Name: Barry Ezell

Current Date: 8 October 2021

Campus Address: Virginia Modeling Analysis and Simulation Center 1030 University Blvd, Suffolk VA

23435

#### **Education:**

Ph.D. - Engineering Management, Old Dominion University - 2005

- Master of Science Systems Engineering, University of Virginia 1998
- Bachelor of Science (Honors) Mechanical Engineering Technology, University of Southern Mississippi – 1988

### **Experience:**

Old Dominion University, Virginia Modeling, Analysis and Simulation Center, Suffolk, VA
 Executive Director Computational Modeling Analysis and Simulation and VMASC Deputy Executive
 Director 2020 - Present

VMASC Deputy Executive Director and Director of Research Operations 2018 - 2020

Chief Scientist and Research Associate Professor 2010 - 2018

Research Assistant Professor 2008 - 2010

ODU Facility Security Officer 2017-2018

- Idaho National Laboratory Sr. Critical Infrastructure Analyst and Risk SME Part-time (2019-Present)
- Innovative Decisions, Inc. Consultant Part-time (2007-2019)
- U.S. Army Training Army and Doctrine Command, Fort Monroe, VA

Deputy Chief, Studies & Analysis 2005 - 2008

Deputy Director - The Army School System 2003 - 2005

- U.S. Military Academy, West Point, NY
  - Deputy Director Operations Research Center of Excellence 2000 2001
  - Assistant Professor, Systems Engineering 1998 2001
- U.S. Army (Various Locations) Commanding Officer, Staff Officer, Combat Veteran 1984 2008
  - Deputy Director, The Army School System, TRADOC 2002-2005
  - Deputy Chief, Studies and Analysis Division, ARCIC 2005-2008

### Teaching:

- Multiple Short Courses: Decision and Risk Analytics, National Security Agency, U.S Department of Homeland Security, Sandia National Laboratories, Idaho National Laboratory 24-40 hours: September 2012-2020.
- Short Course: MODSIM World 2014: SARMA Course Analytics and Decision Making, 8 hours, 2014.
- Continuing Education Course in Risk Analysis, 80th Military Operations Research Symposium, 16
   Hours
- Short Course: Risk Modeling, Assessment and Management, Office of Risk Management and Analysis, 40 hours: January 2011
- Short Course: Risk Analysis (24 Hours), Battelle National Biodefense Institute, 40 hours: 2011.

- Short Course: Risk and Decision Analysis (32 hours), Sandia National Laboratory, 40 hours: April 2010
- Short Course: Risk Modeling, Assessment and Management, Office of Risk Management and Analysis, DHS 40 hours: December 2009
- Statistical Methods in Psychology (Adjunct Professor Saint Thomas Aquinas College, NY), Spring 2001
- Elementary Statistics (Adjunct Professor Mount Saint Mary's College, NY), Summer 2000 and Spring 2001
- United States Military Academy at West Point, Department of Systems Engineering
  - o Introduction to Systems Design, fall 1998
  - o Advanced Individual Studies, spring 1999, 2000, 2001
  - Systems Design II, spring 1999, 2000, and 2001
  - o Systems Design I, spring 1998, fall 1999 and 2000

## **Student Mentoring:**

- John Young (2020), Ph.D. M&S, Committee Director, Validation Risk Across Hierarchical Models.
- Alan Bell (2014), Ph.D. M&S, Committee Member, Time-Based Collision Risk Modeling for Air Traffic Management.
- Kara Hill (2012), Ph.D. EMSE, Committee Member, Risk Quadruplet: Integrating Assessments of Threat, Vulnerability, Consequence, and Perception for Homeland Security and Homeland Defense.
- Van Brewer (2010), Ph.D. EMSE, Committee Member, A Decision Making Construct for Complex
- Situations.
- Shelly Bumphus (2012), Ph.D. EMSE, Committee Co-director, Assessing Resiliency and Sustainability in an Intelligence Infrastructure System.

### **Publications:**

## **Journal Articles**

- Caskey, S., and Ezell, B. (2021) Prioritizing Countries by Concern Regarding Access to Weapons of Mass Destruction Materials, *Journal of Bioterrorism and Biodefense*, Vol 12., No.1. (https://www.omicsonline.org/open-access/prioritizing-countries-by-concern-regarding-access-to-weapons-of-massdestruction-materials.pdf)
- Robinson RM, and Ezell B. (2021) Criticality Assessment for a Regional Maritime Economy, *Journal of Emergency Management*, Vol. 19, No. 1.
   (https://wmpllc.org/ojs/index.php/jem/article/view/2912)
- 3. Madison L. Hassler, Daniel J. Andrews, Barry C Ezell, Thomas L. Polmateer, James H Lambert, (2020) Multi-perspective scenario-based preferences in enterprise risk analysis of public safety wireless broadband network, *Reliability Engineering & System Safety*, Vol. 197, 106775. (https://ideas.repec.org/a/eee/reensy/v197y2020ics0951832018304022.html)
- 4. Hester, P.T., Ezell, B., Collins, A., and Horst, J. (2020) A Review of Problem Structuring Methods for Consideration in Prognostics and Smart Manufacturing, *International Journal of Prognostics and Health Management*, Vol 7, No. 3.
  - (https://papers.phmsociety.org/index.php/ijphm/article/view/2413)

