered at *Universidad Autonoma de Baja California*, Mexicali, Mexico, August 2002.

[24] “A Mixed-Integer Programming Approach to Improving Network Security,” Invited Lecture, INFORMS 2002 Conference, November 2002, San Jose, CA.

[25] “An Integer Programming Approach to Single Machine Scheduling with Multi-phase Jobs,” Invited Lecture, INFORMS 2002 Conference, November 2002, San Jose, CA.

[26] “A Class of SONET Optimization Problems,” Invited Lecture, Iowa State University (Computer Science), March 2003, Ames, IA.

[27] “The Role of Algorithmic Theory in Contemporary Optimization Problems,” Invited Lecture, University of California at Los Angeles (Computer Science), April 2003, Los Angeles, CA.

[28] “The Use of Baseline Scenarios in Solving Stochastic and Robust Programming Problems,” Invited Lecture, Naval Postgraduate School, September 2003, Monterey, CA.

[29] “Integer Programming Approaches to Designing Nonsimultaneous Multicommodity Flow Networks,” Invited Lecture, INFORMS 2003 Conference, October 2003, Atlanta, GA.

[30] “A Stochastic Intra-Ring SONET Design Problem,” Invited Lecture, INFORMS 2003 Conference, October 2003, Atlanta, GA. This talk was given as a requirement of the JFIG award competition.

[31] “A Class of SONET Optimization Problems,” Invited Lecture, Purdue University, November 2003, West Lafayette, IN.

[32] “Operations Research Modeling and Algorithms for Airspace Planning Problems,” Invited Lecture, Clemson University, February 2004, Clemson, SC.

[33] “A Stochastic Edge-Partition Problem with Application to the Design of Nonsplit SONET Ring Networks,” Invited Lecture, The 7th INFORMS Telecommunications Conference, March 2004, Boca Raton, FL.

[34] “A Stochastic Intra-Ring SONET Design Problem,” Invited Lecture, The University of Florida, September 2004, Gainesville, FL.

[35] “An Algorithm for the Minimum Risk Problem with Binary First Stage Variables”, Invited Lecture, The Tenth International Conference on Stochastic Programming, October 2004, Tucson, AZ.

[36] “Optimizing the NCAA Basketball Tournament Pod Constituency and Regional Assignment Problem”, Invited Lecture, INFORMS 2004 Conference, October 2004, Denver, CO.

[37] “Optimizing the Deployment of Packet Filters to Improve Network Security,” Invited Lecture, Clemson University, November 2004, Clemson, SC.

[38] “Minimum-Cost Paths with Survivability Considerations,” Invited Lecture, Georgia Institute of Technology, January 2005, Atlanta, GA.

[39] “Minimum-Cost Paths with Survivability Considerations,” Invited Lecture, Clemson University, January 2005, Clemson, SC.

[40] “Minimum-Cost Paths with Survivability Considerations,” Invited Lecture, University of Florida, January 2005, Gainesville, FL.

[41] “Two-Stage Stochastic Risk Threshold and Hierarchical Multiple Risk Problems,” Invited Lecture, IFORS 2005 Conference, July 2005, Honolulu, HI.

[42] “Optimizing Team Travel in the NCAA Basketball Tournament,” Invited Lecture, IFORS 2005 Conference, July 2005, Honolulu, HI.

[43] “Survivable Network Design under Various Interdiction Scenarios,” International Workshop on Global Optimization, September 2005, San José, Spain.

[44] “Optimization Methods for Routing Problems on Networks with
Stochastic Failures,” Invited Lecture, Auburn University, February 2006, Auburn, AL.

[45] “Fortifying Networks Against Human Interdiction”, Invited Lecture, Workshop on Decision Modeling and Behavior in Uncertain and Complex Environments, February 2006, Tucson, AZ.

[46] “Solution of a Nonlinear Integer Program for a College Baseball Tournament Assignment Problem,” Invited Lecture, EURO XXI, July 2006, Reykjavik, Iceland.

[47] “A Benders Decomposition Approach to Solving an Evacuation Problem,” Invited Lecture, INFORMS 2006 Conference, October 2006, Pittsburgh, PA.

[48] “Algorithms for Network Interdiction Under Suboptimal Enemy Behavior,” Invited Lecture, INFORMS 2006 Conference, October 2006, Pittsburgh, PA.

[49] “An Improved Linearization Strategy for 0-1 Quadratic Programming Problems,” Invited Lecture, INFORMS 2006 Conference, October 2006, Pittsburgh, PA.

