

# CURRICULUM VITAE

Sept, 2018

**NAME:** Ghaith Rabadi, Ph.D.

**TITLE:** Professor and Vice President for Research and Development  
Princess Sumaya University for Technology (PSUT)

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Khalil Al- Saket Street , Amman – Jordan  
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## EDUCATION:

12/1999 *Ph.D. Industrial Engineering*  
*University of Central Florida,* Orlando Florida

05/1996 *M.Sc. Industrial Engineering*  
*University of Central Florida,* Orlando Florida

08/1992 *B.Sc. Industrial Engineering*  
*University of Jordan,* Amman, Jordan

## EXPERIENCE:

07/2018 – Present *Vice President for Research and Development*  
Princess Sumaya University for Technology, Amman, Jordan

07/2016 – 2018 *Professor*  
Dept. Engineering Management and Systems Engineering  
Old Dominion University, Norfolk, VA

08/2008 – 07/2016 *Associate Professor*  
Dept. Engineering Management and Systems Engineering  
Old Dominion University, Norfolk, VA

09/2013 – 06/2014 *Visiting Associate Professor (one year sabbatical)*  
Dept. Mechanical and Industrial Engineering

Qatar University, Doha, Qatar

01/2007 – 07/2010 *Graduate Program Director (GPD)*  
Dept. Engineering Management and Systems Engineering  
Old Dominion University, Norfolk, VA

08/2002 – 07/2008 *Assistant Professor*  
Dept. Engineering Management and Systems Engineering  
Old Dominion University, Norfolk, VA

05/2003 – 08/2003 *NASA Faculty Fellow*  
Vehicle Analysis Branch  
NASA Langley Research Center Hampton, VA

08/2001 – 06/2002 *Research and Development Director*  
Productivity Apex, Inc. Orlando, FL, U.S.A.

08/2001 – 05/2002 *Adjunct Professor*  
Dept. Industrial Engineering and Management Systems  
University of Central Florida, Orlando, FL, U.S.A.

08/2000 – 08/2001 *Visiting Assistant Professor*  
Dept. Industrial Engineering and Management Systems  
University of Central Florida, Orlando, FL, U.S.A.

01/2000 – 08/2000 *Post-Doctoral Researcher*  
Dept. Industrial Engineering and Management Systems  
NASA Funded project  
University of Central Florida, Orlando, FL, U.S.A.

08/1996 – 12/1999 *LUCENT TECHNOLOGIES Fellow*  
Dept. Information Technology  
Lucent Technologies Orlando, FL, U.S.A.

01/1995 – 08/1996 *Expert Systems Developer (Research Assistant)*  
Intelligent Systems Simulation & Training  
Labs  
Dept. Industrial Engineering and Management Systems  
University of Central Florida, Orlando, FL, U.S.A.

08/1992 – 08/1994 *Operations & Quality Engineer*  
ARAL Company Ltd. (Aluminum Manufacturing) Amman, Jordan

## EDITORSHIP:

06/2010 – Present

### Editor-in-Chief

*International Journal of Planning and Scheduling*

<http://www.inderscience.com/IJPS>

06/2010

**Co-Editor** of the [Proceeding of the 6<sup>th</sup> International Workshop on Enterprise and Organizational Modeling and Simulation \(EOMAS 2010\)](#), Hammamet, Tunisia

05/2012

### Editorial Board member

*International Journal of Business Analytics*

<http://www.igi-global.com/journal/international-journal-business-analytics-ijban/67141#editorial-board>

## TEACHING

### GRADUATE COURSES: Live and Distance

ENMA 613:	Logistics & Supply Chain Management (14 semesters at ODU)
ENMA 613:	Logistics & Supply Chain Management (Asynchronous CD-ROM for a Navy Program)
ENMA 603:	Operations Research (11 semesters at ODU)
ENMA 603:	Operations Research (Asynchronous CD-ROM for a Navy Program)
EMP502:	Management Science/OR (1 semester at Qatar University)
ENMA 605:	Capstone Project for Masters of Engineering Management
ENMA 703/803:	Optimization Methods (13 semesters at ODU)
MSIM 795/895	Optimization Methods for Modeling & Simulation (3 semesters)
ENMA 795/895:	Discrete-Event Simulation (2 semesters at ODU)
ENMA 723/823:	Enterprise and Complex System Dynamics (1 Semester at ODU)
ENMA 888:	Ph.D. Seminar (2 semesters at ODU)
EIN 6425:	Scheduling and Sequencing (1 Semester, UCF)
ESI 5219:	Statistics and Probability for Engineers (3 Semesters, UCF)

### UNDERGRADUATE COURSES: Live

EIN3314:	Work Measurement: Time & Motion Study (1 Semester, UCF)
GENG360:	Engineering Economy (2 semesters at Qatar University, 2013-2014)
IENG479:	Advanced Simulation (1 semester at Qatar University, Fall 2013)
IENG350	Computer Simulation Systems (1 semester at Qatar University, Sp14)
ING498:	Senior Design (1 semester at Qatar University, Fall 2013)

### SHORT COURSES: Live, hands-on training

Modeling and Simulation:	3-day short course for <a href="#">Northrop Grumman Newport News</a> , Taught 7 times from 2006 to 2010
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Modeling and Simulation:	3 day short course for <u>SPAWAR, U.S. Navy</u> , Norfolk, Virginia, Taught once in 2007
Operation Scheduling	3 day short course at Dept Industrial Engineering <u>University of Bio-Bio, Concepcion, Chile</u> , Taught twice in 2002 and 2003
Data Mining	10 hour short course as a part of Agile Knowledge Management Training taught for <u>Department of The Army</u> in Fall 2011

## BOOKS

Carter, M.W., Price, C.C., and **Rabadi, G.** (2018) “*Operations Research: a Practical Introduction*” 2<sup>nd</sup> edition, CRC Press, Taylor & Francis Group.  
[www.operationsresearch.us](http://www.operationsresearch.us)

**Rabadi, G.** (ed) (2016) *Heuristics, Meta-heuristics and Approximate Methods in Planning and Scheduling*, Series: International Series in Operations Research & Management Science, **Springer** International Publishing Switzerland  
<http://www.springer.com/us/book/9783319260228>

## EDITORIALS

**Rabadi, G.** (2011), Editorial for the inaugural issue of the International Journal of Planning and Scheduling, V1, N1/2, P. 1 – 2

## REFEREED JOURNAL PUBLICATIONS (38 Publications)

(+ indicates a student co-author)

(\* indicates a corresponding author)

**Rabadi, G.\***, Msakni, M.K., Rodriguez-Velasquez, E., Alvarez-Bermudez, W. (2018). “New Characteristics of Optimal Solutions for the Two-Machine Flowshop Problem with Unlimited Buffers, *Journal of Operational Research Society (JORS)*  
<https://doi.org/10.1080/01605682.2018.1475114>

Msakni, M.K., Al-Salem, M., Diabat, A., **Rabadi, G.**, and Kotachi, M. (2018) “Exact methods for the quay crane scheduling problem when tasks are modeled at the single container level”, *Computers & Operations Research*, V. 99, 218 – 233

Arin, A., and **Rabadi, G.\*** (2017) “Integrating Estimation of Distribution Algorithms versus Q-Learning into Meta-RaPS for Solving the 0-1 Multidimensional Knapsack Problem, V. 112, 706–720, *Computers and Industrial Engineering*  
DOI: 10.1016/j.cie.2016.10.022