- Ezell, B. and Lawsure, K. (2019) Homeland Security and Emergency Management Grant Allocation, *Journal of Leadership Accountability and Ethics*, Vol 16, No.4. (https://articlegateway.com/index.php/JLAE/article/view/2371)
- 6. Young, J. and Ezell, B. (2019) Validation of Risk in Hierarchical Models, *Proceedings of the 2019 Winter Simulation Conference: Simulation for Risk Management*, Gaylord National Resort & Conference Center, National Harbor, MD. (https://ieeexplore.ieee.org/document/9004868)
- 7. Gore, R., Diallo, S., Padilla, J. and Ezell, B. (2018) Assessing Cyber-incidents, Using Machine Learning, International Journal of Information and Computer Security, Vol. 10, No. 4. (https://www.inderscience.com/info/inarticle.php?artid=95298)
- Hester, P.T., Ezell, B., Collins, A., Horst, J., and Lawsure, K. (2017) A method for key performance indicator assessment and improvement in manufacturing organizations. *International Journal of Operations Research*, 14(4), 157-167. (http://www.orstw.org.tw/ijor/vol14no4/IJOR2017\_vol14\_no4\_p157\_p167.pdf)
- 9. Lathrop, J. and Ezell, B. (2017) A Systems Approach to Risk Analysis Validation for Risk Management, *Safety Science*, Vol. 99, pp. 187-195 (https://www.semanticscholar.org/paper/A-systems-approachto-risk-analysis-validation-for-Lathrop-Ezell/16263c250edab701b881c678e7cd1d7f17dd34d1)
- 10. Collins, A., Robinson, R., Foytik, P., Jordan, C. and Ezell, B. (2016) Integrating a Simple Traffic Incident Model for Rapid Evacuation Analysis, International Journal of Transportation, Vol 4, No. 3. (https://digitalcommons.odu.edu/vmasc\_pubs/22/)
- 11. Collins, A., Hester, P., Ezell, B., and Horst J. (2016) An improvement selection methodology for key performance indicators, *Environmental Systems and Decisions*, DOI 10.1007/s10669-016-9591-8. (https://www.semanticscholar.org/paper/An-improvement-selection-methodology-for-key-Collins-Hester/2eee60d15480008d4f4b16c3b9bbe55d6557c7b2)
- 12. Lathrop, J. and Ezell, B. (2015) Validation in the Absence of Observed Events, *Risk Analysis*, DOI: 10.1111/risa.12442 (https://www.osti.gov/pages/biblio/1262178-validation-absence-observed-events)
- 13. Collins, A. J., Flanagan, D., and Ezell, B. (2014) Analysis of the Cost of Emergency Managers' Meeting Load: A Hampton Road Case-study, *Homeland Security and Emergency Management*, Vol. 12., No. 1. (https://www.degruyter.com/document/doi/10.1515/jhsem-2014-0005/html)
- Ezell, B., Robinson, R., Foytik, P., Jordan, C., Flanagan, D. (2013) Cyber Risk to Transportation, Industrial Control Systems, and Traffic Signal Controllers, *Environmental Systems and Decisions*, DOI: 10.1007/s10669-013-9481-2. pp. 508-515 (https://link.springer.com/article/10.1007/s10669-013-9481-2)
- 15. Caskey, S., Ezell, B., and Dillon, R. (2013) Global Chemical, Biological, and Nuclear Threat Potential Prioritization Model, Journal of Bioterrorism and Biodefense, Vol 4 No. 125. (https://www.omicsonline.org/global-chemical-biological-and-nuclear-threat-potential-prioritization-model-2157-2526.1000125.php?aid=21734)
- 16. Robinson, R., Ezell, B., Foytik, P, Jordan, C., Weiss, J. (2013) Cyber Risk to Transportation Industrial Control Systems, *Cyber Security and Information Systems Information Analysis*, Vol. 1 No. 4. (https://csiac.org/articles/cyber-risk-to-transportation-industrial-control-systems/)

- 17. Dennis Buede, Suzanne Mahoney, Barry Ezell, and John Lathrop (2012) Using Plural Models for Predicting Decisions Made by Adaptive Adversaries, *Reliability Engineering and System Safety*, Vol. 108. (https://www.sciencedirect.com/science/article/pii/S095183201200107X)
- 18. Barry Ezell, Joshua Behr, and Andrew Collins (2012) Identifying Factors that Influence Terrorist Decisions and Target Selection, *Homeland Security and Emergency Management*: Vol. 9. No. 1. (https://www.degruyter.com/document/doi/10.1515/1547-7355.1974/html)
- 19. Diaz, R. and Ezell, B. (2011) Using Analytical Network Process Decision Methodology to Analyze and Allocate Resources in the Army Training Support System, *International Journal of Operations Research*, Vol. 3. No. 3. (https://www.semanticscholar.org/paper/Using-Analytical-Network-Process-Decision-to-and-in-Diaz-Ezell/d452bf1efd92c527fdc6c07647e08cd4cc6dc787)
- Diaz, R. and Ezell, B. (2011) Simulation-based Optimization Approach to a Lost Sale Stochastic Model, *International Journal of Operations Research*, Vol. 3. No. 4. (https://www.semanticscholar.org/paper/A-Simulation-Based-Optimization-Approach-to-a-Lost-Diaz-Ezell/8fd856d9dc6490b8e291ba88b8e8ead6c0ada650)
- 21. <sup>1</sup>Ezell, B., von Winterfeldt, D. Bennett, S. Sokolowski, J. and Collins, A. (2010) Probabilistic Risk Analysis and Terrorism Risk, *Risk Analysis*, Vol. 30. No. 1. (https://www.dhs.gov/xlibrary/assets/rmarisk-assessment-technical-publication.pdf)
- 22. Ezell B., and Collins, A. (2011) Letter to Editor in Response to Brown and Cox, How Probabilistic Risk Assessment Can Mislead Terrorism Analysts, *Risk Analysis*, Vol.31. No.2. (https://onlinelibrary.wiley.com/doi/10.1111/j.1539-6924.2010.01562.x)
- 23. Ezell, B., and von Winterfeldt, D., (2009) Probabilistic Risk Analysis and Bioterrorism Risk, *Biosecurity* and *Bioterrorism: Biodefense Strategy, Practice, and Science*, Vol.7. No.1. (https://pubmed.ncbi.nlm.nih.gov/19379110/)
- 24. Ezell, B. (2007) Critical Infrastructure Vulnerability Assessment Model (I-VAM), *Risk Analysis*, Vol. 27, No. 3. (https://pubmed.ncbi.nlm.nih.gov/17640208/)
- 25. Ezell, B. and Crowther, K. (2007) Philosophical Issues and Their Implications for the Systems Architect, *Foundations of Science*, Vol. 12, No. 3. (https://www.semanticscholar.org/paper/Philosophical-Issues-and-their-Implications-for-the-Ezell-Crowther/2ddf82e6de43ea9a2309cd12ce326572e65c8028)
- 26. Ezell, B. Haimes, Y. and Lambert, J. (2001) Risks of Cyber Attack to Water Utility Supervisory Control and Data Acquisition Systems, *Military Operations Research*, Vol. 6, No. 2. (https://www.semanticscholar.org/paper/Risks-of-Cyber-Attack-to-Water-Utility-Supervisory-Ezell-Haimes/ea127ca952aabf9de558e0c40e8ca2055bd83f55)
- 27. Brantley, M. and Ezell, B. (2001) Analysis Paradigms: Are you thinking on-, in, or outside-the-box? *Military Engineer*, Vol. 93, No. 612.
- 28. Ezell, B., Brantley, M. and Davis, M. (2001) Base Camp Design: Developing a Decision Support Tool for Site Selection and Facility Layout, *Military Engineer*, Vol. 93, No. 610.
- 29. Ezell, B., Farr, J., and Wiese, I. (2000) Infrastructure Risk Analysis for Municipal Water Distribution System, The American Society of Civil Engineers (ASCE): *Infrastructure Systems*, Vol. 6, No. 3. (https://ascelibrary.org/doi/abs/10.1061/%28ASCE%291076-0342%282000%296%3A3%28118%29)