[50] “A Bracket Assignment Problem for the NCAA Men’s Basketball Tournament,” Invited Lecture, Ohio State University, May 2007, Columbus, OH.

[51] “A Tutorial on Mathematical Programming in Sports,” Tutorial, Industrial Engineering Research Conference, May 2007, Nashville, TN.

[52] “Mathematical Programming in Sports,” Tutorial, INFORMS International Conference, June 2007, Rio Grande, Puerto Rico.

[53] “Network Design Under Varying Enemy Behaviors,” Invited Lecture, 40th Annual Meeting of the Society for Mathematical Psychology, July 2007, Irvine, CA.

[54] “Enhanced Cutting Planes for a Class of Binary Multi-Level Optimization Algorithms,” Invited Lecture, MIP 2007 Workshop on Mixed Integer Programming, August 2007, Montréal, Canada.

[55] “Minimum Filter Placement for Computer Security,” Invited Lecture, INFORMS 2007 Conference, November 2007, Seattle, WA.

[56] “Two-Stage Stochastic Hierarchical Multiple Risk Problems,” Invited Lecture, INFORMS 2007 Conference, November 2007, Seattle, WA.

[57] “Evacuation Problems with Human Behavioral Considerations,” Invited Lecture, Decision Modeling and Behavior in Uncertain and Complex Environments, February 2008, Tucson, AZ.

[58] “Optimization Modeling Challenges Under Uncertainty,” Invited Lecture, Bridges to Engineering Research Conference, March 2008, Greensboro, NC.

[59] “An Integer Decomposition Algorithm for Solving a Two-Stage Integer Facility Location Problem with Second-Stage Activation Costs,” Invited Lecture, INFORMS Optimization Society, March 2008, Atlanta, GA.

[60] “Optimal Insurance of PERT/CPM Arcs with Uncertain Task Durations”, Invited Lecture, Industrial Engineering Research Conference, May 2008, Vancouver, CA.

[61] “Solving a Two-Stage Facility Location Problem with Second-Stage Activation Costs”, Invited Lecture, Industrial Engineering Research Conference, May 2008, Vancouver, CA.

[62] “Organization of the NCAA Division I Baseball Tournament”, Invited Lecture, Symposium on Statistics and Operations Research in Baseball, July 2008, New York City, NY.

[63] “Defense Against K-best Interdiction Attacks,” Invited Lecture, INFORMS 2008 Conference, October 2008, Washington, DC.

[64] “Dynamic Lagrangian Dual and Reduced RLT Constructs for Solving 0-1 Mixed-integer Programs,” Invited Lecture, INFORMS 2008 Conference, October 2008, Washington, DC.

[65] “Leaf Sequencing Algorithms in Radiation Treatment Planning,” Invited Lecture, Rice University, December 2008, Houston, TX.

[66] “New Approaches to Solving Bi-Level Problems,” Invited Lecture, University of South Florida, March 2009, Tampa, FL.

[67] “Variable Expansion and Hybrid Optimization Techniques for Solving Bi-Level Problems,” Invited Lecture, University of Michigan, March 2009, Ann Arbor, MI.

[68] “Organization of the NCAA College Baseball Tournament,” Invited Lecture, Industrial Engineering Research Conference, June 2009, Miami, FL.

[69] “Cutting Plane Algorithms for Solving a Robust Edge-partition Problem,” Invited Lecture, International Symposium on Mathematical Programming, August 2009, Chicago, IL.

[70] “New Product Introduction against a Predator:  A Bilevel Mixed-Integer Programming Approach,” Invited Lecture, University of Maryland, October 2009, College Park, MD.

[71] “Generating Cutting Planes via Dynamic Lagrangian Dual and Reduced RLT Constraints,” Invited Lecture, INFORMS 2009 Conference, October 2009, San Diego, CA.

[72] “Two-Stage Facility Location Problem with Second-Stage Activation Costs,” Invited Lecture, INFORMS 2009 Conference, October 2009, San Diego, CA.

[73] “Variable Expansion and Hybrid Optimization Techniques for Solving Bi-Level Problems,” Invited Lecture, University of Pittsburgh, November 2009, Pittsburgh, PA.

[74] “Introduction to Robust Optimization,” Invited Lecture, Workshop on Combinatorial Optimization under Uncertainty, November 2009, Banff, Canada.

[75] “A Mixed-Integer Nonlinear Programming Algorithm for Insuring Critical Paths,” Invited Lecture, 2nd LANCS Workshop on Discrete and Non-linear Optimisation, March 2010, Southampton, UK.

