

# **BRYAN L. MESMER**

**Assistant Professor**

**Department of Industrial & Systems Engineering and Engineering Management**

N135 Technology Hall  
The University of Alabama in Huntsville  
Huntsville, Alabama 35899  
(256) 824-5620

## **Education:**

- Ph.D. Mechanical Engineering, State University of New York at Buffalo, 2012  
Title: Incorporation of Decision and Game Theories in Early-Stage Complex Product Design to Model End-Use  
Advisor: Dr. Christina L. Bloebaum
- M.S. Mechanical Engineering, State University of New York at Buffalo, 2010  
Title: Incorporation of Personal Communication Devices in Multi-Environment Particle Swarm Optimization Based Evacuation Simulation  
Advisor: Dr. Christina L. Bloebaum
- B.S. State University of New York at Buffalo, 2007  
Dual Degree: Mechanical Engineering/Aerospace Engineering

## **Technical Interests:**

Theory of Systems Engineering, Systems Engineering Science, Decision Theory in the Design Process, Multidisciplinary Design Optimization, Value-Driven Design, Simulation and Visualization for Decision Support, Heuristic Optimization, Game Theory Applications in Engineering, Preference Formation and Communication, Risk Attitudes in Design, Emergency Situation Modeling

## **Professional Experience:**

- 8/14-present Assistant Professor, Department of Industrial & Systems Engineering and Engineering Management, The University of Alabama in Huntsville
- Research:
    - Gamification of Systems Engineering
    - Performance metrics for rocket systems
    - Integration of new system design processes in government and industry
    - Interactions in systems and design

- End-user modeling of military personnel
- Teaching:
  - ISE 623 Engineering Economics Analysis
  - ISE 626 Introduction to Economic Analysis
  - ISE 726 Systems Modeling
  - ISE 739 Optimization in Aerospace System Design
  - ISE 639 Special Topics: End-User Modeling
  - ISE 639 Special Topics: Programming of Optimization Algorithms

8/12-8/14

Post-Doctoral Research Associate, Department of Aerospace Engineering,  
Iowa State University

- Research:
  - Decision Analysis incorporated in Multidisciplinary Design Optimization and Value-Driven Design
  - Behavioral-technical interfaces in Systems Design
  - Impact of organization incentives on design decision-making
  - Risk attitude biases in design decisions
- Teaching:
  - Co-developed core Junior level systems course
    - AerE 362 Aerospace Systems
  - Co-developed and co-instructed design courses
    - AerE 463X/563X Introduction to Multidisciplinary Design Optimization (MDO)
    - AerE 468X/IE 468X Large-Scale Complex Engineered Systems
    - AerE 568X/IE 568X Large-Scale Complex Engineered Systems
  - Instructed undergraduate design course
    - AerE 261 Introduction to Performance and Design
  - Mentoring of undergraduate and graduate Aerospace Engineering students

1/10-8/12

Research Assistant, Department of Mechanical and Aerospace  
Engineering, University at Buffalo

- Research Areas of Interest:
  - Decision and game theory in design
  - Mechanism design in product optimization
  - Applications of end-user decision models
  - Particle swarm optimization in evacuation simulations
  - Communication in emergency situations
- Participated in multiple workshops with leaders in engineering design

6/06-9/10

Design Engineer, Cobham: Carleton Technologies, Orchard Park, New  
York

- Weapon and Actuation Systems
  - Designed pressure vessel discharge tools
  - Redesigned malfunctioning test stands
  - Designed pressure decay program
- Thermal Management Systems
  - Designed rolling piston compression optimization program
  - Designed thermal system efficiency program

9/07-6/08

Teaching Assistant, Department of Mechanical and Aerospace Engineering, University at Buffalo

- Instructed and supervised students in 2 laboratory sessions of each of the following courses:
  - MAE 334 Introduction to Instrumentation and Computers
  - MAE 340 Systems Analysis
- Ranked in top 20% of all School of Engineering and Applied Science TAs from student evaluations