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<sup>&</sup>lt;sup>1</sup> Best Paper, Society of Risk Analysis

30. Ezell, B., Farr, J., and Wiese, I. (2000) The Infrastructure Risk Analysis Model, The American Society of Civil Engineers (ASCE): *Infrastructure Systems*, Vol. 6, No. 3. (https://ascelibrary.org/doi/abs/10.1061/%28ASCE%291076-0342%282000%296%3A3%28114%29

### **Book Chapters**

- Lathrop, J. and Ezell, B. (2017) Validating Terrorism Risk Assessment Models Lessons Learned from 11 Models, in Improving Homeland Security Decisions. Ed. A. Abbas, M. Tambe, and D. von Winterfeldt. (https://www.cambridge.org/core/books/abs/improving-homeland-securitydecisions/validating-terrorism-risk-assessment-models-lessons-learned-from-11models/390D28D529A8E56D3F4C633244FBCB03)
- Parnell, G. and Ezell, B. (2017) Organizational Design Processes, in Improving Homeland Security Decisions. Ed. A. Abbas, M. Tambe, and D. von Winterfeldt. (https://www.cambridge.org/core/books/abs/improving-homeland-security-decisions/organizational-decision-processes/305AAFFE24C505D9C843E5D4EEAA7A40)
- 3. Tatman, J. and Ezell, B. (2015) Bayes Net Modeling in The Digital Patient. Sokolowski, J. and Banks, C., Wiley New York, 241-260. (https://onlinelibrary.wiley.com/doi/10.1002/9781118952788.ch17)
- 4. Ezell, B. and Parnell G. (2015) Comparison of Approaches for Adversary Modeling Decision Support for Counterterrorism. Conflict and Complexity. P. V. Fellman, Y. Bar-Yam and A. A. Minai, Springer New York. (https://link.springer.com/chapter/10.1007%2F978-1-4939-1705-1\_9)
- Ezell, B. (2014) Homeland Security Risk Modeling, Book, in Handbook of Real-World Applications in Modeling and Simulation, John Wiley and Sons, NY. (https://onlinelibrary.wiley.com/doi/10.1002/9781118241042.ch4)

## **Other Publications**

- 1. Ezell, B. (2016) Cyber Security Scores, Risk and Compliance (riskandcompliancemagazine.com/cyb)
- 2. Lawsure, K. Ezell, B., Collins, A., Horst, J., and Hester, P. (2015) Web Enabled Selection Method for Key Performance Indicators for Manufacturing, MODSIM World Paper No. 43.
- 3. Gore, R. and Ezell B. (2015) Terrisk: Uncertainty in Bioterrorism Models, MODSIM World.
- 4. Lawsure, K. and Ezell, B. (2014) Virginia Homeland Security Portfolio Value Mode, MODSIM World.
- 5. Collins, A, Robinson, R.M., Jordan, C., Foytik, P., and Ezell, B. (2014) Exploring the Effects of Traffic Incidents within an Evacuation Simulation, National Evacuation Conference.
- 6. Balaban, M., Mastaglio, T., Sokolowski, J., and Ezell, B. (2014) Exploration of Soldier Morale Using Multi-Method Simulation Approach. Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC).
- 7. Collins, A.J.; Robinson, R.M.; Jordan, C.A.; Foytik, P.; Ezell, B.C. (2013) Generic incident model for use in large-scale evacuation simulations, Technologies for Homeland Security (HST), IEEE International Conference, pp.26,31, 12-14 Nov. 2013, doi: 10.1109/THS.2013.6698971
- 8. Barry C. Ezell and Jennie Jastrzembski (2008) How to Do a Peer Review, Phalanx, Vol. 41, No. 3.
- 9. Barry C. Ezell (2008) Republic of Georgia Air Defense Capability Assessment Report, Office of the Secretary of Defense.

- 10. Barry C. Ezell (2008) Army Experimentation and Studies Information System: understanding the issues and the way forward for a modern content management system, Army Capabilities Integration Center.
- 11. Barry C. Ezell (2006) Book Review: Systems Decision Making in Systems Engineering and Management, Phalanx, Vol. 39, No. 4.
- 12. Barry C. Ezell (2005) Dissertation: Quantifying Vulnerability to Critical Infrastructure, Old Dominion University, Advisor: Dr. Chuck Keating, Department of Engineering Management and Systems Engineering, Old Dominion University.
- 13. Barry C. Ezell, Book Review (2005) Risk Modeling, Assessment and Management, 2nd Edition, *Risk Analysis*, Vol. 25, No. 5.
- 14. Barry C. Ezell (2005) How vulnerable is your SCADA system? Control Magazine, February.
- 15. Barry C. Ezell (2003) Toward a Systems-Based Vulnerability Assessment Methodology for Water Supply Systems, Engineering Foundation Conference, Risk-Based Decision-Making in Water Resources X Proceedings.
- 16. Barry C. Ezell (2001) Base Camp Technical Report, Operations Research Center, United States Military Academy, West Point, NY.
- 17. Matthew U. Robertson, Barry C. Ezell, and Michael L. McGinnis (2001) Base Camp Facility Layout, International Conference on Systems, Man and Cybernetics Proceedings.
- 18. Randall Klingaman, Ricardo O. Morales, Barry C. Ezell, and Michael L. McGinnis, Using Cluster Analysis to Develop a Uniformed Joint Task List for Rapid Decisive Operations, International Conference on Systems, Man and Cybernetics Proceedings.
- 19. Greg Parnell, Barry C. Ezell, Yacov Y. Haimes, Kent Schlussel, and Mark Sulcoski (2000) Designing a Knowledge Hierarchy for an Operation Other Than War Decision Support System for Military Planners, Phalanx: A Bulletin for the Military Operations Research Society.
- 20. Barry C. Ezell, Daniel J. McCarthy, William L. Ratliff, Jr., and Michael L. McGinnis (2000) Joint Military Headquarters Redesign, International Conference on Systems, Man and Cybernetics Proceedings.
- 21. Barry C. Ezell, Gregory Parnell, Yacov Y. Haimes, and James H. Lambert (2000) Designing an OOTW Decision Support System Military Planners, International Conference on Systems, Man and Cybernetics Proceedings.
- 22. Barry C. Ezell, Mark J. Davis, and Michael L. McGinnis (2000) Designing A Decision Support System for Military Base Camp Site Selection and Facility Layout, Engineering Foundation Conference, Risk-Based Decision Making in Water Resources IX Proceedings.
- 23. Barry C. Ezell (1998) Quantifying the Risk of Cyber Intrusion through Total Risk Management, the Proceedings of the Institution of Engineers, Australia, Western Australian Division: SCADA at the Crossroads 1998, (an international conference at the Sheraton Perth Hotel, Western Australia).
- 24. Barry C. Ezell (1998) Thesis: Risks of Cyber Attack to Supervisory Control and Data Acquisition for Water Supply, Department of Systems Engineering, University of Virginia, Advisor: Professor Yacov Y. Haimes.
- 25. Barry C. Ezell, Air Defense for the 197th Infantry Brigade (Separate) during Operation Desert Shield and Storm, Arabian Knights: A Special Publication for and about our Air Defense Artillery Veterans of Operation Desert Storm, August 1991.