- Khasawneh, M.\*, Shearer, N., **Rabadi, G.**, Bowling, S.R. (2017) “The Information Age Combat Model: A Vision for A Discrete Event Simulation Approach”, V. 12, No. 5, 429 – 445, *International Journal of Simulation and Process Modelling*
- Khasawneh, M.\*+, **Rabadi, G.**, Bowling, S.R., and Shearer, N. (2017) “Using Integer Partitioning to Determine Unique Configurations for the Information Age Combat Model”, *International Journal of Industrial and Systems Engineering*, V. 26, No. 3, 364 – 380
- Al-Salem, A.\*, Bedoya-Valencia, L. and **Rabadi, G.** (2016) “Exact and Heuristic Algorithms for the Two- Machine Just-In-Time Job Shop Scheduling Problem”, *Mathematical Problems in Engineering*, Volume 2016 (2016) Article ID 6591632, 11 Pages (Open Access)
- Arin, A., and **Rabadi, G.\*** (2016) “Local Search versus Path Relinking in Metaheuristics: Redesigning Meta-RaPS with Application to the Multidimensional Knapsack Problem”, *Applied Soft Computing*, V. 46, 317 – 327
- Rabadi G.**, Stanekzai, A.,S.+ , Cotter, T.S. and Al-Salem, M. (2016) “Gravity Model Extensions for the Impact of Mega Sports Events on Tourist Flow”, *Journal of Economics, Business and Management*, No. 10, Vol. 4, 553 – 560  
doi: 10.18178/joebm.2016.4.10.451  
<http://www.joebm.com/vol4/451-GH0017.pdf>
- Rabadi G.**, Khallouli, W., Al-Salem, M., and Ghoniem, A.\* , (2015) “Planning and Management of Major Sporting Events: A Survey”, *International Journal of Planning and Scheduling*, V. 2, No. 2, 154 – 178
- Kaplan, S.\*+ and **Rabadi, G.** (2015) “Minimizing the Total Weighted Tardiness and Instability for the Parallel Machine Re-scheduling Problem with Deadlines and Ready Times”, *International Journal of Planning and Scheduling*, V. 2, No. 2, 87 – 108
- Arnaout, J-P+, Musa, R., and **Rabadi, G.\*** (2014) “A two-stage Ant Colony Optimization Algorithm to minimize the makespan on Unrelated Parallel Machines - Part II: Enhancements and Experimentations”, *Journal of Intelligent Manufacturing*, V.25, No. 1, P. 43-53, DOI: 10.1007/s10845-012-0672-3
- Köksalmsı, E.+ , Garcia, C.+ , and **Rabadi, G.\*** (2014) “The Optimal Exam Experience: A Timetabling Approach to Prevent Student Cheating and Fatigue”, *International Journal of Operational Research*, V. 21, No. 3, 263-278
- Garcia, C.+ , and **Rabadi, G.\*** (2013) “Exact and approximate methods for parallel multiple-area spatial scheduling with release times”, *OR Spectrum*, V. 35, No. 3, P. 639-657,
- Hancerliogullari, G.\*+, **Rabadi, G.**, Al-Salem, A., Kharbeche, M. (2013) “Greedy Heuristics and Metaheuristics for Multiple Runway Combined Arrival-Departure Aircraft Sequencing Problem”, *Journal of Air Transport Management*, V. 32, 39 – 48
- Kaplan, S.\*+ and **Rabadi, G.** (2013) “A Simulated Annealing and Meta-RaPS Algorithms for the Aerial Refueling Scheduling Problem with Due Date-to-Deadline Windows and Release Time”, *Engineering Optimization*, V. 45, No. 1, P.67-87

- Bowling, S.R., **Rabadi, G.\***, Khasawneh, M.<sup>+</sup>, and Shearer, N.<sup>+</sup> (2013) “Sensitivity Analysis Framework for Large-Scale System-of-Systems Applications”, *International Journal of System of Systems Engineering*, V. 4, No. 1, P. 1 –22
- Deller, S.\*<sup>+</sup>, **Rabadi, G.**, Tolk, A., and Bowling S. (2012) “Organizing for Improved Effectiveness in Networked Operations”, *Military Operations Research Journal (MORS)*, V. 17, No.1, p. 5-16
- Kaplan, S\*<sup>+</sup>, and **Rabadi, G.** (2012), “Exact and Heuristic Algorithms for the Aerial Refueling Parallel Machine Scheduling Problem with Due Date-to-Deadline Window and Ready Times”, *Computers & Industrial Engineering*, V. 62, No. 1, P. 276 – 285
- Bowling, R.S.\*<sup>+</sup>, **Rabadi, G.**, Khasawneh, M.<sup>+</sup>, Shearer, N.<sup>+</sup> and Zhang, J.<sup>+</sup> (2012) “Initiative Mapping Methodology for Systems-of-Systems Applications”, *International Journal of Industrial and Systems Engineering*, V. 10, No.1, P. 75 – 95
- Garcia, C.\*<sup>+</sup> and **Rabadi, G.** (2011) “A Meta-RaPS Algorithm for Spatial Scheduling with Release Times”, *International Journal of Planning and Scheduling*, V. 1, No.1/2, P. 19 – 31
- Garcia, C.\*<sup>+</sup> and **Rabadi, G.\*** (2011) “Optimizing Coordinated Multi-Team Volunteer Scheduling: A Combined Constraint Programming and Goal Programming Approach”. *International Journal of Industrial and Systems Engineering* V. 9, No 2, P. 183 – 193
- Arin, A.<sup>+</sup>, **Rabadi, G.\***, and Unal, R. (2011), “Comparative Studies on Design of Experiments for Tuning Parameters in a Genetic Algorithm for a Scheduling Problem”, *International Journal of Experimental Design and Process Optimisation*, V. 2, No. 2, P. 102 – 124
- Arnaout, J-P.<sup>+</sup>, **Rabadi, G.\*** and Musa, R. (2010) “A Two-stage Ant Colony Optimization to Minimize the Makespan on Unrelated Parallel Machines with Sequence-Dependent Setup Times”, *Journal of Intelligent Manufacturing*, Vol. 21, No. 6, P. 693 – 701
- Keating, C.\*<sup>+</sup>, **Rabadi, G.**, Landaeta, R. and Bowling, S. R. (2009) "System of Systems Engineering for Border Security and Immigration: Methodologies, Processes, & Tools", *International Journal of System of Systems Engineering*, Vol. 1, No. 4, P. 414 – 444
- Deller, S.T.\*<sup>+</sup>, Bell, M.I., Bowling, S.R., **Rabadi, G.**, and Tolk, A. (2009) “Applying the Information Age Combat Model: Quantitative Analysis of Network Centric Operations”, *The International Command and Control (C2) Journal*. Vol. 3, No. 1
- Tolk, A.\*<sup>+</sup>, **Rabadi, G.**, Merino, D. (2009) “Embedding Simulation Education into the Engineering Management Body of Knowledge”, *International Journal of Simulation and Process Modelling*, Vol. 5, No. 1, p. 14 – 19
- Kaylani, A., Mollaghasemi, M., Cope, D., Fayez, S., **Rabadi, G.**, Steele, M. (2008). “A generic environment for modelling future launch operations—GEM-FLO: a success story in generic modelling”, *Journal of the Operational Research Society*, Vol. 59, No.10, P. 1312-1320 (October, 2008)

- Arnaout, J-P.<sup>+</sup> and **Rabadi, G.\*** (2008) “Rescheduling of Unrelated Parallel Machines Under Machine Breakdowns”, *International Journal of Applied Management Science*, Vol. 1, No. 1, P. 75 – 89.
- Landaeta, R.\* , Mun, J., **Rabadi, G.**, and Levin, D. (2008), “Identifying Sources of Resistance to Change in Healthcare”, Vol. 9, No. 1, P. 74 – 95, *International Journal of Healthcare Technology and Management (IJHTM)*
- Arnaout, J-P.<sup>+</sup> and **Rabadi, G.\*** (2007), “Predictable Scheduling With Learning Capability for The Unrelated Parallel Machine Problem”, *International Journal of Operations & Quantitative Management*. Vol. 13, No. 2, P. 115 – 127
- Rabadi, G.\***, Anagnostopoulos, G., and Mollaghasemi, M. (2007), “A Heuristic Algorithm for The Just-In-Time Single Machine Scheduling Problem With Setups: A Comparison With A Simulated Annealing”, *The International Journal of Advanced Manufacturing Technology*, Vol. 32, No. 3-4, P. 326 – 335.
- Abuhilal, L.<sup>+</sup>, **Rabadi, G.\***, and Sousa-Poza, A. (2006), “Supply Chain Inventory Control: A Comparison Among JIT, MRP, and MRP with Information Sharing Using Simulation”, *Engineering Management Journal*, Special Issue on Supply Chain management, Vol. 18, No. 2, p. 51 – 57
- Helal, M.<sup>+</sup>, **Rabadi, G.\***, Al-Salem, A., (2006) “A Tabu Search Algorithm to Minimize the Makespan for Unrelated Parallel Machines Scheduling Problem with Setup Times”, *International Journal of Operations Research*, Vol. 3, No. 3, P. 182 – 192.
- Rabadi, G.\***, Moraga, R., and Al-Salem, A. (2006), “Heuristics for the Unrelated Parallel Machine Scheduling Problem with Setup Times”, *Journal of Intelligent Manufacturing*, Vol. 17, p. 85 – 97.
- Arnaout, J-P.<sup>+</sup>, **Rabadi, G.\***, and Mun, J. (2006) “A Dynamic Heuristic for the Stochastic Unrelated Parallel Machine Scheduling Problem“, Special Issue on Scheduling in Manufacturing, Information, and Service Industries, *International Journal of Operations Research*, Vol. 3, No.2, P. 136 – 143.
- Duwayri, Z.<sup>+</sup>, Mollaghasemi, M., Nazzal, D.<sup>+</sup>, and **Rabadi, G.\*** (2006), “Scheduling Setups Changes at Bottleneck Facilities in Semiconductor Manufacturing”, Special issue on semiconductor manufacturing in *Production Planning and Control Journal*,. Vol. 17, No. 7, P. 717 – 727
- Rabadi, G.\***, Mollaghasemi, M., and Anagnostopoulos, G.C., (2004) “A Branch-and-Bound Algorithm for the Early/Tardy Machine Scheduling Problem with a Common Due-Date and Sequence-Dependent Setup Time”, *Computers & Operations Research Journal*, Vol. 31, No. 10, p. 1727-1751
- Keating, C.\* , Rogers, R., Unal, R., Dryer, D., Sousa-Poza, A., Safford, R., Peterson, W., **Rabadi, G.** (2003), “System of Systems Engineering”, *Engineering Management Journal*, Vol. 15, No. 3, p.36-45.