### **Honors and Awards:**

Moog Graduate Fellowship, Fall 2007

Undergraduate Degree Honor: Summa Cum Laude, Spring 2007

Dean's List: All qualifying semesters 2003-2007

### **Professional Memberships and Activities:**

American Helicopter Society

Member, 2016-present

Member of Organizing Committee, 2015 AHS Systems Engineering Technical Specialists' Meeting

Session Chair, 2015 AHS Systems Engineering Technical Specialists' Meeting

American Institute of Aeronautics and Astronautics (AIAA)

Member, 2010-present

Associate Member, AIAA Multidisciplinary Design Optimization Technical Committee, 2015-present

TC Meetings Attended: June 2015, January 2016

Member – MDO TC Education Sub Committee

2015-present

Session Chair, 14<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference – MAO-12. Multidisciplinary Analysis and Optimization: Uncertainty II

Session Chair, AIAA Aviation Forum 2015 – MAO-06. MAO-Emerging Methods II

Session Chair, AIAA Aviation Forum 2015 – MAO-10. MAO-Shape and Topology II

Judge, Student Paper Competition, AIAA Science and Technology Forum 2016, San Diego, CA, January, 2016

American Society of Engineering Management  
Session Chair, ASEM 2015 International Annual Conference – Systems Engineering I

Institute of Electrical and Electronics Engineers (IEEE)  
Member, 2015-present

Institute of Industrial Engineers (IIE)  
Member, 2015-present

*Reviewed for*

American Society of Mechanical Engineers (ASME) Journal of Mechanical Design  
Structural and Multidisciplinary Optimization Journal  
Fire Safety Journal  
AIAA Aviation 2016 Conference  
AIAA Aviation 2015 Conference  
AIAA Aviation 2014 Conference  
ASME IDETC/CIE 2015 Conference  
ASME IDETC/CIE 2014 Conference  
IEEE SysCon 2016 Conference  
IIE Annual Conference and Expo 2015

*Workshop Participant*

NSF Design Circle and ESD/SYS Grantees Workshop, Clemson, SC, November 2015  
NSF Decision Engineering: From Engineering Phenomenon to Value, Arlington, VA,  
October 2015  
AIAA Complex Aerospace Systems Exchange (CASE) Academic Forum, Dallas, TX,  
June, 2015  
NASA Systems Engineering Consortium Meeting: SE Practitioner's Guide Discussion,  
Huntsville, AL, May 2015  
Research Needs in Systems Engineering, Huntsville, AL, May 2015  
Council of Engineering Systems Universities (CESUN) Annual meeting, Philadelphia,  
PA, April 2015  
NSF Theory of Systems Engineering Workshop, Arlington, VA, November 2014  
NSF CAREER Proposal Writing Workshop, Buffalo, NY, August 2014  
NSF/NASA Workshop on Large-Scale Complex Engineered Systems: From Basic  
Research through Product Realization, Arlington, VA, February 2012  
NSF The Future of Multidisciplinary Design Optimization: Advancing the Design of  
Complex Systems Workshop, Fort Worth, TX, September 2010  
NSF Design of Large-Scale Complex Systems Workshop, Fort Worth, TX, September  
2010  
Future Faculty Workshop, Buffalo, NY, Spring 2010

*Conference Participant*

AHS Development, Affordability and Qualification of Complex Systems, Huntsville, AL, February, 2016  
AIAA Science and Technology Forum and Exposition 2016 (AIAA SciTech 2016), San Diego, CA, January, 2016  
American Society of Engineering Management (ASEM) 2015 International Annual Conference, Indianapolis, IN, October, 2015  
AHS Systems Engineering Technical Specialists' Meeting, Huntsville, AL, September, 2015  
AIAA Aviation 2015 Conference, Dallas, TX, June, 2015  
IIE Annual Conference and Expo 2015, Nashville, TN, May, 2015  
9<sup>th</sup> Annual IEEE International Systems Conference (SysCon 2015), Vancouver, BC, April, 2015  
AIAA Science and Technology Forum and Exposition 2015 (AIAA SciTech 2015), Kissimmee, FL, January, 2015  
ASEM 2014 International Annual Conference, Virginia Beach, VA, October, 2014  
ASME 2014 International Design Engineering Technical Conference & Computers and Information in Engineering Conference (IDETC/CIE 2014), Buffalo, NY, August, 2014  
14<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, GA, June, 2014  
10<sup>th</sup> World Congress of Structural and Multidisciplinary Optimization (WCSMO), Orlando, FL, May, 2013  
14<sup>th</sup> AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MA&O), Indianapolis, IN, September, 2012  
2<sup>nd</sup> International Conference on Evacuation Modeling and Management (ICEM), Chicago, IL, August, 2012  
13<sup>th</sup> AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MA&O), Dallas, TX, September, 2010