# Grants Awarded (\$11.2M, 2008-Present):

Start	End	Funding Agency	Project Description	Role	Award Amt	Ezell Amt	Collaborators Co-PI: Holly
9/17/2021	9/16/2023	Systems Engineering Research Center	Federal Law Enforcement Training Center Curriculum Study	PI	\$ 750,000	\$ 150,000	Handley, Deri Amason, Jessica Johnson, Chris Lynch
1/1/2021	7/31/2021	Virginia Department of Emergency Management	Covid 19 Forecasting and Analytic Support to VDEM and VDH	PI	\$ 29,988	\$ 88,200	Co-PI: Ross Gore, Chris Lynch
7/1/2021	6/30/2022	Hampton Roads Planning District Commission	Risk and Decision Analytic Support to The Hampton Roads Urban Areas Security Initiative Grant and The Threat Hazard Risk Assessment	PI	\$ 61,750	\$ 61,750	
1/1/2021	12/31/2021	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth of Virginia	PI	\$ 325,000	\$ 325,000	
1/1/2020	12/31/2020	Virginia Department of Emergency Management	Risk and Decision Analytic Services to Homeland Security	PI	\$ 6,293	\$ 6,293	
7/24/2020	1/21/2022	Circadence	Air Force Research Laboratory Secure Live Virtual Constructive Advanced Training Environment	PI	\$ 117,771	\$ 117,771	
9/28/2020	9/27/2021	NAVSUP Fleet Logistics Center Norfolk	Joint Forces Staff College Senior Fellows Program	PI	\$ 115,919	\$ 115,919	
10/1/2020	6/30/2022	Virginia Department of Emergency Management	Mission Critical Updates for The Real-Time Evacuation Planning Model (RtePM)	Co- Pl	\$ 175,000	\$ 35,000	PI: Mike Robinson
1/1/2020	12/31/2020	Virginia Department of Emergency Management	Local Capability Assessment Report Analysis	PI	\$ 36,000	\$ 18,000	Co-PI: Kaleen Lawsure
1/1/2020	12/31/2020	Virginia Department of Emergency Management	Mind Mapping to Support Recovery Operations for 2020 Disasters	PI	\$ 10,000	\$ 5,000	Co-PI: Kaleen Lawsure
7/1/2020	6/30/2021	Lockwood Hills	Subject Matter Expert Advanced Distributed Learning Initiative	PI	\$ 171,005	\$ 171,005	
7/24/2020	1/21/2022	Circadence	Distributed Secure Live, Virtual and Constructive Air Combat System Training Environment (SLATE)	PI	\$ 639,945	\$ 63,945	Co-PI: Deri Amason
1/1/2020	12/31/2020	Virginia Department of Emergency Management	Risk and Decision Analytic Services to Homeland Security	PI	\$ 73,000	\$ 73,000	
1/20/2020	6/30/2021	Hampton Roads Planning District Commission	Risk and Decision Analytic Support to Hampton Roads Urban Areas Security Initiative Grant and The Threat Hazard Risk Assessment	PI	\$ 65,787	\$ 65,787	

Start	End	Funding Agency	Project Description	Role	Award Amt	Ezell Amt	Collaborators
5/2/2020	5/1/2022	Joint Non-Lethal Weapons Directorate	USMC Non-Lethal Fires Directorate IPA	PI	\$ 366,728	\$ 366,728	
2/24/2020	2/23/2022	Old Dominion University	Coastal Virginia Maritime Advancement Programs (COVA Map)	Co- Pl	\$ 1,532,500	\$ -	PI: Mike Robinson
4/1/2020	6/30/2020	New College Institute	Martinsville Stempowerment Workshop	Co- Pl	\$ 17,060	\$ -	PI: Jessica Johnson
9/23/2019	1/31/2020	CNA Corporation	After Action Report for The Vest Response Operations to Hurricanes Florence and Michael	PI	\$ 35,000	\$ 35,000	
9/19/2019	9/18/2021	Norfolk Naval Shipyard	Lean Six Sigma Training Space	PI	\$ 47,850	\$ 47,850	
9/28/2019	8/27/2021	NAVSUP Fleet Logistics Center Norfolk	Western Hemisphere Illicit Network Review	PI	\$ 1,064,800	\$1,064,800	
11/12/2019	5/1/2020	Joint Non-Lethal Weapons Directorate	IPA - Brian Long - Active Denial System SME	PI	\$ 120,117	\$ 120,117	
6/3/2019	9/30/2019	Applied Research Associates, Inc.	System of Systems Operational Analytics	PI	\$ 28,522	\$ 28,522	
4/1/2019	3/31/2020	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth of Virginia	PI	\$ 252,430	\$ 252,430	
2/4/2019	4/30/2019	Chesapeake Regional Healthcare	Chesapeake Regional Healthcare Lean and Six Sigma Green Belt Cohort Training Workshops	PI	\$ 14,500	\$ 725	PI transfer from Larry Filer
2/4/2019	4/30/2019	VA Port Authority	Lean and Six Sigma Green Belt Cohort Training Workshops	PI	\$ 12,000	\$ 600	PI transfer from Larry Filer
12/7/2018	3/31/2019	VA Port Authority	Port of Va Lean & Valve Steam Mapping Combo Workshops	PI	\$ 6,000	\$ 300	PI transfer from Larry Filer
9/15/2018	6/15/2019	Foodbank of Southeast VA and Eastern Shore	Lean Principles and Value Stream Mapping Combo Workshop and Implementation Project	PI	\$ 13,500	\$ 13,500	
3/12/2019	10/28/2019	Naval Air Warfare Center TSD	Department of Defense's Modeling and Simulation Technology Readiness	Co- Pl	\$ 60,000	\$ 1,200	PI: Andy Collins
5/15/2018	4/15/2019	LPR, Inc.	Commercialization - Phase II: Develop Product Design, Build and Test (Prototype) - GPS Vehicle Tracker	PI	\$ 55,000	\$ 55,000	PI transfer from Larry Filer
4/1/2018	5/31/2019	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth Virginia State Homeland Security Grant Program	PI	\$ 232,430	\$ 232,430	
11/9/2018	12/31/2021	Alex - Alternative Experts, LLC	USMC Non-Lethal Fires Course Development	PI	\$ 99,186	\$ 39,674	Co-PI: Deri Amason
3/19/2018	4/13/2018	Applied Research Associates, Inc.	Federal Protective Services Risk Analysis Peer Review	PI	\$ 5,708	\$ 5,708	