[76] “Variable Expansion and Hybrid Optimization Techniques for Solving Bi-Level Problems,” Invited Lecture, University of Edinburgh, School of Mathematics, April 2010, Edinburgh, UK.

[77] “A Decomposition Approach for Insuring Critical Paths,” Invited Lecture, University of Edinburgh Business School, June 2010, Edinburgh, UK.

[78] “A Decomposition Approach for Insuring Critical Paths,” Invited Lecture, University of Warwick, Centre for Discrete Mathematics and its Applications, June 2010, Coventry, UK.

[79] “Expectation and Chance-constrained Models and Algorithms for Insuring Critical Paths,” Invited Lecture, EURO 2010 Conference, July 2010, Lisbon, Portugal.

[80] “A Combinatorial Optimization Algorithm for Solving the Branchwidth Problem,” Invited Lecture, INFORMS 2010 Conference, October 2010, Austin, TX.

[81] “Searching and Hiding on Networks,” Tutorial Lecture, INFORMS 2010 Conference, October 2010, Austin, TX.

[82] “A Geometric Monitoring and Interdiction Problem,” INFORMS Computing Society 2011 Conference, January 2011, Monterey, CA.

[83] “A Survey of Search Problems on Networks” Invited Lecture, University of Cincinnati, January 2011, Cincinnati, OH.

[84] “Designing Fair 8- and 16-team Tournament Brackets,” Invited Lecture, Industrial Engineering Research Conference, May 2011, Reno, NV.

[85] “Extended and Strengthened Combinatorial Benders Cuts for Mixed-Integer Programs,” Invited Lecture, INFORMS 2011 Conference, November 2011, Charlotte, NC.

[86] “An Integer-Programming-Based Approach to the Close-Enough
Traveling Salesman Problem,” Invited Lecture, Colorado School of Mines, January 2012, Golden, CO.

[87] “An Integer-Programming-Based Approach to the Close-Enough
Traveling Salesman Problem,” Invited Lecture, University of Texas, January 2012, Austin, TX.

[88] “Breaking Up (a Network) is Hard to Do: Network Disconnection via Node Deletion,” Invited Lecture, Clemson University, April 2012, Clemson, SC.

[89] “A Cutting-Plane Method for Two Facility Reliability Problems,” Invited Lecture, Industrial and Systems Engineering Research Conference, May 2012, Orlando, FL.

[90] “Tutorial: Teaching DP and Duality via Games, Interdiction, and Robust Optimization,” Tutorial Lecture, INFORMS 2012 Conference, October 2012, Phoenix, AZ.

[91] “Revisiting Fortification Algorithms for Facility Interdiction Problems,” Invited Lecture, Naval Postgraduate School, November 2012, Monterey, CA.

[92] “Defense Algorithms for Capacitated Facility Interdiction Problems,” Invited Lecture, INFORMS Computing Society Conference, January 2013, Santa Fe, NM.

[93] “A Robust Sensor Covering and Communication Problem,” Invited Lecture, Industrial and Systems Engineering Research Conference, May 2013, San Juan, PR.

[94] “Good and Bad Habits for New (and Not so New) Faculty,” Invited Panel Lecture, INFORMS 2013 Conference, October 2013, Minneapolis, MN.

[94] “Revisiting Fortification Algorithms for Facility Interdiction Problems,” Invited Lecture, University of Buffalo, February 2014, Buffalo, NY.

[95] “Revisiting Fortification Algorithms for Facility Interdiction Problems,” Invited Lecture, University of Southern California, March 2014, Los Angeles, CA.

[96] “Revisiting Fortification Algorithms for Facility Interdiction Problems,” Invited Lecture, University of Tennessee, March 2014, Knoxville, TN.

[97] “Refereeing Papers and Proposals,” Invited Panelist, INFORMS 2014 Conference, November 2014, San Francisco, CA.

[98] “How to Recruit, Retain, and Support Women and Minority Students,” Invited Panelist, INFORMS 2014 Conference, November 2014, San Francisco, CA.

[99] “Dynamic Shortest Path Interdiction,” Invited Lecture, 2015 INFORMS Computing Society Conference.

[100] “A Backward Sampling Framework for Interdiction Problems with Fortification,” Invited Lecture, Bogazici University, May 2015, Istanbul, Turkey.

[101] “A Backward Sampling Framework for Interdiction Problems with Fortification,” Invited Lecture, Sabanci University, May 2015, Istanbul, Turkey.