#### *University Community Service*

Member of Judging Committee for UAH Charger Innovation Fund, February 2016  
Committee member for COE Associate Dean for Graduate Education and Research Search, October 2015  
UAH Representative at NASA/Brazil SPORT meeting, August 2015  
UAH Representative at CESUN annual meeting, April 2015  
Organized tour of UAH robotics and unmanned vehicle labs for Intergraph, April 2015  
UAH ISEEM Systems Engineering Program Admissions Committee, April 2015-present  
Judge, Alabama Science and Engineering Fair, April 2015  
Committee member for Engineering Management Assistant Professor Search, 2014-2015  
UAH Engineering Advisory Board Presenter, February 2015  
ISEEM Representative for UAH Undergraduate Open House, Fall 2014  
Assistant Mentor in Summer Program for Interdisciplinary Research and Education – Emerging Interface Technologies, Summer 2014  
Co-Mentor in First-Year Honors Mentor Program, Spring 2013  
AIAA Faculty Talks Presenter, October 2013  
Sigma Gamma Tau Academia Panel, April 2013

Senator, Graduate Student Association, Fall 2010-Fall 2011  
 Presenter, Center for e-Design planning meeting, Summer 2010  
 Volunteer, Freshman Move-In Day, Fall 2010, 2011  
 Volunteer, Graduate School Tour Guide, 2011

*Invited Talks*

“Decision-Making and Value-Based Engineering Methods for Managing Programs”,  
 Project Management Institute – North Alabama Chapter Luncheon Speaker,  
 Huntsville, AL, June 16, 2015

“Decision-Making and Gamification in System Design and the Design Process”,  
 Huntsville New Technology User Group, Huntsville, AL, November 11, 2015

*Website/Newspaper/Magazine articles*

“Class is in Session: Engineering through the eyes of The University of Alabama in  
 Huntsville’s professors”, Redstone Rocket, Engineers Week,  
[http://www.theredstonerocket.com/special/page\\_b9f5d43e-babb-534f-8091-  
 dfb778aba9fc.html](http://www.theredstonerocket.com/special/page_b9f5d43e-babb-534f-8091-dfb778aba9fc.html) February 17, 2016, pg. 14

“UAH College of Engineering Welcomes New Professor”, University of Alabama in  
 Huntsville, [http://www.uah.edu/news/campus/uah-college-of-engineering-  
 welcomes-new-professor](http://www.uah.edu/news/campus/uah-college-of-engineering-welcomes-new-professor), September, 09, 2014

“COE Welcomes Asst. Professor Bryan Mesmer”, University of Alabama in Huntsville  
 College of Engineering, [http://www.uah.edu/eng/engineering-news/8150-  
 engnews-bryan-mesmer](http://www.uah.edu/eng/engineering-news/8150-engnews-bryan-mesmer), Frost, L., August, 04, 2014

**Academic Courses Developed and Taught:**

*University of Alabama in Huntsville*

- |         |   |
|---------|---|
| ISE 623 | Engineering Economics Analysis, University of Alabama in Huntsville, Sp 2015, 2016 text: required - Eschenbach, T.G., <u>Engineering Economy: Applying Theory to Practice</u> (Oxford University Press, New York, NY, 2011), optional - Binmore, K., <u>Playing for Real: A Text on Game Theory</u> (Oxford University Press, New York, NY, 2007) |
| ISE 626 | Introduction to Operations Research, University of Alabama in Huntsville, Fa 2015 text: required – Hillier, F.S., <u>Introduction to Operations Research</u> (McGraw-Hill Science/Engineering/Math, 2014)   |
| ISE 639 | Special Topics: End-User Modeling, University of Alabama in Huntsville, Sp 2016   |
| ISE 639 | Special Topics: Programming of Optimization Algorithms, University of Alabama in Huntsville, Sp 2016  |