Start	End	Funding Agency	Project Description	Role	A۱	ward Amt	E	zell Amt	Collaborators
3/15/2018	5/15/2018	G2 Ops, Inc	Proactive Cyber Security Data- Driven Assessment Tool: Phase 3	Co- Pl	\$	12,000	\$	3,000	PI: Ross Gore
2/1/2018	4/30/2018	MITRE Corporation	State Homeland Security Data Exchange	PI	\$	11,250	\$	11,250	
9/15/2017	8/16/2018	Applied Research Associates, Inc.	System of Systems Operational Analysis	PI	\$	57,647	\$	28,823	Co-PI: Saikou Diallo
4/1/2017	3/31/2018	Virginia Department of Emergency Management	Hampton Roads Urban Areas Security Initiative Threat Hazard Identification Risk Assessment	PI	\$	20,000	\$	10,000	Co-PI: Kaleen Lawsure
8/15/2017	1/15/2018	Virginia Department of Emergency Management	Hampton Roads Maritime Area- Port of Virginia Risk Assessment II	Co- Pl	\$	35,000	\$	12,250	PI: Mike Robinson
9/11/2017	3/10/2018	G2 Ops Global Inc.	Proactive Cyber Security Data- Driven Assessment Tool: Phase 2	Co- Pl	\$	35,000	\$	11,550	PI: Ross Gore
9/1/2017	12/31/2017	Virginia Department of Emergency Management	Critical Infrastructure Protection Program Facilitated Workshop	PI	\$	10,000	\$	50,000	Co-PI: Mike Robinson
7/20/2017	2/28/2019	Davis Interiors	Management Mentoring Davis Interiors	PI	\$	3,250	\$	3,250	
7/1/2017	11/30/2017	Virginia Department of Emergency Management	ODU UVA GMU Independent Evaluation for FirstNet State Plan	PI	\$	50,000	\$	50,000	
4/1/2017	3/31/2018	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth Virginian State Homeland Security Grant Program	PI	\$	135,000	\$	135,000	
4/24/2017	5/31/2018	Battelle Corp	Mitigation Optimization & Net Assessment Decision Support System	PI	\$	104,000	\$	62,400	Co-PI: Ross Gore
11/7/2016	5/7/2017	G2 Ops Global Inc.	Proactive Cyber Security Data- Driven Assessment Tool	Co- Pl	\$	20,398	\$	10,199	PI: Ross Gore
4/1/2016	12/31/2016	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth Virginian State Homeland Security Grant Program	PI	\$	65,000	\$	65,000	
1/21/2016	12/31/2016	Battelle Corp	Mitigation Optimization & Net Assessment (Mona) Decision Support System	PI	\$	250,000	\$	125,000	Co-PI: Ross Gore
9/1/2015	3/31/2017	Virginia Department of Emergency Management	Workshop on Long-Term Degradation of Interdependent Critical Infrastructures in Hampton Roads	PI	\$	20,100	\$	5,025	Co-PI: Mike Robinson
4/1/2015	12/31/2015	Virginia Department of Emergency Management	Risk and Decision Analytic Support to The Commonwealth of Virginia State Homeland Security Grant Program	PI	\$	61,000	\$	61,000	

Start	End	Funding Agency	Project Description	Role	A۱	ward Amt	E	zell Amt	Collaborators
7/15/2015	9/30/2015	National Institute of Standards and Technology	Key Performance Indicator Effectiveness for Sensing and Control Smart Manufacturing	PI	\$	408,304	\$	163,322	Co-PI: Andy Collins, Patrick Hester
5/14/2014	4/30/2015	Virginia Department of Emergency Management	Grant Scoring and Website Db for Proposal Submission	PI	\$	28,000	\$	28,000	
8/8/2013	9/30/2013	Space and Naval Warfare Systems Center	Engineering Science and Technology Research Relating to Information Dominance Applications	Co- Pl	\$	20,450	\$	6,749	PI: Charles Keating
8/1/2013	12/31/2013	Virginia Department of Emergency Management	State Homeland Security Scoring System	PI	\$	32,000	\$	32,000	
7/22/2013	8/15/2013	Hampton Roads Planning District Commission Virginia	Urban Area Working Group Analytic Support	PI	\$	4,899	\$	4,899	
11/1/2012	1/31/2013	Department of Emergency Management	Regional Resilience Assessment	PI	\$	2,995	\$	2,995	
11/1/2012	2/28/2013	Virginia Department of Emergency Management	Reducing Stakeholder Fatigue: Integrating Governing Bodies, Committees and Working Group Contributions to Risk Management	Co- Pl	\$	15,500	\$	7,750	PI: Andy Collins
7/1/2012	6/30/2013	Virginia Department of Emergency Management	Regional Catastrophic Preparedness Grant Program: Real-Time Evacuation Modeling and Simulation for The National Capital Region	Co- PI	\$	900,000	\$	225,000	PI: Mike Robinson
7/1/2012	10/31/2012	Virginia Department of Emergency Management	Criteria for State Homeland Security Grant Project: Scoring and Assessment	PI	\$	8,000	\$	8,000	
7/1/2012	6/30/2013	Virginia Department of Emergency Management	Hampton Roads Regional Catastrophic Planning Team Phase III	Co- Pl	\$	538,161	\$	80,724	Pl: Joshua Behr, Rafael Diaz
6/19/2012	11/10/2012	White Hot Security, Inc.	Industrial Control Systems Cyber Conference	PI	\$	57,125	\$	57,125	
2/1/2012	2/28/2014	Virginia Department of Emergency Management	Hurricane Evacuation Encouragement Demonstrator (HEED) Prototype	PI	\$	50,000	\$	25,000	Co-PI: Solomon Sherfey
12/1/2011	6/30/2012	Virginia Department of Emergency Management	Cyber Risk to Hampton Roads Transportation Control Systems Virginia Critical Transportation Infrastructure	PI	\$	127,149	\$	127,149	
6/1/2011	9/30/2013	Hampton Roads Planning District Commission	Extension/Supplement to HRPDC Project	PI	\$	25,000	\$	25,000	
6/1/2011	9/30/2013	Hampton Roads Planning District Commission	Analytical Support of The Hampton Roads Urban Area Security Program	PI	\$	20,000	\$	20,000	
3/1/2011	10/15/2012	Old Dominion University	Mapping Neighborhood Community Vulnerability and Medically Fragile Populations in Hampton Roads	Co- Pl	\$	13,440	\$	22,688	PI: Joshua Behr

