

EDUCATION

- UNIVERSITY OF MICHIGAN**, Ann Arbor, MI 2009-2013
Ph.D. & M. E., Industrial and Operations Engineering
Concentration in Financial Engineering
- UNIVERSITY OF VIRGINIA**, Charlottesville, VA 2003-2007
B.S., Systems Engineering with Computer Systems Concentration
Graduated with High Distinction, Minors: Philosophy, Computer Science

PROFESSIONAL EXPERIENCE

- THE RAND CORPORATION, Senior Operations Researcher & Associate Research Department Director (Engineering & Applied Science)** 2013-present
Washington, DC & Pittsburgh, PA
- Designed, implemented, and led multi-year research studies using a framework and method for evaluating investment trades across force structure, force mix, readiness, and modernization for the US Army, working with research programmers and technical staff as well as experts in strategy, military operations, and wargaming
 - Applied Robust Decision Making, simulation, and optimization techniques to support cross-portfolio investment decisions and evaluate investment options for the US military across uncertain futures
 - Managed multiple teams of research programmers to develop and deliver customer-facing and internal force structure, readiness, force sufficiency, project management, and costing tools to support senior leader decision-making
 - Organized data integration and documentation of complex individual-level datasets used for research on education, workforce development, and human resources programs for military spouses
 - Provided technical expertise and advanced modeling techniques to RAND education and healthcare projects

- VIDEOLOGY, Research and Development Intern**, Baltimore, MD 2012
- Led large data audit project for comparing age/gender accuracy across providers using Hadoop/AWS
 - Presented findings to CEO and other executives as well as stakeholders throughout the company

- AMERICAN EXPRESS, Consumer Card Risk Management Intern**, New York, NY 2010
- Managed and implemented web behavior analysis project using SAS to determine whether potential customers' website behavior could serve as a predictor of customer risk or future performance

- OLIVER WYMAN FINANCIAL SERVICES, Corporate Risk Consultant**, New York, NY 2007-2009
- Worked with clients in upper level management positions to assess company risks, develop risk monitoring systems and risk management frameworks, and determine future improvement work streams
 - Worked with the Corporate Risk Domain to develop Enterprise Risk Management (ERM) materials for clients outside of the financial services space, including energy, defense, manufacturing, and insurance
 - Served as primary analyst, co-author, and contributor for Celent reports on wealth management

TEACHING EXPERIENCE

- UNIVERSITY OF MICHIGAN**, Ann Arbor, MI
- Summer 2013: Full-time primary instruction, Financial Engineering Master's Program, Intensive Summer Preparatory Math Sequence, (90 masters students)
 - Fall 2011 & Winter 2012: Primary instructor, IOE 202—Operations Modeling (120 undergraduate students)

ACADEMIC RESEARCH AND PROJECTS

- Analysis of risk in higher education lending and financial aid decisions** 2010-2013
- Studied the impact of student characteristics on default risk using data on student loan-backed securities
 - Developed a continuous-time student loan default model using individual student data
 - Examined the possible existence of behavioral market inefficiencies in the higher education market
 - Studied the effect of educational choices such as school and major selection on post-college income
 - Developed models of lifecycle income expectations based on student characteristics and choices
 - Used individual-level school choice data to examine drivers of the school choice decision
- Impact of credit growth and aid on college tuition and fees** 2009-2013
- Analyzed credit, tuition, and social trends over time to identify common trends and causal links
 - Conducted regression analysis to identify key drivers of supply and demand
 - Collected data and conducted analysis to compare public and private spending on higher education outcomes
- Capstone and Thesis Project: Distributed Search by Mobile Sensors** 2006-2007
- Developed working test bed of an autonomous robot search and surveillance system