ISE 726 Systems Modeling, University of Alabama in Huntsville, Sp 2016 text: required - Hazelrigg, G.A., Fundamentals of Decision Making for Engineers: For Engineering Design and Systems Engineering (Pearson Education, Inc., 2012)

ISE 739 Optimization in Aerospace Systems Design, University of Alabama in Huntsville, Fa 2015 text: required - Hazelrigg, G.A., Fundamentals of Decision Making for Engineers: For Engineering Design and Systems Engineering (Pearson Education, Inc., 2012)

### *Iowa State University*

AerE 261 Introduction to Performance and Design, Iowa State University - Sp 2014, text: required – Anderson, J., Aircraft Performance and Design (McGraw-Hill, 1998)

AerE 463X/563X Introduction to Multidisciplinary Design Optimization (MDO), (Co-Instructed) Iowa State University - Sp 2013, Sp 2014, text: optional – Hazelrigg, G.A., Fundamentals of Decision Making for Engineers: For Engineering Design and Systems Engineering (Pearson Education, Inc., 2012), Vanderplaats, G.N., Numerical Optimization Techniques for Engineering Design: With Applications (McGraw-Hill Book Company, New York, NY, 1996), Reklaitis, G.V., Ravindran, A., and Ragsdell, K.M., Engineering Optimization: Methods and Applications (John Wiley and Sons, New York, NY, 1983)

AerE 468X/IE 468X Large-Scale Complex Engineered Systems, (Co-Instructed) Iowa State University – Fa 2013, text: optional – Hazelrigg, G.A., Fundamentals of Decision Making for Engineers: For Engineering Design and Systems Engineering (Pearson Education, Inc., 2012), Binmore, K., Playing for Real: A Text on Game Theory (Oxford University Press, New York, NY, 2007)

AerE 568X/IE 568X Large-Scale Complex Engineered Systems, (Co-Instructed) Iowa State University – Fa 2013, text: optional – Hazelrigg, G.A., Fundamentals of Decision Making for Engineers: For Engineering Design and Systems Engineering (Pearson Education, Inc., 2012), Binmore, K., Playing for Real: A Text on Game Theory (Oxford University Press, New York, NY, 2007)

### **Doctoral Students**

Jared Sapp – anticipated graduation 2020

Abdollah Sharifi – graduation TBD

Mitchell Bott – graduation TBD

### **Masters Students**

Taylan Topcu (Thesis) – graduated August 2015 – currently: Ph.D. student at Virginia Tech

Joseph Clerkin – anticipated graduation 2016

Giulia Palma – anticipated graduation 2016

Kathryn Mitchell – anticipated graduation 2019

Joshua Yost – graduation TBD

Eric Jones – graduation TBD

Rajeev Kanamatareddy – graduation TBD

Richard Muschek – graduation TBD

Lynne Rihers – graduation TBD

### **Undergraduate First Year Honors Mentor:**

Christian White (Co-Mentor)

David Schanot (Co-Mentor)

### **Committee Member:**

Robert Braunger – Ph.D.

### **Grants and Contracts:**

#### *Awarded:*

Title: Collaborative Research: Organizational and Uncertainty Impacts of Couplings in a System Design Framework

Participation: Co-PI (Iowa State University) with PIs Christina L. Bloebaum (Iowa State University) and Ali E. Abbas (University of Illinois at Urbana-Champaign)

Source: National Science Foundation (Division of Civil, Mechanical, and Manufacturing Innovation: Engineering Design and Innovation)

Period: 8/1/2013 – 7/31/2016

Amount: \$320,000 (Iowa State University), \$240,000 (University of Illinois at Urbana-Champaign)

Title: Collaborative Research: Visual Analytics for Creation of Value Functions in Complex Systems Design Under Uncertainty