Start	End	Funding Agency	Project Description	Role	A۱	ward Amt	Е	zell Amt	Collaborators
7/1/2010	8/31/2011	Virginia Department of Emergency Management	2011 Hampton Roads Full Scale Exercise	PI	\$	400,000	\$	160,000	Co-PI: Joshua Behr, Mike Robinson
9/1/2010	12/31/2010	Battelle National Biodefense Institute	Short Course on Risk Analysis	PI	\$	25,000	\$	25,000	
12/5/2008	5/31/2011	Battelle National Biodefense Institute	Expanded Scope & Resources for Modeling Workshop	PI	\$	50,000	\$	25,000	Co-PI: Joshua Behr
9/29/2010	9/28/2011	NAVSUP Fleet Logistics Center Norfolk	JUOO Support	Co- Pl	\$	400,000	\$	200,000	PI: John Sokolowski
5/1/2010	9/1/2010	Rileen Innovative Technologies, Inc.	Review Industry Best Practices and Recommend Tunnel Asset & Systems Inspection Process	PI	\$	55,948	\$	27,974	Co-PI: Adrian Gheorghe
7/15/2010	12/31/2010	Daewoo Information System Co. Ltd.	C4 Intelligence Surveillance and Reconnaissance	PI	\$	20,000	\$	20,000	
5/6/2010	8/31/2011	NAVSUP Fleet Logistics Center Norfolk	JATA Support	PI	\$	400,000	\$	200,000	Co-PI: Rafael Diaz
2/1/2010	12/31/2010	Battelle National Biodefense Institute	Assessment of Various Approaches to Modeling Risks in the 2010 BTRA-Project R0806	PI	\$	80,000	\$	27,200	Co-PI: Andy Collins, Rafael Diaz
12/15/2008	5/31/2011	Battelle National Biodefense Institute	Bioterrorism Risk Modeling	PI	\$	89,388	\$	89,388	

## **Research Grant Pending:**

Notified of award \$1.075M: Awaiting "Authorization to Proceed from prime contractor Circadence, Inc. Title: Electric Magnetic Spectrum Study

## **Grants Applied For (Declined)**

Start	End	Agency	Title	Role	Credit	Amount
8/1/2019	7/31/2020	National institute of Standards and Technology	Improving User Accessibility and interactivity of KPI Standard E3096-17 With Reactive Web	PI	50%	\$115,119
6/1/2019	11/30/2019	Vectrona, LLC	TRASIM: The Domestic Threat Risk Assessment Simulation tool	Co- Pl	50%	\$109,468
2/15/2019	10/30/2019	Vectrona, LLC	Analysis of insurance Data from Weather Events	PI	50%	\$90,106
2/8/2019	2/22/2019	Alex - Alternative Experts, LLC	Joint Professional Military Education Promotional Video	PI	100%	\$1,000
9/1/2018	8/31/2021	Virginia Department of Emergency Management	Maritime System Critical Infrastructure Dependency tool	Co- Pl	10%	\$473,726
8/22/2018	8/29/2018	Applied Research Associates, INC.	Peer Review of Amo Airborne Fleet Land Domain Study	PI	100%	\$2,509
6/1/2018	5/31/2020	Army Research Office	Developing A Modeling Algorithm for Strategic Group formation	Co- Pl	4%	\$255,514

Start	End	Agency	Title	Role	Credit	Amount
4/1/2018	3/31/2019	National institute of Standards and Technology	KPI Standards Web-Based tool	PI	50%	\$99,944
11/1/2017	10/31/2019	US Department of Justice	Utilizing Bayesian Network Modeling to Map the Characteristics of Sexual Assaults	Co- Pl	30%	\$361,178
9/1/2017	8/31/2020	Virginia Department of Emergency Management	Maritime System Critical Infrastructure Dependency tool	Co- PI	10%	\$475,000
7/11/2017	1/10/2018	G2 Ops, INC	Proactive Cyber Security Data Driven Assessment tool	Co- Pl	33%	\$32,000
7/3/2017	6/30/2022	US Dept Homeland Security	Center for Advanced Analytics and Decision Support	PI	15%	\$19,803,818
7/1/2017	6/30/2018	Center for innovative Technology	Terrorism Risk Assessment Simulation Modeling System	Co- Pl	33%	\$41,157
1/1/2017	6/30/2017	Decision Strategies, LLC	TRASIM Modeling System	Co- Pl	50%	\$135,000
10/1/2016	9/30/2017	University of Houston	Port of the Future	PI	25%	\$426,173
10/1/2016	9/30/2018	National institute of Standards and Technology	Quantifying Key Performance Indicator Selection and Composition for Environmental Aspects of Manufacturing Processes Using Advanced Bayesian Modeling, Analysis, and Simulation	PI	20%	\$469,801
10/1/2016	9/30/2018	University of Houston	Analyzing Illegal Flows of Drugs and Undocumented Migrants Through the Detection Incident Chain Assessment Framework	PI	25%	\$460,000
10/1/2016	9/30/2017	University of Houston	Understanding the Motivations for Mass Migration: Modeling Breakdowns in Community Resiliency for Policy interventions in Countries of Origin	PI	10%	\$100,000
10/1/2016	9/30/2018	University of Houston	Advanced Modeling and Simulation for 21st Century Migration, Immigration and Refugee Challenges	PI	25%	\$457,037
10/1/2016	9/30/2018	University of Houston	Securely and Efficiently Connecting Cargo to People	PI	25%	\$451,379
9/30/2016	1/29/2017	Vectrona, LLC	Wargaming and innovation Study	PI	100%	\$34,771
9/1/2016	2/28/2017	G2 Ops, INC	Proactive Cyber Security Data-Driven Assessment tool	Co- Pl	50%	\$20,077
8/16/2016	8/15/2018	Natl Science Foundation	Crisp Type 1: Assessing interdependent Critical infrastructure and Community Resilience Through Social Media	Co- PI	25%	\$500,000
7/1/2016	6/30/2017	Decision Strategies, LLC	Terrorism Risk Assessment Simulation Modeling System	Co- Pl	50%	\$135,000
5/16/2016	8/15/2016	IBM	Understanding the Cost of Business Meetings	Co- PI	20%	\$20,000