## MANUSCRIPTS UNDER REVIEW:

Flamand, T., Haouari, M. and **Rabadi, G.** “Column Generation Approaches for the Optimal Deployment Problem”, Under Review, OMEGA

**Rabadi, G.**, Hancerliogullari, G., Kharbeche, M., Ghoniem, A. and Al-Salem, M.\* “A Mathematical Model and Heuristic Approaches for Runway Rescheduling, Under Review, *Computers & Operations Research*

Garcia, C., **Rabadi, G.**, and Handy, F., Dynamic Resource Allocation and Coordination for High-Load Crisis Volunteer Management, Special issue on Humanitarian Operations, Under Review, *Journal of Humanitarian Logistics and Supply Chain Management*

## BOOK CHAPTERS (8 CHAPTERS)

(+ indicates a student co-author)

(\* indicates a corresponding author)

Garcia, C.\* and **Rabadi, G.** (2016) “Approximation Algorithms for Spatial Scheduling”, Book Chapter 1 in Rabadi (ed.), “Heuristics, Metaheuristics and Approximate Methods in Planning and Scheduling”

Soykan, B.+\* and **Rabadi, G.** (2016) “A Metaheuristic Algorithm for The Runway Scheduling Problem”, Book Chapter in Rabadi (ed.), “Heuristics, Metaheuristics and Approximate Methods in Planning and Scheduling”

Arin, A.+\* and **Rabadi, G.** (2016) “Performance of an Intensification Strategy based on Learning in a Metaheuristic: Meta-RaPS with Path Relinking”, Book Chapter in Rabadi (ed.), “Heuristics, Metaheuristics and Approximate Methods in Planning and Scheduling”

Deller, S.+\*, **Rabadi, G.**, Tolk, A. and Bowling, S. (2016) “Organizing for Improved Effectiveness in Networked Operations”, Reprint, Book chapter 13 in Jeffrey R. Cares and John Q. Dickmann (ed), “*Operations Research for Unmanned Systems*”, John Wiley

Deller, S.+\*, Tolk, A., **Rabadi, G.**, and Bowling, S. (2014) “Improving Command and Control Effectiveness based on Robust Connectivity”, Book Chapter in Tim Grant, René Janssen, and Herman Monsuur (ed), “*Network Topology and C2 Systems: Design, operations, and evolution*”, pp. 176-190, publisher: IGI-Global, 2014  
DOI: 10.4018/978-1-4666-6058-8.ch008

Arin\*+, A., and **Rabadi, G.**(2012) “Memory and Learning in Metaheuristics”, Book Chapter in Xin-She Yang (ed), *Artificial Intelligence, Evolutionary Computation and Metaheuristics in Studies in Computational Intelligence*, pp. 435 – 476, Springer-Verlag, Berlin-Heidelberg 2012.

Pinto, C. A.\*, **Rabadi, G.**, Talley, W. K., (2008) “Chapter 12: Port Security in the US”, a Chapter in edited book entitled “Maritime Safety, Security and Piracy”, edited by W.K. Talley, P. 219 – 235, INFORMA LLP., London, U.K.



**Rabadi, G.\***, Pinto, C.A., Talley, W., and Arnaout, J-P. <sup>+</sup> (2007), “Port Recovery from Security Incidents: A Simulation Approach”, Chapter 5 (p. 83 – 94) in Bichou, Bell & Evans: Risk Management in Port Operations, Logistics and Supply Chain Security, INFORMA/Lloyd’s List Publishing, London, UK.

### PEER REVIEWED RESEARCH CONFERENCE PAPERS (57 Papers)

(+ indicates a student co-author at the time of the publication; \* indicates a corresponding author)

Kotachi, M<sup>+</sup>, **Rabadi, G.**, Seck, M., Msakni, M., Al-Salem, M., and Diabat, A. (2018) Sequence-Based Simulation Optimization of Container Terminals, 2018 IEEE Technology and Engineering Management Conference (TEMSCON), June 27 – July 1, 2018, Chicago, Illinois

Al-Doali, **Rabadi, G.**, Seck, M., and Handley, H. (2018) Hybridizing Meta-RaPS with Machine Learning Algorithms, 2018 IEEE Technology and Engineering Management Conference (TEMSCON), June 27 – July 1, 2018, Chicago, Illinois

Msakni, M.K., Al-Salem, M., **Rabadi, G.**, Kotachi, M.<sup>+</sup>, and Diabat, A. (2018) “Quay Crane Scheduling with Vessel Stability”, Transportation Research Procedia, EURO Mini Conference on Advances in Freight Transportation and Logistics, 7-9 March 2018, Padova, Italy

Kotachi, M., **Rabadi, G.**, Msakni, M.K., Al-Salem, M. and Diabat, A. (2016) “A Discrete Event Simulation for the Logistics of Hamad’s Container Terminal of Qatar”, Proceeding of the 2016 *Winter Simulation Conference*, Washington DC, December 11 – 14, 2016

Msakni, M.K., Al-Salem, M., Diabat, A., **Rabadi, G.**, Kotachi, M.<sup>+</sup> (2016) “An Integrated Quay Crane Assignment and Scheduling Problem Using Branch-and-price”, Proceedings of the 2016 International Conference on Computational Science and Computational Intelligence, Published by IEEE Computer Society Conference Publishing Services, Dec 15 – 17, 2016, Las Vegas, NV

Soykan, B.\*<sup>+</sup> and **Rabadi, G.** (2016) “A Hybrid Metaheuristic Algorithm for Multi-Objective Runway Scheduling Problem in Simulation-based Optimization”, Proceedings of MODSIM World, April 2016, Virginia Beach, Virginia

Arin, A. <sup>+</sup> and **Rabadi, G.\*** (2015) “Statistical Learning Versus Machine Learning: Integrating Estimation of Distribution Algorithms Versus Q-Learning Into Meta-Raps”, Proceedings of the *International Conference on Computers & Industrial Engineering*, Metz, France, October 28-30, 2015

Seck, M.\* , **Rabadi, G.**, and Koestler, C.<sup>+</sup> (2015) “A Simulation-based Approach to Risk Assessment and Mitigation in Supply Chain Networks”, *Procedia Computer Science* 61 (98 – 104), Complex Adaptive Systems Conference, Nov. 2 –4, 2015, San Jose, California.