Katharina Ley Best

SELECTED PUBLICATIONS & PRESENTATIONS

- **Best, K.;** Mikolic-Torreira, I.; Chonde, S.; “Developing an Analytical Method for Assessing Readiness, Risks, and Opportunity”; *Military Operations Research*; Vol. 25, No. 4, 2020.
- **Best, K.;** Schmid, J.; Tierney, S.; Awan, J.; Beyene, N.; Holliday, M.; Khan, R.; Lee, K.; “How to Analyze the Cyber Threat from Drones: Background, Analysis Frameworks, and Analysis Tools”; RAND, 2020.
- **Best, K.;** Invited Speaker: MORS U.S. National Security Risk Analysis Community of Practice; “Analyzing the Cyber Threat from Drones”; 2020.
- **Best, K.;** Invited Speaker: Opening Keynote, Women in Data Science Pittsburgh; “Doing Policy Research with Data Science”; Carnegie Mellon University, 2019.
- Mikolic-Torreira, I.; Barnett, S.; **Best, K.;** Boston, S.; Madden, D.; Tarraf, D.; Willcox, J.; “Army Fires Capabilities for 2025 and Beyond”; RAND, 2019
- Mazarr, M.; **Best, K.;** Laird, B.; Larson, E.; Linick, M.; Madden, D.; “The U.S. Department of Defense’s Planning Process”; RAND, 2019.
- **Best, K.;** Mikolic-Torreira, I.; Balebako, B.; Johnson, M.; Tran, T.; Romita Grocholski, K.; “Assessing Force Sufficiency and Risk Using RAND’s Multi-Period Assessment of Force Flow (MPAFF) Tool”; RAND, 2019.
- Linick, M.; Mikolic-Torreira, I.; **Best, K.;** Stephenson, A.; Eckhause, J.; Baruffi, I.; Carson, C.; Duckworth, E.; Bauman, M.; “A Throughput-Based Analysis of Army Active Component/Reserve Component Mix for Major Contingency Surge Operations”; RAND, 2019.
- **Best, K.;** Pane, J.; “Privacy and Interoperability Challenges Could Limit the Benefits of Education Technology”; RAND, 2018.
- Miller, L.; Knapp, D.; **Best, K.;** Friedman, E.; Gonzalez, G.; Totten, M.; Wenger, J.; Trail, T.; Posard, M.; Amaral, E.; “Early Evidence from the My Career Advancement Account Scholarship for Military Spouses: Work, Earnings, and Retention”; RAND, 2018.
- Markel, M.; Marquis, J.; Schirmer, P.; Robson, S.; Saum-Manning, L.; Hasting, K.; **Best, K.;** Panis, C.; “Career Development for the Department of Defense Security Cooperation Workforce”; RAND, 2018.
- **Best, K.;** Burger, COL J.; Mikolic-Torreira, I.; “Trading Risks: Defining and Visualizing Risk Across the Force Structure and Readiness Trades Space”; Presented at Military Operations Research Society Symposium (MORS), Monterey, CA, 2018.
- Markel, M.; Marquis, J.; Schirmer, P.; Robson, S.; Saum-Manning, L.; Hastings, K.; **Best, K.;** Panis, C.; Ramos, A.; Bicksler, B.; “Career Development for the Department of Defense Security Cooperation Workforce”; RAND, 2018.
- O’Mahony, A.; Szayna, T.; Penin, C.; Rohn, L.; Eaton, D.; Bodine-Baron, E.; Mendelsohn, J.; Osoba, O.; Oehler, S.; **Best, K.;** Bighash, L.; “The Global Landpower Network: Recommendations for Strengthening Army Engagement”; RAND, 2017.
- Pernin, C.; **Best, K.;** Boyer, M.; Eckhause, J.; Gordon, J.; Madden, D.; Pfrommer, K.; Rosello, A.; Schwillle, M.; Shurkin, M.; Wong, J.; “Enabling the Global Response Force: Access Strategies for the 82nd Airborne Division”; RAND, 2016.
- **Best, K.;** Eckhause, J.; Linick, M.; Mikolic-Torreira, I.; Stephenson, A.; “Throughput Analysis of Reserve Component Mobilization Training Capacity”; Presented at Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, Philadelphia, PA, 2015.
- **Best, K.;** Eckhause, J.; “Evaluating Basing Options for Optimizing Accessibility for a Global Response Force”; Presented at Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, San Francisco, CA, 2014.
- **Best, K.;** Keppo, J.; “Picking the Wealthy: An Examination of College Admissions and Future Earnings”; Working Paper, 2013.
- **Best, K.;** “Three Studies on the Value and Risk of Higher Education”; Dissertation, U. of Michigan, 2013.
- **Best, K.;** Keppo, J.; “A Simple Hazard Model of Student Loan Defaults”; Presented at Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, Phoenix, AZ, 2012.
- **Best, K.;** Keppo, J.; “The Credits that Count: How Credit Growth and Financial Aid Inflate College Tuition and Fees”; *Education Economics*, 2012, 1-25; Presented at University in Transition Conference, Helsinki, Finland, 2012 & INFORMS Annual Meeting, Austin, TX, 2010.

AWARDS & HONORS

- Winner, RAND HSOAC Director’s Innovation Award, 2019
- Winner, RAND Engineering & Applied Science Mentor of the Year Award, 2018
- Winner, AAUW Dissertation Writing Fellowship, 2012-13
- UVA/MIT Policy Internship Program, 2007