Participation: Co-PI (Iowa State University) with PI Christina L. Bloebaum (Iowa State University), Co-PI Eliot H. Winer (Iowa State University), PI Timothy W. Simpson (The Pennsylvania State University), and Co-PI Michael Yukish (The Pennsylvania State University)

Source: National Science Foundation (Division of Civil, Mechanical, and Manufacturing Innovation: Engineering Design and Innovation)

Period: 8/1/2014-7/31/2016



Amount: \$215,233 (Iowa State University), \$184,767 (The Pennsylvania State University)

Title: High Fidelity Multi-Man Rotorcraft Simulation Environment

Participation: PI (University of Alabama in Huntsville) with Co-PI Gregory Reed (University of Alabama in Huntsville)

Source: University of Alabama in Huntsville (Research Infrastructure Fund Program)

Period: 12/20/2014-12/20/2015

Amount: \$16,778 (University of Alabama in Huntsville)

Title: Gameful Design Study

Participation: PI

Source: Hexagon/Intergraph (Safety and Infrastructure)

Period: 12/15/2015-5/20/2016

Amount: \$10,000

Submitted:

Title: Investigation into Predictive Controller Parameters for Sinusoidal like Systems

Participation: PI

Source: Carleton Technologies Inc./Cobham PLC

Period: 12/15/2015-6/1/2016

Amount: \$30,337

Title: The Current State of Requirements in Systems Engineering and Building a Bridge to the Future

Participation: PI with Co-PI Dawn Utley

Source: National Science Foundation (Division of Civil, Mechanical, and Manufacturing Innovation: Systems Science (SYS))

Period: 4/1/16-3/31/19

Amount: \$425,997

Title: CRII: Cyberlearning: The Role of Virtual Games in Systems Engineering Training and Education

Participation: PI

Source: National Science Foundation (Division of Information and Intelligent Systems: Cyberlearning and Future Learning Technologies)

Period: 4/1/16-3/31/18

Amount: \$173,602

Support:

Title: Exergy Analysis of the NASA Space Launch System

Participation: Researcher for the University of Alabama in Huntsville portion of the NASA Systems Engineering Consortium

Source: National Aeronautics and Space Administration

Period: 8/20/14 to present

**Publications – Archived Journal:**

- Mesmer, B., Bloebaum, C.L., “An End-User Decision Model with Information Representation for Improved Performance and Robustness in Complex System Design”, *Research in Engineering Design*, July 2015, Volume 26, Issue 3, p. 235-251
- Mesmer, B., Bloebaum, C.L., “Incorporation of Decision, Game, and Bayesian Game Theory in an Emergency Evacuation Exit Decision Model”, *Fire Safety Journal*, July, 2014, Volume 67, p. 121-134.
- Mesmer, B., Bloebaum, C.L., “Importance of Incorporation of Personal Communication Devices in Evacuation Simulators”, *Safety Science*, June, 2012. Volume 50, Issue 5, p. 1313-1318.
- Mesmer, B., Bloebaum, C.L., “Modeling Decision and Game Theory Based Pedestrian Velocity Vector Decisions with Interacting Individuals”, *submitted to Safety Science on 12/31/15*.
- Kannan, H., Mesmer, B., Bloebaum, C.L., “Increased System Consistency through Incorporation of Coupling in Value-Based Systems Engineering”, *Submitted to Systems Engineering on 12/31/15*
- Simpson, T., Miller, S., Tibor, E., Yukish, M., Stump, G., Kannan, H., Mesmer, B., Winer, E., Bloebaum, C.L., “Adding Value to Trade Space Exploration when Designing Complex Engineered Systems”, *Submitted to Systems Engineering Journal on 12/31/15*

**Publications – Archived Journal - In Preparation**

- Kannan, H., Bloebaum, C.L., Mesmer, B., “Incorporation of Risk Preferences in a Value-Based Systems Engineering Framework for a Satellite System”, *to be submitted to Journal of Engineering Design*
- Collopy, P., Bloebaum, C. L., Mesmer, B., “The Distinct and Interrelated Roles of Value-Driven Design, Multidisciplinary Design Optimization, and Decision Analysis”, *to be submitted to the AIAA Journal*
- Mesmer, B., Bloebaum, C.L., “Addressing Impact of Risk Bias in Complex Design Through Decision Analysis in MDO/VDD Frameworks”, *to be submitted to Engineering Optimization*

