



**Proceedings of the 2020 General Donald R. Keith  
Memorial Capstone Conference**  
*A Regional Conference of the Society for Industrial and Systems Engineering*



**April 30, 2020**

**Track 1: Systems Design**

Chair: Dr. Patrick Driscoll

Judges: COL Rob Coker, USAR; Chick-fil-A  
COL Julia Coxen, PhD candidate, University of Michigan  
LTC Chris Green, PhD candidate, Georgia Institute of Technology

**Winner: "High Speed Transport in Vacuum Sealed Tubes"**  
**Patrick Bubel, Jared Fuller, Kyle Olstein and Rebecca Schneider**  
**SUNY Binghamton**

**Track 2: Systems Design for Defense Applications**

Chair: COL Matt Dabkowski

Judges: Dr. Steve Henderson, Merck  
Dr. John Farr, University of Central Florida  
Dr. Dilip Patel, Loyola University

**Winner: "Measuring the Return on Investment for AFRICOM's African Enlisted Soldier Development Efforts"**  
**Jacob Bochonok, Meaghan Carroll, Paul Manfredini, and Delilah Wood**  
**Advisor: COL Matthew Dabkowski**

**Track 3: Process Modeling and Analysis**

Chair: Dr. Greg Graves

Judges: Dr. Sang Choi, University of Wisconsin Whitewater  
Mr. George Page, Page Engineering  
Dr. Santiago Balestrini-Robinson, Georgia Tech Research Institute

**Winner: "PDISE Process Improvement Program"**  
**Lucas Konen, Sean O'Brien and Michael Wilson**  
**Advisor: MAJ Christine Krueger**



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**Track 4: System Design 2**

Chair: LTC James Enos

Judges: Mr. Oliver Manuss, Institute for Production and Automation  
Dr. Nagen Nagarur, State University of New York (Binghamton)  
Dr. Jeffrey Fernandez, Industrial and Systems Engineering Review/JFAssociates, Inc.

**Winner: “Design of a Standardized Trial Process for the Evaluation of Medical Equipment”  
Brianna Genova, Isabelle Poptean, Summer Purschke and Lucas Donnellan  
SUNY Binghamton**

**Track 5: Modeling and Simulation**

Chair: Dr. Jose Jimenez

Judges: LTC Josh Eaton, USMA  
Mr. Jay Masuret, EMCOR Group  
Mr. Mark Willer, Terumo BCT

**Winner: “Reaching Meaningful Participation of Women in the Kenyan Defense Force: A System  
Dynamics Approach”  
Annette Bell, John Burke, David Donnan, Daine Van de Wall, and Michael Hagelskamp  
Advisor: MAJ Christine Krueger**

**Track 6: Modeling and Simulation for Defense Applications**

Chair: Dr. Vikram Mittal

Judges: Dr. Timothy Smith, University of Miami Medical Center  
Dr. Simon Goerger, Engineering Research and Development Center (ERDC)  
LTC Brandon Thompson, USMA

**Winner: “Hyper-Enabled Operator: Situational Awareness as Armor”  
Brianna Genova, Isabelle Poptean, Summer Purschke and Lucas Donnellan  
Advisor: Dr. Vikram Mittal**



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**Track 7: Problem Solving**

Chair: Dr. Tim Elkins

Judges: Mr. William Coe, Betlem Services  
Ms. Adrienne Shakespeare, Terumo BCT  
Dr. Tommer Ender, Georgia Tech Research Institute

**Winner: "Requirements Analysis and Conceptual Design of a Fort Bragg Deployment Complex"**  
**Sarah Henderson, Nerissa Siwietz, Allison Strong, Morgan Morris**  
**Advisor: Dr. Gene Lesinski**

**Track 8: Project and Engineering Management**

Chair: COL Paul Evangelista

Judges: Ms. Catherine Norman, USMA  
Mr. James Borchart, Construction Ergonomics  
Dr. Anand Subramanian, Industrial and Systems Engineering Review/JFAssociates, Inc.

**Winner: "Applying Lean Six Sigma to Reduce Repair Cycle Time (RCT)"**  
**Justin Thomas, Edward Li, Charels Worshim, and Brendan Soucie**  
**MAJ Dan Newell**

**Track 9: Decision Analysis**

Chair: LTC Dave Hughes

Judges: Mr. Matthew Pierce, EMCOR Group  
Dr. Daryl Santos, State University of New York (Binghamton)  
Dr. Greg Parnell, University of Arkansas

**Winner: "Decision Support Tool for CBRN Capabilities"**  
**Benjamin Vollbach, Darryl Vincent, Christian DePinto, Christopher Landin and Eurica Diego**  
**Dr. Jose Jimenez**



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**Track 10: Department of Systems Engineering Honors Projects**

Chair: Dr. Kenny McDonald

Judges: Mr. Neal Schmeidler, Grant Thornton LLP  
COL Hise Gibson, USMA  
Dr. Niki Goerger, Engineering Research and Development Center (ERDC)

**Winner: "Creating Effective Leadership and Development System for FINCA Costa Rica"**  
**Meaghan Carroll**  
**Advisor: Dr. Jose Jimenez**

**Track 11: Hollis Award for Operations Research/Systems Analysis at USMA**

Chair: LTC Lee Evans

Judges: Ms. Pamela Blechinger, The Research and Analysis Center (TRAC)  
Dr. Garry Lambert, The Research and Analysis Center (TRAC)  
Mr. Brad Pippin, The Research and Analysis Center (TRAC)

**Winner: "Rebound Side Tendencies: A Study on Rebound Location in Relation to Shot Location"**  
**David Pinter**  
**Advisor: LTC David Hughes**

<b>FIRST PLACE</b>	<a href="#">Multi-Year Inland Waterway Investment Model and the Value/Consequence Ratio</a> <i>- Matthew Robinson, Francisco Lefors, Justin Capp, Grover Laporte, and James Schreiner</i>
<b>SECOND PLACE</b>	<a href="#">The Influence of Gangs in Central America with Respect to Woman's Wellbeing</a> <i>- Caneel Dixon and Christine Krueger</i>
<b>THIRD PLACE</b>	<a href="#">Causal Threat Modeling Applied to the Horn of Africa</a> <i>- Steven Cromer, Connor McDonald, Thomas Monahan, Seth Shields, and Patrick Dubois</i>