[102] “A Backward Sampling Framework for Interdiction Problems with Fortification,” Invited Lecture, Koc University, May 2015, Istanbul, Turkey.

[103] “Dynamic Shortest Path Interdiction,” Invited Seminar, International Symposium on Mathematical Programming, July 2015, Pittsburgh, PA.

[104] “Dynamic Shortest Path Interdiction,” Invited Lecture, The Ohio State University, August 2015, Columbus, OH.

[105] “Dynamic Shortest Path Interdiction,” Invited Lecture, Florida State University, September 2015, Tallahassee, FL.

[106] “Dynamic Shortest Path Interdiction,” Invited Lecture, Northwestern University, October 2015, Chicago, IL.

[107] “Dynamic Shortest Path Interdiction,” Invited Lecture, University of Minnesota, October 2015, Minneapolis, MN.

[108] “A Backward Sampling Framework for Interdiction Problems with Fortification,” Invited Lecture, Universidad de los Andes, October 2015. Bogota, Colombia.

[109] “Concepts in Integer Programming, Interdiction, and Robust Optimization,” Invited Lecture, Tsinghua University, November 2015. Beijing, China.

[110] “An Integer-Programming-Based Approach to the Close-Enough Traveling Salesman Problem,” Invited Lecture, Arizona State University, February 2016. Tempe, AZ.

[111] “A Sampling-based Exact Approach for the Bilevel Mixed Integer Programming Problem,” Invited Seminar, INFORMS Optimization Society Conference, March 2016. Princeton, NJ.

[112] “Capacitated Facility Interdiction Problems with Fortification Under Median and Center Objective Functions,” Invited Lecture, University of Massachusetts, April 2016. Amherst, MA.

[113] “A Defender-Attacker Model and Algorithm for Conservation Planning,” Invited Seminar, 4th International Conference on Computational Sustainability, July 2016. Ithaca, NY.

[114] “Dynamic Network Interdiction: Bounds and Optimal Algorithms,” Invited Lecture, Auburn University, September 2016. Auburn, AL.

[115] “A Backward Sampling Framework for Interdiction Problems with Fortification,” Invited Lecture, University of Illinois, September 2016. Urbana, IL.

[116] “Dynamic Network Interdiction: Bounds and Optimal Algorithms,” Invited Lecture, University of Pittsburgh, September 2016. Pittsburgh, PA.

[117] “Dynamic Network Interdiction: Bounds and Optimal Algorithms,” Invited Lecture, Georgia Institute of Technology, September 2016. Atlanta, GA.

[118] “Exact Algorithms and Bounds for the Dynamic Assignment Interdiction Problem,” Invited Lecture, Oklahoma State University, September 2016. Stillwater, OK.

[119] “Maximum Proportional Flow Problems with Semicontinuous Restrictions,” Invited Lecture, Wichita State University, December 2016. Wichita, KS.

[120] “Next-Generation Network Interdiction Algorithms,” Tutorial Lecture, INFORMS Computing Society Conference, January 2017, Austin, TX.

[121] “The Maximum Semicontinuous Flow Problem,” Invited Lecture, Rice University, February 2017. Houston, TX.

[122] “Dynamic Network Interdiction,” Invited Lecture, Pontificia Universidad Catolica del Peru, June 2017. Lima, Peru.

[123] “Patrolling and Dynamic Interdiction,” Invited Lecture, CREATE Workshop on Detection and Interdiction of Illegal materials in Transportation Networks, June 2017. Los Angeles, CA.

[124] “The Maximum Semicontinuous Flow Problem,” Invited Lecture, Iowa State University, September 2017. Ames, IA.

[125] “The Maximum Semicontinuous Flow Problem,” Invited Lecture, University of Texas, September 2017. Austin, TX.

[126] “Mathematical Optimization Models and Algorithms for Dynamic Detection on Networks,” Invited Lecture, University of South Florida, October 2017. Tampa, FL.

[127] “The Maximum Semicontinuous Flow Problem,” Invited Lecture, University of Alabama, February 2018. Tuscaloosa, AL.

[128] “Binary Decision Diagrams, Consistent Paths, and Combinatorial Optimization,” Invited Lecture, University of Wisconsin, March 2018. Madison, WI.

[129] “BDD-based Cutting-Plane Algorithms for Solving Integer Programs,” Invited Seminar, INFORMS Optimization Society Conference, March 2018. Denver, CO.

[130] “Using Binary Decision Diagrams in Solving Hard Binary Optimization Problems,” Invited Seminar, Mixed-Integer Programming Workshop, June 2018, Greenville, SC.