- Al-Duoli, F.<sup>+</sup> and **Rabadi, G.\*** (2014) “Data Mining based Hybridization of MetaRaPS”, Proceedings of *Complex Adaptive Systems Conference*, 2014, Philadelphia, PA, Nov 3-5
- Kotachi, M.<sup>+</sup>, **Rabadi, G.\*** (2014) “Simulating and Analyzing the Assignment of Cranes to Ships According to Ship Size in a Complex Container Terminal”, *Proceedings of the American Society for Engineering Management 2014 International Annual Conference*, S. Long, E-H. Ng, and C. Downing eds., Virginia Beach, VA, October 15-18, 2014
- Kotachi, M.<sup>+</sup>, **Rabadi, G.\***, and Obeid, M. (2013), “Simulation Modeling and Analysis of Complex Port Operations with Multimodal Transportation”, *Procedia Computer Science* 20 ( 2013 ) 229 – 234, *Complex Adaptive Systems*, 2013, Baltimore, MD, Nov 13-15
- Al-Duoli, F.<sup>+</sup> and **Rabadi, G.\*** (2013) “Employing Learning to Improve the Performance of Meta-RaPS”, *Procedia Computer Science* 20 ( 2013 ) 46 – 51, *Complex Adaptive Systems*, 2013, Baltimore, MD, Nov 13-15
- Hancerliogullari, G.<sup>+</sup>, **Rabadi, G.\***, Kharbeche, M., Al-Salem, A. (2012), “Heuristic Algorithms for Aircraft Sequencing Problem”, Proceedings of the 33<sup>rd</sup> International Annual Conference of the American Society for Engineering Management, Virginia Beach, VA (October 17-20).
- Brelsford, J.<sup>+</sup> and **Rabadi, G.\*** (2012) “Emergency Room Staff Scheduling Using a Two-Stage Non-linear and 0-1 Integer Programming Model, Proceedings of the 1<sup>st</sup> Industrial And Systems Engineering World Conference, P. 22 – 29, Washington, D.C, USA, September 16-18, 2012
- Arin, A.<sup>+</sup>, and **Rabadi, G.** (2012) “Meta-RaPS with Q Learning Approach Intensified by Path Relinking for the 0-1 Multidimensional Knapsack Problem”, Proceedings of the 14th International Conference on Artificial Intelligence (ICAI'12), July 16-19, 2012, Las Vegas, USA.
- Arin, A.<sup>+</sup>, and **Rabadi, G.** (2012) “Meta-RaPS with Path Relinking for the 0-1 Multidimensional Knapsack Problem”, Proceeding of the 6th IEEE International Conference on Intelligent Systems, Sofia, Bulgaria, September 6-8, 2012
- Garcia, C.<sup>+</sup>, and **Rabadi, G.\*** (2012) “Robust Optimization Models for Volunteer Scheduling”, Proceedings of the 2012 Industrial and Systems Engineering Research Conference G. Lim and J.W. Herrmann, eds., Orlando, FL, May 19 – 23
- Rabadi, G.\***, Hancerliogullari, G.<sup>+</sup>, Kharbeche, M., Al-Salem, A. (2012) “Meta-heuristics for Aircraft Arrival and Departure Scheduling on Multiple Runways”, Proceedings of the 2012 Industrial and Systems Engineering Research Conference G. Lim and J.W. Herrmann, eds., Orlando, FL, May 19 – 23
- Arin, A.<sup>+</sup>, **Rabadi, G.** (2011), “Integrating Machine Learning into Meta-RaPS via Q Learning”, 2<sup>nd</sup> Annual International Conference on Advanced Topics in Artificial Intelligence, ATAI 2011, November 24-25, SINGAPORE.

- Arin, A.<sup>+</sup>, **Rabadi, G.** (2011), “Creating a Smart Algorithm: Meta-RaPS via Estimation of Distribution”, International Conference of Optimization 2011, July 24-27, Lisbon, PORTUGAL
- Kaplan, S.<sup>+</sup>, and **Rabadi, G.** (2010). “Aerial Refueling Process Rescheduling Under Job Related Disruptions”, Proceedings of the Modeling and Simulation (MODSIM) World 2010 Conference, Hampton, VA, Oct 13-15, 2010
- Kaplan, S.<sup>+</sup>, Arin, A.<sup>+</sup>, and **Rabadi, G.** (2010) “Meta-Raps Algorithm for Aerial Refueling Process Scheduling Problem”, Proceedings of the Modeling and Simulation (MODSIM) World 2010 Conference, Hampton, VA, Oct 13-15, 2010
- Rabadi, G.** and Kaylani, H. (2010), “Towards a Center for Modeling and Simulation: The Case for Jordan” in Barjis, J., Narasipuram, M.M., & **Rabadi, G.** (Eds.) (2010). Proceedings of the 6th International Workshop on Enterprise & Organizational Modeling and Simulation, Hammamet, Tunisia. CEUR-WS, Volume 601, ISSN: 1613-0073, P. 99 - 112
- Arnaout, G.<sup>+</sup>, Rodriguez-Velasquez, E.<sup>+</sup>, **Rabadi, G.\***, Musa, R. (2010), “Modeling Cross-Docking Operations using Discrete Event Simulation”, in Barjis, J., Narasipuram, M.M., & **Rabadi, G.** (Eds.) (2010), Proceedings of the 6th International Workshop on Enterprise & Organizational Modeling and Simulation, Hammamet, Tunisia. CEUR-WS, Volume 601, ISSN: 1613-0073, P. 113 – 120
- Rodriguez-Velasquez, E.<sup>+</sup>, Arnaout, G. <sup>+</sup>, **Rabadi, G.\*** and Musa, R. (2010) “Modeling cross-dock networks with time constraints using simulation”, Proceedings of The IEEE Systems and Information Engineering Design Symposium (SIEDS'10), Charlottesville, Virginia, P. 52 – 56
- Shearer, N.<sup>+</sup>, Khasawneh, M. <sup>+</sup>, Jun Zhang<sup>+</sup>, Bowling, S., and **Rabadi, G.\*** (2010), “Sensitivity Analysis of a large-scale system dynamics immigration model”, Proceedings of The IEEE Systems and Information Engineering Design Symposium (SIEDS'10), Charlottesville, Virginia, P. 78 – 81.
- Arin, A. <sup>+</sup>, **Rabadi, G.**, and Unal, R. (2009), “Tuning Parameters In Heuristics By Using Design Of Experiments Methods”, Proceedings of Modeling and Simulation (MODSIM) World 2009 Conference & Expo, October 14 -16, 2009, P. 73 – 78, Virginia Beach, VA
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- Deller, S. <sup>+</sup>, **Rabadi, G.**, Bell, M., Bowling, S., Tolk, A. (2009), “Modeling the Information Age Combat Model: An Agent-Based Simulation of Network Centric Operations”, Proceedings of Modeling and Simulation (MODSIM) World 2009 Conference & Expo, October 14 -16, 2009, P. 9 -15, Virginia Beach, VA
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Steele, M. J., Mollaghasemi, M., **Rabadi, G.**, and Cates, G. R. (2002). “Generic Simulation Models of Reusable Launch Vehicles”. In E. Yücesan, C.-H. Chen, J. L. Snowdon, and J. M. Charnes (eds.), *Proceedings of the 2002, Winter Simulation Conference*, 747 – 753.

**Rabadi, G.** (2001) “Application of Constraint Programming to a Scheduling Problem with a Common Due Date and Setup Times”, *Proceeding of the 1<sup>st</sup> International Industrial Engineering Conference*, Amman, Jordan pp. 275-284.

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- Kaylani, A. <sup>+</sup>, and **Rabadi, G.** (2001) “Application of Industrial Engineering Practices to Software Development Using Database Representation of the Software Process”, *Proceeding of the 1<sup>st</sup> International Industrial Engineering Conference*, Amman, Jordan, pp. 425-432.
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- Mollaghasemi, M., **Rabadi, G.**, Cates, G., Correa, D., Steele, M., and Shelton, D. (2000) “Simulation Modeling and Analysis of Space Shuttle Flight Hardware Processing”, *Proceeding of Harbour, Maritime & Multimodal Logistics Modeling and Simulation Workshop*, a publication of the *Society for Computer Simulation International (SCS)*, Portofino, Italy, pp. 59-62.

## AWARDS AND CREATIVE WORK:

1. **NATO Global Innovation Challenge** (2017). *Logistical Decision Support Systems for Efficient Disaster Relief* (\$15,000, and \$10,000 in services). Teams members: Faculty: Mamadou Seck, **Ghaith Rabadi**, Jingwei Huang.  
Students: Hesamoddin Tahami, Chris Knight, Wael Khallouli
2. **Doctoral Mentoring Award** (2016), Old Dominion University award for mentoring Ph.D. students.
3. **Fulbright Specialist Program Award** (2008), “Business Plan Development for a Center for Modeling and Simulation in Jordan”, in Collaboration with the German-Jordanian University, June – July, 2008, Amman, Jordan.
4. **NASA Board Action Invention Award** (2007) granted by NASA administrator Michael Griffin for the invention of “*a Generic Simulation Environment for Modeling Future Launch Operation (GEM-FLO)*”, NASA Case No. KSC-12488
5. **NASA Software Invention Award** (2006) granted by NASA administrator Michael Griffin for the “*Space Shuttle Macro-Level Discrete-Event Simulation Model*”, NASA Case No. KSC-12497.
6. Recognized by **NASA’s** administrator Mr. Sean O’Keefe in 2005 for the creative development of a technical innovation that has been approved for publication as a NASA tech

brief entitled: “*a Generic Simulation Environment for Modeling Future Launch Operation (GEM-FLO)*”