Start	End	Agency	Title	Role	Credit	Amount
5/15/2016	8/15/2016	IBM	Improving Decision Making Through Real- Time Dashboards: An Ems Case Study	Co- Pl	50%	\$20,000
1/1/2016	3/31/2016	IBM	Analyzing Operational & Clinical Care Emergency Medical Service Data in Portsmouth, VA	Co- Pl	50%	\$20,000
1/1/2016	3/31/2016	IBM	Understanding the Cost of Business Meetings	Co- Pl	50%	\$20,000
1/1/2016	6/30/2016	IBM	A FICO Cybersecurity Score for Small Businesses	PI	50%	\$20,000
12/1/2015	11/30/2020	Vectrona, LLC	VDEM Consulting Services	PI	60%	\$4,289,490
10/1/2015	9/30/2018	Natl Science Foundation	CRISP Type 2: interdependent Critical infrastructures Complex Adaptive Systems Model for Decision-Making	Co- Pl	25%	\$1,668,204
10/1/2015	9/30/2016	Macaulay-Brown, Inc	Joint Training Environment	Co- Pl	90%	\$454,014
9/9/2015	9/8/2020	Leidos	TRADOC G-2 Operational Environment and Core Functions	PI	50%	\$3,321,043
8/16/2015	8/15/2018	Natl Science Foundation	Cyber Risk to Transportation Control Systems	PI	18%	\$428,884
7/1/2015	6/30/2020	Battelle Corp	Tat: M&S of Emerging Human interface Concepts and Courses of Action	PI	25%	\$2,414,396
4/1/2015	3/31/2017	Natl Science Foundation	Cyber Risk to Transportation Control Systems	PI	20%	\$858,647
4/1/2015	6/30/2017	University of Virginia	Quantifying the Resilience State Vector of the Hampton Roads Bridge Tunnel System Via the Inoperability Input-Output Model	PI	34%	\$210,500
1/1/2015	12/31/2017	Defense Threat Reduction Agency	Modeling Adversarial intent and the Propensity WMD Attacks to Arise	Co- Pl	30%	\$1,050,000
12/17/2014	12/16/2017	LMI	TRADOC ARCIC Task Order	Co- Pl	50%	\$1,110,860
10/1/2014	9/30/2015	Natl Science Foundation	Rips Type 1: Anticipatory interdependent Critical infrastructure Systems	Co- Pl	20%	\$295,230
4/1/2014	3/31/2016	Natl Science Foundation	Cyber Risk to Transportation industrial Control Systems	PI	25%	\$703,387
4/1/2014	6/30/2016	US Dept Homeland Security	Assessing the Deterrence Value of Maritime Security Technologies	PI	30%	\$392,517
1/1/2014	9/30/2014	National Reconnaissance office	Securing SOA Based information Systems	Co- Pl	10%	\$321,866
9/30/2013	9/30/2015	US Department of Transportation	Cyber Transportation Security Center	PI	34%	\$1,500,000
6/23/2013	7/22/2013	Transportation Research Board of the National Academies	Airport Cyber Security Best Practices 05-02	PI	60%	\$350,000

Start	End	Agency	Title	Role	Credit	Amount
4/1/2013	3/31/2015	Public Health Service (National institutes of Health- NIH)	Modeling Storm Event Sheltering interventions to Reduce Elderly Health Disparities	Co- Pl	10%	\$430,473
1/1/2013	12/31/2014	Public Health Service (National Institutes of Health- NIH)	A SD-GIS Approach to Analyze the Sensitivity of Population Health Stemming from Sea Level Rise	Co- Pl	10%	\$430,473
11/15/2012	11/14/2013	Virginia Department of Emergency Management	Alliance Solutions Group Flow-down of VDEM Funding-Pre-Proposal Rate Submission	PI	100%	\$212,566
10/1/2012	2/28/2013	Hampton Roads Planning District Commission	Urban Working Group Sustainment Plan	Co- Pl	20%	\$50,000
8/1/2012	10/31/2012	Virginia Department of Emergency Management	Hampton Roads Urban Area Working Group Sustainment Plan	Co- Pl	50%	\$67,447
6/1/2012	7/31/2012	County of Henrico	Richmond Metropolitan Response System Gap Analysis	Co- Pl	25%	\$85,613
5/1/2011	11/30/2011	DDL Omni Engineering	Multi-Perspective Decision Making in A Networked Environment	Co- Pl	30%	\$40,000
1/1/2011	12/31/2011	Toffler Associates, INC.	Solicitation Hq0034-11-R-0011	PI	100%	\$131,584
10/1/2010	9/30/2014	IARPA – intelligence Advanced Research Projects Activity	Hybrid Black Block Virtual-Collaboration for the Advancement of forecasts and Elicitations	PI	16%	\$5,270,059
3/15/2010	9/15/2011	VA Department of Transportation	Evacuation Transportation Planning Project	Co- Pl	7%	\$299,127
8/1/2009	7/31/2010	Lockheed/Martin	Subcontract Proposal to the Subject RFQ	PI	50%	\$216,883
7/1/2009	6/30/2014	Abrams Learning & information Systems	Subcontract Proposal to Homeland Security Studies and Analysis RFP # Hshqdc-09- 00016	PI	100%	\$11,217,039
4/15/2009	12/31/2009	NAVSUP Fleet Logistics Center Norfolk	Wounded Warrior Support	PI	25%	\$336,228