[131] “The Consistent Path Problem and Binary Decision Diagrams,” Invited Seminar, International Symposium on Mathematical Programming, July 2018, Bordeaux, France.

[132] “The Shortest Path Interdiction Problem with Arc Improvement Recourse: a Multiobjective Approach,” Invited Seminar, Risk Management Approaches in Engineering Applications Workshop, October 2018, Gainesville, FL.

[133] “Binary Decision Diagrams, Consistent Paths, and Combinatorial Optimization,” Invited Lecture, Northeastern University, November 2018, Boston, MA.

[134] “The Shortest Path Interdiction Problem with Arc Improvement Recourse: a Multiobjective Approach,” Invited Seminar, INFORMS Computing Society Conference, January 2019, Knoxville, TN.

[135] “The Maximum Semicontinuous Flow Problem,” Invited Lecture, Lehigh University, February 2019, Bethlehem, PA.

[136] “The Applications, Mathematics, and Algorithms of Two-Player Optimization Problems,” Plenary Lecture, INFORMS ALIO International Conference, June 2019, Cancun, MX.

[137] “The Shortest Path Interdiction Problem with Randomized Interdiction Strategies: Complexity and Algorithms,” Invited Seminar, Rochester Institute of Technology, February 2020, Rochester, NY.

[138] “The Shortest Path Interdiction Problem with Randomized Interdiction Strategies: Complexity and Algorithms,” Invited Seminar, George Mason University, September 2021 (virtual).

[139] “Asymmetric Stochastic Shortest-Path Interdiction Favoring the Evader,” Invited Seminar, University of Florida, January 2022, Gainesville, FL.

[140] “Asymmetric Stochastic Shortest-Path Interdiction Favoring the Evader,” Invited Seminar, Texas A&M University, February 2022, College Station, TX.

[141] “The Current and Future Waves of Interdiction Models and Algorithms,” Plenary Presentation, International Network Optimization Conference, June 2022, Aachen, Germany.

[142] “Asymmetric Stochastic Shortest-Path Interdiction Favoring the Evader,” Invited Seminar, Montreal Operations Research Student Chapter, June 2022, Montreal, Canada.

[143] “Asymmetric Stochastic Shortest-Path Interdiction Favoring the Evader,” Invited Seminar, Georgia Tech, October 2022, Atlanta, GA.

**GRANTS AND SPONSORED PROJECTS**

[1] Principal Investigator (100% responsibility): “Development of a Comprehensive Combinatorial Optimization Problem and Solution Library,” University of Arizona Faculty Small Grants, $4,854, 2001.

[2] Co-Principal Investigator (50% responsibility with S. Sen): “Modeling Network Design Problems,” Lockheed-Martin Corporation, $9,500, 2001.

[3] Principal Investigator (100% responsibility): “ITR/AP: Discrete Optimization Methods for Designing Survivable Networks,” Defense Advanced Research Projects Agency, $301,184, 2001-2004.

[4] Co-Principal Investigator (50% responsibility with S. Sen): “Equipment for Distributed and Parallel Computing,” State of Arizona Information Technology and Commerce Institute, $80,000, 2002.

[5] Principal Investigator (100% responsibility): “Optimization Methods for Routing Problems on Networks with Stochastic Failures,” Office of Naval Research (Young Investigator Program), $300,000, 2003-2006.

[6] Principal Investigator (20% responsibility, with R. Askin, T. Bahill, T. Connolly, J. Jin, A. Rapoport, S. Sen, Y. Son, F. Szidarovszky): “Predicting and Prescribing Human Decision Making Under Uncertain and Complex Scenarios,” Air Force Office of Scientific Research, $3,987,238, 2003-2008.

[7] Principal Investigator (100% responsibility): “Enhanced Cutting Plane Techniques for Bi-Level Optimization Algorithms,” Air Force Office of Scientific Research, $61,000, 2007.

[8] Principal Investigator (100% responsibility): “Variable Expansion Techniques for Decomposable Optimization Problems,” Air Force Office of Scientific Research, $244,444, 2008 – 2010.

[9] Principal Investigator (40% responsibility): “Mathematical Approaches to WMD Defense and Vulnerability Assessments on Dynamic Networks,” Defense Threat Reduction Agency, $831,846, 2010 – 2014.

[10] Principal Investigator (50% responsibility): “Integrating Dynamic Programming within Mixed-Integer Programming Techniques,” National Science Foundation, $230,000, 2011 – 2014.