7. Nominated by the department of Engineering Management and Systems Engineering, and the College of Engineering for ODU’s *Faculty Research Achievement Award 2013*
8. Nominated by the Chair of the Engineering Management Department and Systems Engineering for the SCHEV Outstanding Faculty “Teaching with Technology” award in 2006. (SCHEV is State Council of Higher Education for Virginia)
9. Nominated by the Institute of Industrial Engineers for New Faces in Engineering" at the National Engineers Week in 2004
10. NASA/ASEE Faculty Fellowship in 2003: Worked at NASA Langley for 3 months
11. Nominated for the *Best Research Presentation Competition* during the NASA/ASEE Faculty Fellowship Program in 2003 (number of nominees was 5 out of 40 fellows)
12. Lucent Technologies Industrial Fellowship: 3 years of support for Ph.D. program, 1996 – 1999
13. Honeywell Leadership Scholarship, 1998

### **TECHNICAL REPORTS: (13 Reports)**

Seck, M. and **Rabadi, G.** (2016). NATO Logistics Simulation: User Operational Requirements Assessment, Grant# 600203-010, Agency: NATO-Allied Command Transformation, 26 pages

**Rabadi, G.** and Al-Salem (2015). Analytics via Operational and Logistical Simulation and Animation Models for Doha’s New Port, Progress Report, Grant# 600195-010, Agency: Qatar National Research Fund (through Qatar University), NPRP07-796-2-297

Ghoniem, A., **Rabadi, G.** and Al-Salem, M. (2014). Analytics for System Wide Infrastructure and Capacity Planning for Qatar 2022 FIFA World Cup: Preliminary findings. Grant# 703301 Agency: Qatar Foundation (QNRF NPRP 6-248-5-023)

Ghoniem, A., Al-Salem, A., **Rabadi, G.**, Sherali, H., and Kharbeche, M.(2013), “Integrated Modeling and Optimization Approaches for Airport Terminal Area Management, Grant# 703391 Agency: Qatar Foundation (QNRF NPRP 09-253-2-103), Pages: 133, Figures: 5.

**Rabadi, G.**, Bowling, S. R., and Keating, C. (2007) “Sensitivity Analysis for the Secure Border Initiative System Dynamics Simulation Model”, grant # 763641, Agency: MITRE and DHS – Phase I, Pages: 21, Figures: 6, Tables: 9.

Konwin, K., Keating, C., **Rabadi, G.**, and Bowling, S. (2007) “Risk-Based Capability Assessment for the Secure Border Initiative System Dynamics Simulation of Immigration to the U.S.”, grant # 763641, Agency: MITRE and DHS, Pages: 18, Figures: 6, Tables: None.

- Keating, C. and **Rabadi, G.** (2007) “System of Systems Engineering for Border Security and Immigration: Methodologies, Processes and Tools”, grant # 775021, Agency MITRE and DHS, Pages: 49, Figures: 6, Tables: 6.
- Bowling, S.R., **Rabadi, G.**, Keating, C. (2007), “Sensitivity Analysis for the Secure Border Initiative System Dynamics Immigration Model“, Agency MITRE and DHS — Phase II , Pages: 83, Figures: 71, Tables: 47.
- Rabadi, G.**, (2006) “The Border Control Simulation Learning Environment (*BSim*)”, Technical Report, grant # 247591, Dept. Homeland Security, Pages: 26, Figures: 19, Tables 1.
- Pinto, C. A., **Rabadi, G.**, Talley, W., and Arnaout, J-P (2006),”Security Risk Analysis of Norfolk International Terminals”, Final Report for grant #560011, Agency: Virginia Port Authority, Pages: 20, Figures: 4, Tables: 2.
- Rabadi, G.**, (2005) “Development of the Architectural Simulation Model for Future Launch Systems and Its Application To an Existing Launch Fleet”, Final report for grant #140435, Agency: NASA, Pages: 24, Figures: 4, Tables: 5.
- Unal, R., and **Rabadi, G.** (2003) “Development of A Simulation Approach For Launch Vehicle Operations & Support Assessment”, Final report for grant #124161, Agency: NASA, Pages: 20, Figures:4, Tables: 3, References: 6.
- Rabadi, G.**, (2003) “A Discrete-Event Simulation Model to Assess Operations and Support Cost of Launch System Architectures” Final report for NASA/ASEE Faculty Fellowship Program, Agency: NASA, Pages: 13, Figures:4, Tables: 3.

## **PUBLISHED ABSTRACTS AND PRESENTATIONS (23 Abstracts)**

- Rabadi, G.**, Kotachi, M.<sup>+</sup>, Msakni, M.K., Al-Salem, M. and Diabat, A. (2016) “A Discrete Event Simulation for the Logistics of Hamad’s Container Terminal of Qatar”, INFORMS 2016, Nashville, Tennessee, Nov 13-16, 2016
- Rabadi, G.**, and Seck, M. (2016) “Optimization and Simulation Models for Transporting NATO Assets, NATO’s Forum on Movement and Transportation, NATO-ACT, Norfolk, VA, Nov 17, 2016
- Seck, M. and **Rabadi, G.** (2016) “NATO Logistics Simulation: User Operational Requirements Assessment, NATO Allied Command Transformation (ACT) Tide Sprint Conference, Virginia Beach, VA, October 27 – October 31, 2016
- Rabadi, G.**, Al-Salem, M., Ghoniem, A. (2015) “A Gravity Model for Tourist Forecasting at FIFA Soccer World Cups”, INFORMS 2015, Philadelphia, PA, Nov 1 – 4, 2015
- Rabadi, G.**, Al-Salem, M., Ghoniem, A., and Ali, A. (2014), “Analyzing and Forecasting Attendance at FIFA Soccer World Cups”, INFORMS 2014, San Francisco, California, Nov 9-12, 2014
- Köksalınış, E.<sup>+</sup>, Garcia, C.<sup>+</sup>, and **Rabadi, G.** (2013) “A Mixed-Integer Programming Model for Examination Timetabling Problem”, Industrial Engineering Annual Conference, San Juan, Porto Rico, May 18 – 22, 2013
- Rabadi, G.**, Ghoniem, A., Al-Salem, A., Sherali, H., Kharbeche, M., Farhadi, F.<sup>+</sup>, Hancerliogullari, G. (2012) “Aircraft Scheduling on Multiple Runways”, Joint Qatar



Foundation Annual Research Forum and Arab Expatriate Scientists Network, October 21-23, 2012, Doha, Qatar

Hancerliogullari, G. <sup>+</sup>, **Rabadi, G.** (2012), “Approximate Algorithms for Aircraft Rescheduling Problems Under Operation Disruptions”, INFORMS 2012, Phoenix, AZ (October 14-17).

Arin, A. <sup>+</sup>, and **Rabadi, G.** (2011), “Online Parameter Tuning: Another Aspect of Learning for Metaheuristics”, 25<sup>th</sup> European Conference on Operational Research, EURO 2012, July 08-11, Vilnius, Lithuania

**Rabadi, G.**, Hancerliogullari, G. <sup>+</sup>, Al-Salem, A. (2011) “Approximate Algorithms for Aircraft Arrival and Departure Scheduling over Multiple Runways, INFORMS 2011, Charlotte, North Carolina

Pinto, C. A., **Rabadi, G.**, Talley, W., and Arnaout, J-P. <sup>+</sup> (2006) “Risk, Resiliency, and Port Security: A framework Towards Continuity of Competitiveness in Port Operations, *Annual Meeting of the Society for Risk Analysis*, December 3-6, 2006 Baltimore, Maryland

**Rabadi, G.**, Bouchard, J., Keever, J., Crouch, K., Verdery, S., (2006), Panel on “Modeling & Simulation Scenarios for Maritime and Transportation Security”, in *Merging the Study of Maritime Trade and Security Workshop*, Hampton, Virginia.

**Rabadi, G.** (2005) “Development of the Architectural Simulation Model for Future Launch Systems and its Application to an Existing Launch Fleet”, Presented at NASA Langley Research Center.

**Rabadi, G.** (2004) “Operational Simulation Modeling for Architectures of Future Space Launch Vehicles, *The 6<sup>th</sup> Annual Industrial Engineering Simulation Solution Conference (IE SimSol)*, Orlando, Florida

Bedoya, L. <sup>+</sup>, Correa, Y. <sup>+</sup>, and **Rabadi, G.** (2004) “Dynamic Scheduling in Assembly Flow Shop Environments Considering Earliness and Tardiness”, *INFORMS Denver*, Colorado.