**Publications - Conference Proceedings (Full Papers):**

- Gilbert, A., Mesmer, B., “Exergy Based Optimization of Rocket System Staging Times”, *accepted to IEEE 2016 Annual Systems Conference (SysCon 2016), Orlando, FL, April, 2016*
- Clerkin, J., Mesmer, B., “Gamification of Incentives and Mechanism Design in Systems Engineering”, *accepted to IEEE 2016 Annual Systems Conference (SysCon 2016), Orlando, FL, April, 2016*
- Palma, G., Mesmer, B., “A Vision for Storytelling in Preference Communication”, *accepted to 2016 Conference on Systems Engineering Research (CSER 2016), Huntsville, AL, March, 2016*
- Gilbert, A., Mesmer, B., “Uses of Exergy in Systems Engineering”, *accepted to 2016 Conference on Systems Engineering Research (CSER 2016), Huntsville, AL, March, 2016*
- Murugaiyan, S., Kannan, H., Mesmer, N., Abbas, A., Bloebaum, C. L., “A Comprehensive Study on Modeling Requirements into Value Formulation in a Satellite System Application”, *accepted to 2016 Conference on Systems Engineering Research (CSER 2016), Huntsville, AL, March, 2016*
- Kannan, H., Mesmer, B., Bloebaum, C.L., “Incorporation of Risk Preferences in a Value-Based Systems Engineering Framework for a Satellite System”, AIAA Science and Technology Forum 2016, San Diego, CA, January, 2016
- Subramanian, T., Khol, A., Kannan, H., Winer, E., Bloebaum, C.L., Mesmer, B., “Understanding the Impact of Uncertainty on the Fidelity of the Value Model”, AIAA Science and Technology Forum 2016, San Diego, CA, January, 2016
- Watson, M.D., Gilbert, A., Mesmer, B., “Launch Vehicle Exergy Analysis”, Proceedings of the 43<sup>rd</sup> Structures and Mechanical Behavior, JANNAF, Salt Lake City, UT, December, 2015
- Mesmer, B., Farrington, P., “A Brief Review of Systems Engineering Programs and a Vision for the Future of Systems Engineering Education”, ASEM 2015 International Annual Conference, Indianapolis, IN, October, 2015
- Kannan, H., Tibor, E., Mesmer, B., Bloebaum, C.L. “Incorporation of Coupling Strength Models in a Value-Based Systems Engineering Framework for Optimization”, AIAA Aviation 2015, Dallas, TX, June, 2015
- Topcu, T., Mesmer, B. “Customer, Commercial and Government Value Functions for Electric Vehicle System Design”, IIE Annual Conference and Expo 2015, Nashville, TN, May, 2015
- Gilbert, A., Mesmer, B., Watson, M. “Exergy Analysis of Rocket Systems”, 9<sup>th</sup> Annual IEEE International Systems Conference, Vancouver, BC, April, 2015