[11] Principal Investigator (100% responsibility): “Analysis and Algorithms for Imperfect Sensor Deployment and Operations,” Air Force Office of Scientific Research, $345,354, 2012 – 2016.

[12] Principal Investigator (50% responsibility): “Dynamic and Adaptive Sensor Operations under Uncertainty,” Office of Naval Research, $630,286, 2013 – 2016.

[13] Principal Investigator (100% responsibility): “Evaluation of Quantum Computation Augmented Machine Learning Algorithms for Identifying Pharmacogenomics Biomarkers During Adaptive Clinical Trials,” Lockheed-Martin Corporation, $54,142, 2014 – 2015.

[14] Principal Investigator (25% responsibility): “A Grid Computing Laboratory for Integrative Behavioral and Optimization Research,” Air Force Office of Scientific Research, $155,654, 2016 – 2017.

[15] Principal Investigator (100% responsibility): “Assessing the Impact of Asymmetric Information in Interdiction and Bilevel Games,” Office of Naval Research, $384,182, 2017 – 2019.

[16] Principal Investigator (20% responsibility): “NRT-DESE: Preparing Resilient Operationally Adaptive Communities through an Interdisciplinary, Venture-based Education (PROACTIVE),” National Science Foundation, $2,989,900, 2016 – 2021. *NOTE: I was not the original PI for this grant and formally joined this program in 2018 to lead in the absence of the original PI.*

[17] Co-Principal Investigator (16% responsibility): “GPU-accelerated Mathematical Optimization with Applications to Big Data, Computer Modeling, and Simulation,” Air Force Office of Scientific Research, $316,000, 2019 – 2020.

[18] Principal Investigator (100% responsibility): “Temporal Network Interdiction Problems,” Air Force Office of Scientific Research, $312,119, 2023 – 2025.

**TEACHING AND GRADUATE RESEARCH SUPERVISION**

*Ph.D. Dissertations*

[1] Jennifer Horne, Models and Algorithms for A Facility Location Problem Involving Complex Coverage Requirements, May 2004.

[2] Dale Henderson, Heuristic and Exact Techniques for Solving a Temperature Estimation Model, December 2005.

[3] E. Chisonge Mofya, Exact and Heuristic Algorithms for Solving the Generalized Minimum Filter Placement Problem, December 2005.

[4] April Andreas, Mathematical Programming Algorithms for Reliable Routing and Evacuation Problems, July 2006.

[5] John Penuel, Decomposition Algorithms for Two-Stage Stochastic Integer Programming, August 2009 August 2009.

[6] Z. Caner Taskin, Algorithms for Solving Multi-Level Optimization Problems with Discrete Variables at Multiple Levels, August 2009.

[7] I. Esra Buyuktahtakin (**co-chair**), Mixed Integer Programming Approaches to Lot-Sizing and Asset Replacement Problems, August 2009.

[8] Siqian Shen, Reformulation and Cutting-Plane Approaches for Solving Two-Stage Optimization and Network Interdiction Problems, August 2011.

[9] Behnam Behdani, Discrete and Geometric Approaches to Lifetime Maximization in Wireless Sensor Networks, August 2012.

[10] Kelly Sullivan, Two-Level System Interdiction, August 2012.

[11] Sibel Sonuc, Multi-Stage MIP Formulation and Exact Solution Approaches for Combinatorial Network Problems, December 2012.

[12] Mike Prince, Algorithms and Reformulation Techniques for Three-Stage Interdiction and Fortification Problems, May 2013. Co-advised with Dr. Joseph Geunes.

[13] Mehdi (Soheil) Hemmati, Multilevel Discrete Formulations and Algorithms with Applications to New Product Introduction Games and Network Interdiction Problems, August 2013.

[14] Andrew Romich, Mixed-Integer Nonlinear Algorithms and Analysis for Spatial Network Interdiction Problems, August 2013. Co-advised with Dr. Guanghui Lan.

[15] Yen Thi-Ha Tang, A Class of Algorithms for Mixed-Integer Bilevel Min-Max Optimization Problems with Applications, December 2013. Co-advised with Dr. J.-P. Richard.

[16] Bita Tadayon, Algorithms and Complexity Analysis for Integer Multicommodity Network Flow and Robust Single-Machine Scheduling Problems, May 2014.

[17] Shantih Spanton, Network Models for Performance Analysis and Optimization, August 2014. Co-advised with Dr. Joseph Geunes.

[18] Sadie Thomas, Survival Probability on Networks with Memory and Fortification, December 2014.