## **Research Papers Presented at Professional Meetings:**

- Invited Speaker and Panelist, Cyber Effects on Critical Infrastructure, National Intelligence Council, Office of the Director of National Intelligence, 17-18 October 2019.
- Proceedings of the 51st Hawaii International Conference on System Science 2017 and 2018 Cochair: Metrics, Modeling and Simulation for Cyber Physical Systems
- Society for Risk Analysis Annual Conference 2010 to 2016 Workshops at Meeting Committee Member
- Invited Speaker Military Operations Research Society Symposium, Special Session 2015
- Security Analysis and Risk Management Association Top Secret Workshop Chair 2014
- Military Operations Research Society Symposia 1999 Working Group Chair, 2000 Working Group Mentor

### **Research and Manuscripts Under-Review:**

Ezell, B., Lynch, C., and Hester, P. (2021) Methods for Weighting to Assist Decision Analysists and Modelers, *Applied Sciences*.

### **Consulting Activities:**

- Sandia National Labs, Global Biological, Chemical, and Nuclear Prioritization Modeling, 2020
- DHS Risk Assessment Process for Informed Decision Making, 2010
- DHS Bioterrorism Risk Assessment Third Party Review, 2011
- DHS Quadrennial Homeland Security Review for the Bioterrorism Risk Assessment Program, 2014

## **Membership in Professional Services:**

- Military Operations Research Society, 1998-Present
- Society for Risk Analysis, 1998-Present
- Military Operations Research Society Risk Community of Practice Co-Lead, 2017 present.
- Association of the United States Army, mid 1990s Present
- National Center for Simulation, 2019 present.
- Editorial Review Board, International Journal of Operations Research, 2009 present.
- Hampton Roads Urban Areas Working Group, 2008-2014
- Hampton Roads All Hazards Advisory Committee, 2015-Present; Resource Allocation Subcommittee, 2015-Present
- FBI InfraGard, 2009-Present
- President, Security Analysis and Risk Management Association, May 15, 2013- June 22, 2015

## **University Service:**

- Member ODU Council of Chairs, 2019 Present
- M&S Capstone Conference Panelist, 2009 Present
- ODU M&S Steering Committee, 2014 Present, Chair 2018 Present
- ODU Military Activities Committee, 2015 Present

### **Community Engagement:**

- Salem Woods Civic Organization: President (2006-2011, 2013)
- STEM Outreach 2017 Presentation to students at Salem Middle School
- STEM Outreach 2014-2016 Presentations to St. Gregory the Great School
- Military Operations Research Society Community of Practice 2016 Invited speaker and current colead
- Science Fair Judge 2013 2015 St. Gregory the Great School
- Panelist for DHS S&T on the redesign of the Bioterrorism Risk Model 2013.
- Panelist for National Science Foundation Engineering, Science and Technology 2013
- President, Board Director, and Member, Security Analysis and Risk Management Association 2013 to 2015
- Salem Woods Civic Organization: President (2006-2011, 2013) and Board Member

- Toby's Dream Foundation: Founding Board Member, 2009 and Current Board Member, 2018 present
- Hampton Roads Urban Areas Working Group 2008-2014
- Hampton Roads All-Hazards Planning Committee 2014 to present
- Hampton Roads Sub-committee for Resource Allocation, All-Hazards Planning Committee 2014 to present
- Presentations for the National Homeland Security Conference 2011,2012, 2013, 2016

#### In the News

- 2021 ODU Research Helping Virginia Plot COVID-19 Vaccine Strategy
- 2016 VMASC Researchers Hired to Analyze Effectiveness of Department of Homeland Security Risk Assessment Tools « News @ ODU
- 2013 VMASC's Ezell Elected President of Security Analysis and Risk Management Association « News @ ODU
- 2012 Ezell Named Chief Scientist at VMASC « News @ ODU
- 2021 ODU Research Helping Virginia Plot COVID-19 Vaccine Strategy « News @ ODU
- 2012 VMASC Risk Analysis Work Cited by Leading Journal « News @ ODU
- 2012 VMASC Working to Develop Cost-effective Training Seminar for Department of Homeland Security Exercises « News @ ODU
- 2011 With Good Reason Radio Interview on Cyber Risk to U.S. with Sarah McConnell

### **Certifications:**

- 2016 Open FAIR™ Foundation, Factor Analysis Information Risk
- 2016 Subject Matter Risk Expert for Risk Assistance Network + Exchange, RANE Corporation

### Other Activities and Achievements:

- Invited Speaker and Panelist, Cyber Effects on Critical Infrastructure, National Intelligence Council,
   Office of the Director of National Intelligence, 17-18 October 2019.
- Military Operations Research Society Symposium, Special Session, 2015
- Naval Warfare Center, Dahlgren, VA March 2015
- Blue Ribbon Panel, Bioterrorism Risk Assessment, DHS Science and Technology, Washington DC, May 2015.
- National Homeland Security Conference, 2011,2012, 2013, 2016
- Co-Chair, Top Secret Workshop: A MOR-SARMA Co-sponsored Workshop: How Risk Assessments Inform National Security Decision Making, Phalanx, Vol. 47, No. 3., pp9-12, 2013.
- 2008 3rd Meritorious Service Award, upon retiring, US Army
- 2001– 2nd Meritorious Service Award, U.S. Military Academy, US Army
- 2000 Selected for fully funded Ph.D. program, U.S. Military Academy, US Army
- 1998 Award for Public Service from the Center for Risk Management of Engineering Systems,
   University of Virginia

- 1997 Selected for Army fully funded graduate school and instructor in Systems Department, U.S. Military Academy
- 1996 1st Meritorious Service Award as commanding officer, US Army
- 1996 Number one of 45 company commanders, promoted to Major, one year ahead of peers
- 1993 Commandant's List Top 10, Infantry Advanced Officer Course, Ft. Benning, GA
- 1990 Held top secret clearance without interruption through present day.
- 1990 Most Valuable Player Award, Air Defense Artillery Officer Basic Course, Ft. Bliss, TX
- 1988 Graduated with honors, University of Southern Mississippi, Hattiesburg, MS
- 1984 Graduated Number One, "Soldier of the Cycle", out of approximately 300 new soldiers in Army