- Collopy, P.D., Mesmer, B. “Report on Science of Systems Engineering Workshop”, AIAA Science and Technology Forum 2015, Kissimmee, FL, January, 2015
- Kwasa, B., Bloebaum, C.L., Mesmer, B., Kannan, H., Tibor, E. “Value Impact of an Organization Structure in the Context of Value-Driven Design”, AIAA Science and Technology Forum 2015, Kissimmee, FL, January, 2015
- Goetzke, E., Bloebaum, C.L., Mesmer, B. “Value-Driven Design of Non-Commercial Systems using Bargain Modeling”, AIAA Science and Technology Forum 2015, Kissimmee, FL, January, 2015
- Hupman, A., Abbas, A., Tibor, E., Kannan, H., Bloebaum, C.L., Mesmer, B. “Calculating Value Gaps Induced by Independent Requirements, Deterministic Modeling, and Fixed Targets”, AIAA Science and Technology Forum 2015, Kissimmee, FL, January, 2015
- Miller, S., Simpson, T., Yukish, M., Stump, G., Mesmer, B., Tibor, E., Bloebaum, C.L., Winer, E., “Toward a Value-Driven Design Approach for Complex Engineered Systems Using Trade Space Exploration Tools”, Proceedings of the ASME 2014 International Design Engineering Technical Conference & Computers and Information in Engineering Conference (IDETC/CIE 2014), Buffalo, NY, August, 2014
- Kannan, H., Bloebaum, C.L., Mesmer, B., “Incorporation of Coupling Strength Models in Decomposition Strategies for Value-Based MDO”, 14<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, GA, June, 2014
- Goetzke, E., Bloebaum, C.L., Mesmer, B., “Profit and Operational-Based Value Functions”, 14<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, GA, June, 2014
- Tibor, E., Mesmer, B., Bloebaum, C.L., Miller, S., Simpson, T., “Visualization of System Decomposition in a Value-Based Framework”, 14<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, GA, June, 2014
- Mesmer, B., Bloebaum, C.L., “Addressing Risk in Design Through Decision Analysis in MDO/VDD Frameworks”, 10<sup>th</sup> World Congress of Structural and Multidisciplinary Optimization (WCSMO), Orlando, FL, May, 2013
- Mesmer, B., Bloebaum, C.L., Kannan, H., “Incorporation of Value-Driven Design in Multidisciplinary Design Optimization”, 10<sup>th</sup> World Congress of Structural and Multidisciplinary Optimization (WCSMO), Orlando, FL, May, 2013
- Bloebaum, C.L., Mesmer, B., “Teaching Multidisciplinary Design Optimization (MDO) in a

Reconfigurable Interactive Classroom”, 10<sup>th</sup> World Congress of Structural and Multidisciplinary Optimization (WCSMO), Orlando, FL, May, 2013

Mesmer, B., Bloebaum, C.L., “Use of an End-User Decision Model to Improve Robustness in Multidisciplinary Design Optimization”, 14<sup>th</sup> AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MA&O), Indianapolis, IN, September, 2012

Mesmer, B., Bloebaum, C.L., “Representation of Information in Large-Scale, Complex System End-User Decision Models”, 14<sup>th</sup> AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MA&O), Indianapolis, IN, September, 2012

Collopy, P., Bloebaum, C. L., Mesmer, B., “The Distinct and Interrelated Roles of Value-Driven Design, Multidisciplinary Design Optimization, and Decision Analysis”, 14<sup>th</sup> AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MA&O), Indianapolis, IN, September, 2012

Mesmer, B., Bloebaum, C.L., “Vacate-GT: An Emergency Evacuation Simulator Incorporating a Decision and Game Theory Based Exit Decision Model”, 2<sup>nd</sup> International Conference on Evacuation Modeling and Management (ICEM), Chicago, IL, August, 2012

Mesmer, B., Bloebaum, C.L., “Modeling Decision and Game Theory Based Pedestrian Velocity Vector Decisions in Emergency Evacuations”, 2<sup>nd</sup> International Conference on Evacuation Modeling and Management (ICEM), Chicago, IL, August, 2012

#### **Presentation only – Conference/Forums:**

Mesmer, B., “End-Users of Rotorcraft Systems and Modeling their Decisions”, AHS 2015 Systems Engineering Technical Specialists’ Meeting, Huntsville, AL, September, 2015

Mesmer, B., “Design of Complex Engineered Systems”, AIAA Complex Aerospace Systems Exchange (CASE) Academic Forum, Dallas, TX, June, 2015

#### **Poster Presentations**

Mesmer, B., Bloebaum, C.L., Abbas, A., Winer, E., Simpson, T., Yukish, M., Kannan, H., Kwasa, B., Murugaiyan, S., Salimi, E., Rajati, M., Hupman, A., Tibor, E., Subramanian, T., Kohl, A., Jung, S., Miller, S., “Collaborative Research: Organizational and Uncertainty Impacts of Couplings in a System Design Framework; Collaborative Research: Visual Analytics for Creation of Value Functions in Complex Systems Design Under Uncertainty”, NSF Design Circle and ESD/SYS Grantees Workshop, Clemson, SC, November 2015