**Rabadi, G.** (2003) “A Discrete-Event Simulation Model to Assess Operations and Support Cost of Launch System Architectures”, *NASA Faculty Fellowship Program Finalist Presentation* in the Best Research Presentation Competition.

**Rabadi, G.**, Mollaghasemi, M., Cates, G., and Steele, M. (2001) “A Discrete-Event Simulation Model for the Space Shuttle Ground Processing Operations at Kennedy Space Center, *Simulation and Modeling for Acquisition, Requirements and Training (SMART) Conference*, Orlando, Florida.

**Rabadi, G.**, Salem, A., and Anagnostopoulos, G.C. (2001) “A Branch-and-Bound for a Parallel Machine Scheduling Problem with Setup Times”, *INFORMS Miami*, Florida.

**Rabadi, G.**, and Mollaghasemi, M. (2000) “A New Heuristic for the Ion Implanters Scheduling Problem in a Semiconductor Wafer Fabrication Plant”, San Antonio, Texas

**Rabadi, G.**, and Mollaghasemi, M. (1999) "A New Heuristic to Solve the Early/tardy Problem with Sequence-Dependent Setup Times", *INFORMS Cincinnati*, Ohio.

**Rabadi, G.**, and Mollaghasemi, M. (1999) “A New Branch-and-Bound Algorithm to Solve the Just-In-Time Scheduling Problem”, *INFORMS Philadelphia*, Pennsylvania.

**Rabadi, G.**, and Mollaghasemi, M. (1998) "Determination of Optimal Due Dates & Sequence to Minimize Earliness & Tardiness with Sequence-Dependent Setup Times", INFORMS Montreal, Canada.

**Rabadi, G.**, and Mollaghasemi, M. (1997) "Application of Genetic Algorithm to the Early/Tardy Problem with Sequence-Dependent Setup Times", INFORMS San Diego, California.

**GRANTS AWARDED: (Total including collaborative institutions: \$4,128,808; Total for ODU: \$2,604,362)**

**Primary Investigator (Total of \$686,158)**

**Rabadi, G.** and Seck, M. *Modeling and Simulation for NATO's Rapid Deployment Logistics*. Agency: **NATO Allied Command Transformation**, July 6, 2017 – December 31, 2017, **Amount: \$56,000**

**Rabadi, G.** *Analytics via Operational and Logistical Simulation and Animation Models for Doha's New Port*, Agency: **Qatar Foundation** through Qatar University, January, 2015 – January, 2018, **Amount: \$207,312**

**Rabadi, G.** "Analytics for System-wide Infrastructure and Capacity Planning for Qatar 2022 FIFA World Cup", Agency: **Qatar Foundation** through Qatar University, November, 2013 – December, 2015, **Amount: \$33,258**

**Rabadi, G.** "Integrated Modeling and Optimization Approaches for Airport Terminal Area Management", Funding Agency: **Qatar Foundation** through Qatar University, December, 2010 – January, 2013, **Amount: \$65,050**, Contract No.: 703391 (This is ODU's share; total project amount including other PIs: **\$493,033**)

**Rabadi, G.**, "Database Development for STIHL's Guide Bar Facility", Agency: **STIHL Inc.**, October 2009 – December 2009, **Amount \$6,900**

**Rabadi, G.**, and Bowling, S., "Process Modeling and Scheduling at Northrop Grumman Shipbuilding", Agency: **Northrop Grumman Shipbuilding**, September 2008 – June 2009, **Amount: \$86,520** (This contract was stopped due to shortage in funding)

**Rabadi, G.** Keating, C., Bowling, S., Landaeta, R., Earnest, D., Unal, R., "System-of-Systems Engineering Modeling and Analysis for the Secure Border Initiative (SBI)", Agency: **MITRE Corporation** (funded by the Department of Homeland Security), June 2007 – September 2007, **Amount: \$145,000**, Contract No.: 775021.

**Rabadi, G.** and Ardalan, A. (Co-Primary Investigator, Collaborator from the College of Business, ODU), "A Simulation-based Cost Modeling for Assembly Flow Shop Just-In-Time Problems", Agency: Office of Research at Old Dominion University, May 2005 – August 2005, **Amount: \$11,000**, Contract No.:992001

**Rabadi, G.**, “Research Extension of The Architectural Simulation Model for Existing and Future Launch Systems”, Agency: **NASA** Langley Research Center, July 2004-February 2005, **Amount: \$28,118**, Contract No.: 140453 (extension)

**Rabadi, G.**, “Operation and Support Cost Assessment Research Based on an Architectural Simulation Model for Future Launch Systems”, Agency: **NASA** Langley Research Center, October 2003-February 2004, **Amount: \$35,000**, Contract No.: 140453

**Rabadi, G.**, “*NASA/ASEE Faculty Fellowship*”, Agency: **NASA** Langley Research Center, June 2003-August 2003, **Amount: \$12,000**, Contract No.: 131941

**Co-Primary Investigator (Total of \$3,498,650)**

Seck, M., **Rabadi, G.** “NATO Logistics User Operations Requirements Assessment”. Agency: NATO’s Headquarter, Supreme Allied Commander Transformation, June 30, 2016 – November 30, 2016. Amount: \$44,800

**Rabadi, G. (ODU)**, Al-Salem, A. (Qatar University), Diabat, A. (Masdar Institute of Science and Technology). “*Analytics via Operational and Logistical Simulation and Animation Models for Doha’s New Port*”, Agency: Qatar National Research Fund (QNRF) of **Qatar Foundation through Qatar University**, January, 2015 – January, 2018, **Amount: \$823,033** (ODU’s share is \$207,312, which is included in the PI’s total and not included in the Co-PI’s total)

Ghoniem, A. (UMASS Amherst), **Rabadi, G. (ODU)**, and Al-Salem (Qatar University), A. “*Analytics for System-wide Infrastructure and Capacity Planning for Qatar 2022 FIFA World Cup*”, Agency: **Qatar Foundation**, November, 2013 – December, 2016, **Amount: \$570,000** (ODU’s share is \$33,258, which is included in the PI’s total and not included in the Co-PI’s total)

Ghoniem, A., **Rabadi, G.**, and Al-Salem, A. “Integrated Modeling and Optimization Approaches for Airport Terminal Area Management”, Funding Agency: **Qatar Foundation**, December, 2010 – January, 2013, **Amount: \$493,033** (ODU’s share is \$65,050, which was included in the PI’s total and not included in the Co-PI’s total)

Landaeta, R., **Rabadi G.**, Pinto, C.A., Pazos, M.P., Hester, P., Handley, H., Daniels, C., Pitts, M., Hoffman, J., Nelson, M., Mukkamala, R., Meyers, Kern, D., Wu, H., and He, W., “Agile Knowledge Management Graduate Certificate Training Program”, Funding Agency: **Department of the Army**, May 2011-Sep2012, **Amount: \$300,000**

Bowling, S., **Rabadi, G.**, Landaeta, R., Pazos-Lago, M., Daniels, C., Pinto, C., Kady, R., and Hester, R. “The Usefulness of Mini Lectures Supplements in an Online Teaching Environment”, Faculty Innovator Grant, Agency: Center for Learning Technologies at ODU, 2010, **Amount: \$3,000**.

Kady, R., **Rabadi, G.**, Bowling, S., Robertson, J., and Mielke, R., “The Development of Modeling and Simulation Engineering Courses in Support of Modeling and Simulation Graduate Program”, Agency: **Boeing**, January 2009 – December 2009, **Amount: \$100,000**, Contract No.: 793151