[19] Jorge Sefair, Interdiction Models for Planning Under Uncertainty, August 2015.

[20] Leonardo Lozano-Sanchez, Exact Algorithms for Mixed-Integer Multilevel Programming Problems, August 2017.

[21] Robert Curry, Mathematical Models and Algorithms for Network Flow Problems Arising in Wireless Sensor Network Applications, August 2018.

[22] Timothy Holzmann, Network Interdiction Under Uncertainty, August 2019.

[23] Juliana Arango Calderon, Optimization Approaches for Scheduling and Railway Applications, December 2020.

[24] Alexey Bochkarev, Selected Topics in Network Optimization: Aligning Binary Decision Diagrams for a Facility Location Problem and a Search Method for Dynamic Shortest Path Interdiction, December 2021.

[25] Di Nguyen, Selected Interdiction Games with Uncertain, Risk-Averse, and Simultaneous Play Considerations, May 2022.

*M.S. Theses/Reports*

[1] Ashwin Naik, Thesis: Development of a Flexible Metaheuristic Library with Application to Survivable Network Design, August 2002.

[2] Manish Garg, Thesis: Design of Survivable Multicommodity Flow Networks, August 2003.

[3] Sonal Joshi, Thesis: Optimizing Bioassembly Tool Operations, December 2003.

[4] Omrum Aki, Thesis: Stochastic Facility Location Problems for Disaster Relief, May 2004.

[5] Travis J. Lindberg (co-advised with Terry Bahill), Thesis: A Corps (and Below) Engineer Planning Resource, May 2004.

[6] Sandeep Sastry, Report: Integer and Dynamic Programming Models for Survivable Shortest Path Problems with Random Arc Failures, May 2004.

[7] Hitesh Jain, Report: A Column Generation Algorithm for Nonsimultaneous Multicommodity Flow Problems, May 2004.

[8] Srikanth Sista, Report: Advanced Solution Approaches for Survivable Shortest Path Problems with Random Arc Failures, December 2004.

[9] Josephat Zimba, Report: The Effect of Symmetry in Neighborhood-Based Heuristics, December 2004.

[10] Chad Reynolds, Report: Algorithms for Predicting Human Decision-Making by a Weighted Attribute Model, December 2004.

[11] Tingting Cui, Thesis: A Bilevel Programming Approach for a Class of Stackelberg Games with Applications in Financial Policy Making, August 2005.

[12] Francisca Sudargho, Thesis: Network Design under Various Interdiction Scenarios, August 2005.

*Teaching summary (at Clemson and Florida)*

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| --- | --- | --- | --- |
| Course | Semester | # Evaluations/ Enrollment | Overall assessment of instructor (5-point scale) |
| CE 8470 | Spring 18 | 1/11 | N/A |
| IE 8520 | Spring 18 | 1/34 | N/A |
| CE 8470 | Fall 17 | 6/10 | 5.00 |
| IE 8030 | Fall 17 | 22/41 | 4.86 |
| IE 8520 | Spring 17 | 13/24 | 4.92 |
| IE 4910/6910 | Fall 16 | 11/13 | 5.00 |
| IE 8520 | Spring 16 | 14/24 | 4.93 |
| IE 8930 | Fall 15 | 9/11 | 5.00 |
| IE 8520 | Spring 15 | 10/45 | 4.80 |
| IE 2800 | Fall 14 | 34/100 | 4.91 |
| EIN 6905 | Spring 14 | 9/14 | 5.00 |
| EGN 4930 | Spring 14 | 14/66 | 4.92 |
| ESI 6314\* | Fall 13 | 17/35 | 4.82 |
| EIN 4335 | Fall 13 | 11/40 | 4.82 |
| EGN 4930 | Fall 13 | 13/57 | 4.92 |
| ESI 6418 | Spring 13 | 9/14 | 5.00 |
| ESI 6314\* | Fall 12 | 18/57 | 5.00 |
| ESI 4312 | Fall 11 | 41/78 | 4.98 |
| ESI 6314\* | Fall 11 | 21/54 | 4.90 |
| ESI 6912 | Fall 11 | 19/23 | 4.89 |
| ESI 6418 | Spring 11 | 11/11 | 4.70 |
| ESI 4312 | Fall 10 | 48/62 | 4.89 |
| ESI 6314\* | Fall 10 | 32/34 | 4.91 |
| ESI 4312 | Fall 09 | 51/57 | 4.90 |
| ESI 6314\* | Fall 09 | 45/47 | 4.80 |
|  ESI 6417 | Spring 09 | 28/30 | 4.93 |
| ESI 4312 | Fall 08 | 41/49 | 5.00 |
| ESI 6314\* | Fall 08 | 51/56 | 4.82 |
| ESI 6314 | Fall 07 | 68/79 | 4.94 |
| ESI 6314\* | Fall 07 | 51/56 | 4.90 |
| ESI 6912 | Spring 07 | 20/22 | 4.75 |
| ESI 6314 | Fall 06 | 30/31 | 4.93 |
| ESI 6314\* | Fall 06 | 29/30 | 4.72 |
| ESI 6314 | Fall 05 | 18/18 | 4.89 |
| ESI 6417 | Fall 05 | 18/24 | 4.72 |