- Landaeta, R., **Rabadi, G.**, Watson-Papelis, G., Daniels, C., Blowing, S., Pazos, P.  
“Deployment and Evaluation of a Customized Project Management Development Program for the US Army Corps of Engineers-Norfolk District (USACE-NAO) (Phase III). Agency: **Army Corps of Engineers**—Norfolk District, January 2010 – May 2010, **Amount: \$60,330.**
- Landaeta, R. **Rabadi, G.**, Watson-Papelis, G., Daniels, C., Blowing, S., Pazos, P. “Design of a Customized Project Management Development Program for the US Army Corps of Engineers-Norfolk District (USACE-NAO) (Phase II)”. April 2009-December 2009. Agency: **Army Corps of Engineers**—Norfolk District, **Amount: \$77,282**
- Bowling, S. (PI), **Rabadi, G.**, Keating, C., Landaeta, R., Earnest, D., “System-of-Systems Engineering Modeling and Analysis for the Secure Border Initiative (SBI)-Phase II”, Agency: **MITRE** Corporation (funded by the Department of Homeland Security), October 2007 – March 2008, **Amount: \$130,000**, Contract No.: 781681.
- Keating, C., (PI), **Rabadi, G.**, Sousa-Poza, A., and Bowling, S.R., “System-of-Systems Engineering Analysis for the Secure Border Initiative (SBI)”, Agency: **MITRE** Corporation funded by the Department of Homeland Security, March 2006 – March 2007, **Amount: \$228,580**, Contract No.: 763641
- Pinto, C. (PI), **Rabadi, G.**, and Talley, W., “Security Risk Analysis of Norfolk International Terminal (NIT)”, Agency: **Virginia Port Authority**, October 2005 – September 2006, **Amount: \$110,000**, Contract No.: 560011
- Keating, C. (PI), Loftin, B., Sousa-Poza, A., **Rabadi, G.**, Mun, J., and Landaeta, R., “The Department of Homeland Security Border System-of-Systems Engineering Analysis”, Agency: **Department of Homeland Security** through NAVAIR, October 2004 – March 2006, **Amount: \$819,212**, Contract No.: 247591
- Earnest, D. (Department of Political Science & Geography – PI) and **Rabadi, G.**, “Faculty Innovator Grant” for developing an Agent-based simulation graduate course entitled *Beyond the Butterfly Effect: An Introduction to Simulation.*, Agency: Center for Learning Technologies at ODU, 2006, **Amount: \$3,000.**
- Mun, J. (PI) and **Rabadi, G.** “*Flow Management Research for Sentara Leigh Hospital*”, Agency: **Sentara** Leigh Hospital, October 2003-June 2004, **Amount: \$10,000**, Contract No.: 741191
- Unal, R. (PI) and **Rabadi, G.**, “*Development of A Simulation Approach for Launch Vehicle Operations and Support Assessment*”, Agency: **NASA** Langley Research Center, September 2002-May 2003, **Amount: \$32,000**, Contract No.: 124161

## **MANUSCRIPTS IN PREPARATION:**

- Isik, O., Unal, R., Kaylan, A., and **Rabadi, G.**, “An Integrated Probability Based Approach for Multiple Response Surface Optimization”, Under Second Review, Applied Stochastic Models in Business and Industry

Bedoya-Valencia, L. and **Rabadi, G.** “A Combinatorial auction-based approach for the Job Shop Scheduling Problem with earliness and tardiness over a common due date”, in progress

### **PENDING GRANTS:**

Seck, M., and **Rabadi, G.** “Simulation based optimization decision support system for national power infrastructure planning”, Agency: Qatar National Research Fund (QNRF), National Research Priority Program (NPRP), Amount: \$599,868, August 15, 2018 – September 30, 2021

### **PH.D. STUDENTS ADVISED (15 PH.D. STUDENTS)**

1. Jean-Paul Arnaout, Associate Professor and Associate Dean of the Business College, Gulf University for Science and Technology, Kuwait  
Graduated in Fall, 2006  
Dissertation: A Robust Reactive Scheduling System with Application to Parallel Machine Scheduling
2. Leonardo Bedoya-Valencia, Assistant Professor, Department of Engineering, Colorado State University – Pueblo, Graduated in Fall, 2007  
Dissertation: Exact and Heuristic Algorithms for the Job Shop Scheduling Problem with Earliness and Tardiness Over a Common Due Date
3. Okay Isik, Lieutenant Colonel and Assistant Professor, the Turkish Airforce Academy, Istanbul, Turkey, Graduated in Fall 2009  
Dissertation: An Integrated Probability-Based Approach for Multiple Response Surface Optimization
4. Sean Deller, Retired Lieutenant Colonel, U.S. Army, and is currently Senior Principal Systems Engineer at Raytheon  
Graduated in Summer 2009  
Dissertation: Towards the Quantitative Analysis of the Connectivity Value of Networked Operations
5. Chris Garcia, Associate Professor, College of Business, University of Mary Washington, Graduated in Fall 2010  
Dissertation: Optimization Models and Algorithms for Spatial Scheduling
6. Sezgin Kaplan, Captain and Assistant Professor at the Turkish Airforce Academy, Istanbul, Turkey, Graduated in Spring 2011  
Dissertation: Optimization Models And Approximate Algorithms For The Aerial Refueling Scheduling And Rescheduling Problems
7. Elkin Rodriquez, Assistant Professor, University of Columbia, Columbia, Graduated in Summer 2011  
Dissertation: Random Keys Genetic Algorithm Scheduling and Rescheduling System for Common Production Systems

8. Mahmoud Khasawneh, Assistant Professor, Texas A&M International University, Laredo, Texas; Graduated in Summer 2012  
Dissertation: A Discrete Event Simulation of Network Centric Operations: Modeling Unbalanced Combat Configurations in Symmetric Engagements
9. Nevan Shearer, Research Scientist, Sandia Labs, Albuquerque, New Mexico Graduated in Summer 2012  
Dissertation: Examining Combat Effectiveness in Asymmetric Engagements with Balanced Forces using the Information Age Combat Model
10. Arif Arin, Lieutenant Colonel, the Turkish Airforce, Ankara, Turkey, Graduated in Summer 2012  
Dissertation: Incorporating Memory and Learning Mechanisms into Meta-RaPS (Meta-Heuristic for Randomized Priority Search)
11. Gulsah Hancerliogullari, Assistant Professor, Department of Industrial Engineering Istanbul Technical University, Istanbul, Turkey  
Graduated in Summer 2013  
Dissertation: Approximate algorithms for the combined arrival-departure aircraft sequencing and reactive scheduling problems on multiple runways
12. Fatemah Al-Duoli, Principle Systems Engineer, BAE Systems, Washington DC.  
Graduated in Summer 2015  
Dissertation: Meta-Raps Hybridization with Machine Learning Algorithms
13. Mark Doran, US Coast Guard, Norfolk, Virginia  
Graduated in Summer 2016  
Dissertation: Profit Based Simulation Model for the Rail Transportation Industry
14. Bulent Soykan, NATO ACT, Norfolk, Virginia  
Graduated in Summer 2016  
Dissertation: A Hybrid Tabu/Scatter Search Algorithm for Simulation-Based Optimization of Multi-Objective Runway Operations Scheduling
15. Mariam Kotachi  
Graduated in Summer 2018  
Dissertation: Sequence-Based Simulation-Optimization Framework with Application to Port Operations at Multimodal Container Terminals

### **M.S. STUDENTS ADVISED (4 M.S. STUDENTS)**

1. Galina Tsoy, Swisslog, Newport News, Virginia, Graduated in Fall 2004  
Thesis: Process Improvement in Healthcare
2. Emrah Koksalmis, Turkish Airforce Academy, Graduated in Spring 2011  
Thesis: Examination Timetabling With Mathematical Programming: An Application in Turkish Air Force Academy

3. Mariam Kotachi, Full time Research Assistant at the Engineering Management and Systems Engineering, graduated in Spring 2014

Thesis: Simulation Modeling and Analysis of Customs-Regulated Container Terminal Operations with Multimodal Transportation

4. Abdul Sami Stanekzai, Fulbright M.S. student, graduated in Summer 2016

Thesis: Extension of the Gravity Model: A Risk Integrated Approach towards the Impact Analysis of Mega Sports Events on Inbound Tourist Arrivals

## PROFESSIONAL SERVICE:

- Reviewer for The Research Competitiveness Program (RCP) at the American Association for the Advancement of Science (AAAS), 2018
- Reviewer for AHRQ (2018) (Agency for Healthcare Research and Quality), the lead federal agency charged with improving the safety and quality of America's health care system.
- **Co-Chair** of the 6<sup>th</sup> *International Workshop on Enterprise and Organizational Modeling and Simulation* (EOMAS 2010), <http://www.eomas.org/>, June 7-8, 2010, Hammamet, Tunisia, In conjunction with The 22<sup>nd</sup> International Conference on Advanced Information Systems Engineering (CAiSE'10)
- Founder of the *SchedulingResearch.com* web site, which is a virtual center for researchers in the scheduling area to post papers, data sets, algorithms, solutions, etc. 2005 – Present (<http://SchedulingResearch.com>)
- Reestablished in 2011 the Richmond/Tidewater INFORMS local chapter and organized several meetings with guest speakers and sponsors. Currently serving as an Academic advisor and board member of the chapter
- **External Reviewers** for the Ph.D. in Engineering Management and Systems Engineering, Off-Site Program, George Washington University, August 2016
- **External Reviewers** for the Engineering Management Master Program at Qatar University, Doha, Qatar, November 2015
- **External Reviewer** for the for the Department of Technology Systems at *East Carolina University*, September 2012
- **Technical Conference Chair** for the 26<sup>th</sup> National Conference for the American Society for Engineering Management (ASEM), which was held in Virginia Beach, VA, in October 26 – 29, 2005.
- **Senior Advisory Board Member** for SIGMAS (Special Interest Group on Modeling and Simulation) of the Association of Information Systems (AIS), <http://ccmi.fit.cvut.cz/ais-sigmas/officers.php>

- Member of the International Program Organizing Committee, Workshop on *Enterprise and Organizational Modeling and Simulation*, Netherlands, 2009; Tunisia, 2010; England, 2011; Poland, 2012; Spain, 2013; Greece 2014; Sweden, 2015; Slovenia, 2016
- Member of the International Program Organizing Committee for 5th International Conference on Business, Management and Governance (ICBMG 2016), San Francisco, California  
<http://www.icbmg.org/com.html>
- Member of the Program Committee of the 45<sup>th</sup> *International Conference on Computers and Industrial Engineering (CIE45)*, 2015, Metz, France  
[http://cie45.event.univ-lorraine.fr/program\\_com.php](http://cie45.event.univ-lorraine.fr/program_com.php)
- Member of the Program Committee of the *Complex Adaptive Systems* Conference, 2013 in Baltimore, MD.
- Member of the Program Committee of the *Complex Adaptive Systems* Conference, 2014 in Philadelphia, PA  
<http://complexsystems.mst.edu/organizingcommittee/>
- Member of the Program Committee of the *Complex Adaptive Systems* Conference, 2015 in San Jose, CA  
<http://complexsystems.mst.edu/organizingcommittee/>
- Member of the Program Committee of Simulation Multiconference (Modeling and Simulation in Engineering-MSEng'09, March, 2009, San Diego, CA
- Gave a speech on Process Modeling and Simulation to the INCOSE Central VA chapter at University of Virginia, Charlottesville, VA, Sept 2008.
- Technical reviewer for the following journals:  
*Annals of Operations Research*  
*International Journal of Planning and Scheduling*  
*International Journal of Business Analytics*  
*Journal of Combinatorial Optimization*  
*IEEE Transactions on Automation Science and Engineering*  
*SIMULATION Journal*  
*Simulation: Transactions of the Society for Modeling and Simulation International*  
*Computers & Operations Research*  
*Engineering Optimization*  
*European Journal of Operational Research*  
*International Journal of Production Economics*  
*International Journal of Production Research*  
*International Transactions in Operations Research*  
*Simulation & Gaming Journal*  
*Transportation Research Part E: Logistics and Transportation Review*  
*Production Planning and Control*  
*Production and Operations Management*  
*Science Asia – Journal of the Science Society of Thailand*



*Engineering Journal of the University of Qatar*  
*DIRASAT journal of the University of Jordan*

## UNIVERSITY SERVICE:

- **Graduate Program Director** at the Department of Engineering Management and Systems Engineering for Spring 2007 – Fall 2010
- **Chair** of the a faculty search committee for Assistant Professor in Engineering Management and Systems Engineering, ODU, Spring 2018
- **Chair** of the review committee for the College of Engineering Multidisciplinary Research Seed Grant (MRSG) Award for 2017-18 AY
- Board member representing the College of Engineering at Old Dominion University’s *Council for International Initiatives, Spring 2013 – Present*
- Member of ODU’s committee on American Council on Education (ACE) *Internationalization Laboratory, Fall 2016 – present*
- Chair of the *Faculty and Staffing* subcommittee of ODU’s ACE *Internationalization Laboratory, Fall 2016 – present*
- University committee member of the “Classroom of the Future”, Spring 2013 – Fall 2013
- Member of the College of Engineering Award Nominating Committee, Summer 2015 – Fall 2016
- Member of the Engineering Management and Systems Engineering Department - Research Enterprise committee, Fall 2016
- In charge of several departmental software programs such as Microsoft’s DreamSpark and several simulation software packages
- Maintaining the department’s web site, 2008-2010 and 2014 – Present
- **Chair** of the Faculty Development Fund Award for the College of Engineering, Fall 09 – Spring 2013
- Member of the College of Engineering Ad Hoc Committee on Course Assessment and quantifying teaching, Fall 2012 – Spring 2013
- Member of the College of Engineering Ad Hoc committee on student learning, Summer 2011 – Spring 2012
- Alternate Representative of the College of Engineering and Technology to Graduate Administrator Council (GAC) for 2007 – 2010

- Member of the Scholarship Committee at ODU for the College of Engineering, 2010
- Member of ODU's Faculty Senate for 2005 – 2007 representing the Department of Engineering Management and Systems Engineering, and the Department of Aerospace Engineering.
- Member of the Graduate Program Directors Committee for the College of Engineering, 1/2007 – 7/2010
- Chair of the Promotion and Tenure committee at the Department of Engineering Management and Systems Engineering, Summer 2016 – Present
- Member of the Promotion and Tenure committee at the Department of Engineering Management and Systems Engineering, Fall 2008 – Summer 2016
- Member of the Engineering Management and Systems Engineering Dept. Chair Counsel , Fall 2008 – Summer 2013
- Designed and implemented an admission process for the **Doctor of Engineering** program at the Department of Engineering Management and Systems Engineering at Old Dominion University
- Developed with the help of a graduate student a Graduate Student Status Tracking Database using MS-Access. The DB is used to collect statistics on the different milestones that students go through in a graduate program (coursework, candidacy, proposal, defense, etc)
- Developed with the help of graduate students a Web-based Database for the Alumni of Engineering Management and Systems Engineering Department.
- Member of the Curriculum Committee at the Department of Engineering Management and Systems Engineering at ODU.
- Served and currently serving on several M.S. thesis and Ph.D. dissertation committees at Department of Engineering Management and Systems Engineering at ODU.
- Reviewer for the Graduate Teaching Assistant Instructor (GTAI) Institute at ODU, Fall 2007 – Fall 2012
- Was in charge of identifying the necessary technology equipment for the *National Centers for Systems of Systems Engineering* (NCSOSE) lab. This was a major volunteered effort in Spring and Summer 2005. The expenditure for this project was more than \$140,000.
- Member of several Faculty Search Committee including an endowed full professor faculty position in 2005 at Department of Engineering Management and System Engineering.

- Chair of the Technology Committee for the Batten College of Engineering and Technology and Engineering Management Representative on that committee for 2004-2005.
- Engineering Management Representative on the Technology Committee for Batten College of Engineering and Technology for 2003-2004.
- Engineering Management Representative on the Library Committee for Batten College of Engineering and Technology for 2002 – 2003.
- Maintaining the Department of Engineering Management and Systems Engineering Web Site August 2002 – 2010.
- Advised the organizing committee of the *Womengineers Day* at ODU in 2004 on Planning and scheduling of students.

### COMMUNITY SERVICE:

- Reestablished in 2011 the Richmond/Tidewater INFORMS local chapter and organized several meetings with guest speakers and sponsors. Currently serving as an Academic advisor and board member of the chapter
- Participated in 2006 as a panel member on Modeling and Simulation Scenarios for Maritime and Transportation Security for **the Hampton Roads area**. This included demonstrating a simulation model for the Norfolk International Terminal (NIT) and answering questions from the local industry and government. Other members on the panel included Bouchard, J., Keever, J., Crouch, K., and Verdery, S.
- Introduced in Fall 2014 Pre-K children at ODU's *Children's Learning and Research Center* (CLRC) to Space Engineering and demoed for them some of NASA's missions to space
- Took 7th through 12th grade students from **Eastern Shores Middle and High School** in a tour in the *National Centers for Systems of Systems* (NCSOSE) at the Engineering Management and Systems Engineering Department. The tour included showing the students the capabilities at NCSOSE and explaining to them what Engineering Management and Systems Engineering is about.
- I developed a web site for a charity that supports women in Jordan called Alamani Society Foundation that was founded in 2006. I maintained its web site from 2006 to 2011 and I have been paying for the web address as a contribution to this charity. The web site can be found at: [www.alamani.org](http://www.alamani.org)

### MEMBERSHIP IN PROFESSIONAL SOCIETIES:

- Member of Institute for Operations Research and the Management Sciences (INFORMS)
- Member of INFORMS Optimization Society

- Member of INFORMS Computing Society
- Member of Institute of Industrial Engineers (IIE)
- Member of American Society of Engineering Management (ASEM)
- Epsilon Mu Eta, Charter Member, National Engineering Management Honor Society
- Senior member of the International Economics Development Research Center (IEDRC)