\*: Denotes an Outreach Engineering Management course (taught off-site on weekends, course instruction is live, and material is the virtually the same as the on-campus version).

**SERVICE**

 *Extramural: Elected Leadership*

INFORMS Vice President for Publications, 2019-2022

IISE Senior Vice President for Continuing Education, 2018-2021

Chair, INFORMS Computing Society, 2018-2019

Council of Industrial Engineering Department Heads (CIEADH) Chair, 2017-2018

ACORD President, 2016

 *Extramural: Major Roles*

Doctoral Colloquium Chair, 2017 IISE Annual Conference

Doctoral Colloquium Chair, 2016 Industrial and Systems Engineering Research Conference

Program co-chair, 2009 Industrial Engineering Research Conference

Workshop Program co-chair, *Decision Modeling and Behavior in Uncertain and Complex Environments*, held in Tucson, AZ, February 2008

Workshop Program co-chair, *Decision Modeling and Behavior in Uncertain and Complex Environments*, held in Tucson, AZ, February 2006.

Tutorials Chair, 2005 INFORMS National Meeting

Future Academician Colloquium Chair, 2004 INFORMS National Meeting

 *Other Significant Extramural:*

Co-chair, Nicholson Prize Committee, 2017

CIEADH Subcommittee Chair on the Annual Conference Proceedings, 2016-2017

CIEADH Oversight Committee, 2015-2018

INFORMS Optimization Society Prize for Young Researchers Panelist, 2016

Chair, JFIG Best Paper Competition, 2014.

Doctoral Dissertation Award for OR in Telecommunications Award Panel Member, 2012, 2014

IIE Awards Panel Member, 2011-2014

INFORMS Telecommunication Society Best Dissertation Award Chair, 2012

IIEOperations Research Teaching Award committee member, 2010

*IIE Transactions* Best Paper Award Member, 2010

*IIE Transactions* Best Paper Award Chair, 2009

Program co-chair, ORACLE (OR at Clemson): Symposium in Celebration of the Careers of Lin Dearing and Rick Jarvis

Track chair, 2009 INFORMS Computing Society Conference

Member-of-council, INFORMS Telecommunication Section, 2008 – 2010

2008 JFIG Award Panelist

Session Cluster Chair, 2005 INFORMS Conference, New Orleans, LA.

Tutorial Chair, 2007 INFORMS Summer National Meeting

Track Chair, 2007 IERC Operations Research

Program Committee Member: IASTED Modeling, Simulation, and Optimization Conference, Kauai, HI, August 2004.

IIE Best Book and Best Paper Award Panelist, 2003

 NSF Proposal Review Panelist (multiple occasions)

 Session Cluster Chair, 2001 Summer INFORMS Conference, Maui, HI.

 Program Committee Member, 2003 Eighth INFORMS Computing Society Conference, Phoenix, AZ

 *Intramural*

 Search Committee Chair, Vice President and Chief Information Officer, 2016 – 2017

 Interim Director, University of Florida Informatics Institute, 2013 – 2014

Founding Director, Florida Institute for National Security, 2012 – 2013

Doctoral Dissertation Advisor/Mentoring Awards Committee member, 2011

Internal Grants Review Committee (multiple times)

College of Engineering Undergraduate Programs Steering Committee member, 2009-2010.

 ISE Faculty Search Committee Chair, 2009

 ISE Faculty Search Committee Chair, 2008

 ISE Graduate Committee Chair, 2006 – current (co-chair 07-08).

 ISE Graduate Committee, 2005 – current

Senior Design team advisor (multiple times):

 SIE Graduate Committee, 2000-2005

 Co-Chair: 2003-2004

 Chair: 2004-2005

 Recruiting Faculty Fellow, 2004-present

SIE Ad Hoc Committee on Operations Research Curriculum, 2001-2003.