A. JAMES CLARK
SCHOOL OF ENGINEERING

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The Department of
MECHANICAL ENGINEERING

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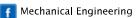
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Mechanical Engineering

Undergraduate Studies

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Herrmann, Jeffrey

Professor
Academic Director, QUEST Honors Program
Department of Mechanical Engineering
Joint Appt., Institute for Systems Research
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University of Maryland
College Park, MD 20742
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Research Interests

Health care operations research

Public health emergency preparedness

Production scheduling

Engineering design decision-making

Education

Ph.D., University of Florida, 1993

Professional Memberships and Service

Member, Institute of Industrial and Systems Engineers

Member, American Society of Mechanical Engineering

Member, American Society for Engineering Education

Member, INFORMS

Member, Society for Health Systems (SHS)

Member, The Design Society

Chair, Risk Management Processes and Methods in Design SIG

Selected Publications

2016

Rudnick-Cohen, Eliot S., Jeffrey W. Herrmann, and Shapour Azarm. Risk-Based Path Planning Optimization Methods For UAVs Over Inhabited Areas. ASME Journal of Computing and Information Science in Engineering, 16(2), 021004, 2016. doi:10.1115/1.4033235.

2015

Herrmann, Jeffrey W., Engineering Decision Making and Risk Management, John Wiley and Sons, Hoboken, New Jersey, 2015.

Tamburello, Robert N., and J.W. Herrmann, A simulation-based approach to determine the evaluation adequacy of system-of-systems operational test configurations, Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, Volume 229, Number 1, pages 46-51, 2015.

Fitzgerald, Daniel P., Thornton H. Gogoll, Linda C. Schmidt, J.W. Herrmann, and Peter A. Sandborn, Design-for-Environment Processes and Tools, in Mechanical Engineers' Handbook, Volume 2,

Design, Instrumentation, and Controls, 4th Edition, Myer Kutz (Editor), Wiley, 2015.

Herrmann, J.W., William Rand, Brandon Schein, and Neza Vodopivec, An Agent-Based Model of Urgent Diffusion in Social Media, Journal of Artificial Societies and Social Simulation, Volume 18, Number 2, Page 1, March 31, 2015.

King, Kylie G., and J.W. Herrmann, Defining and Assessing the Learning Outcomes of a Multidisciplinary Undergraduate Honors Program, Quality Approaches in Higher Education, Volume 6, Number 1, February, 2015.

Herrmann, Jeffrey W., Predicting the Performance of a Design Team Using a Markov Chain Model, IEEE Transactions on Engineering Management, Volume 62, Number 4, pages 507-516, 2015.

2014

Goodell, Kylie King, and J.W. Herrmann, Assessing the Learning Outcomes of a Multidisciplinary Undergraduate Honors Program, Proceedings of the 2014 Industrial and Systems Engineering Research Conference, Y. Guan and H. Liao, eds., Montreal, Canada, June 1-3, 2014.

Gralla, Erica L., and J.W. Herrmann, Design Team Decision Processes in Facility Design, Proceedings of the 2014 Industrial and Systems Engineering Research Conference, Y. Guan and H. Liao, eds., Montreal, Canada, June 1-3, 2014.

Leber, Dennis D., and J.W. Herrmann, Resource Allocation for Selection Decisions with Measurement Uncertainty, Proceedings of the 2014 Industrial and Systems Engineering Research Conference, Y. Guan and H. Liao, eds., Montreal, Canada, June 1-3, 2014.

Leber, Dennis D., and J.W. Herrmann, Sample Allocation for Multiple Attribute Selection Problems, Proceedings of the 2014 Winter Simulation Conference, A. Tolk, S.D. Diallo, I.O. Ryzhov, L. Yilmaz, S. Buckley, and J.A. Miller, eds., Savannah, Georgia, December 7-10, 2014.

2013

Abbey, Rachel L., Katherine A. Aaby, and J.W. Herrmann, Planning and Managing Mass Prophylaxis Clinic Operations, in Handbook of Healthcare Operations Management, Brian T. Denton, editor, Springer, New York, 2013.

Leber, Dennis D., and J.W. Herrmann, Decision Analysis Methods for Selecting Consumer Services with Attribute Value Uncertainty, in Risk Assessment and Evaluation of Predictions, M.-L. T. Lee, M. Gail, R. Pfeiffer, G. Satten, T. Cai, and A. Gandy, editors, Lecture Notes in Statistics, Volume 210, pages 405-424, Springer, New York, 2013.

2012

Herring, William L., and J.W. Herrmann, The Single-Day Surgery Scheduling Problem: Sequential Decision-Making and Threshold-Based Heuristics, OR Spectrum, Volume 34, Number 2, pages 429-459, 2012.

Herrmann, J.W., Finding Optimally Balanced Words for Production Planning and Maintenance Scheduling, IIE Transactions, Volume 44, Number 3, pages 215-229, 2012.

Herrmann, Jeffrey W., Using Aggregation to Construct Periodic Policies for Routing Jobs to Parallel Servers with Deterministic Service Times, Journal of Scheduling, Volume 15, Number 2, pages 181-192, 2012. DOI: 10.1007/s10951-010-0209-6.

Herrmann, Jeffrey W., editor, Handbook of Operations Research for Homeland Security, Springer, New York, 2012.

2011

Herring, William L., and Jeffrey W. Herrmann, "A stochastic dynamic program for the single-day surgery scheduling problem", IIE Transactions on Healthcare Systems Engineering, 1:4, pages 213-225, 2011. (See also paper at journal website.)

Herring, William L., and Jeffrey W. Herrmann, "The single-day surgery scheduling problem: sequential decision-making and threshold-based heuristics", OR Spectrum, DOI: 10.1007/s00291-011-0270-3. (See also paper at journal website.)

Herrmann, Jeffrey W., "Using Aggregation to Reduce Response Time Variability in Cyclic Fair Sequences", Journal of Scheduling, Volume 14, pages 39-55, 2011, DOI 10.1007/s10951-009-0127-7.

Strunz, Richard, and Jeffrey W. Herrmann, "Reliability as an Independent Variable Applied to Liquid Rocket Engine Hot Fire Test Plans", Journal of Propulsion and Power, Volume 27, Number 5, pages 1032-1044, 2011.

Strunz, Richard, and Jeffrey W. Herrmann, "A Reliability As an Independent Variable (RAIV) methodology for optimizing test planning for liquid rocket engines", CEAS Space Journal, Volume 2, Numbers 1-4, pages 17-30, 2011.

2010

Herrmann, Jeffrey W., "Using Aggregation to Construct Periodic Policies for Routing Jobs to Parallel Servers with Deterministic Service Times", to appear in Journal of Scheduling. DOI: 10.1007/s10951-010-0209-6. Now available at Online First.

Herrmann, Jeffrey W., "The Perspectives of Taylor, Gantt, and Johnson: How to Improve Production Scheduling", International Journal of Operations and Quality Management, Volume 16, Number 3,

pages 243–254, September, 2010.

Herrmann, Jeffrey W., "Progressive Design Processes and Bounded Rational Designers", *Journal of Mechanical Design*, August 2010, Volume 132, Issue 8, 081005 (8 pages). doi:10.1115/1.4001902 (view on JMD web site)

Fitzgerald, Daniel P., Jeffrey W. Herrmann, and Linda C. Schmidt, "A Conceptual Design Tool for Resolving Conflicts Between Product Functionality and Environmental Impact", *Journal of Mechanical Design*, September 2010, Volume 132, Issue 9, 091006 (11 pages). doi:10.1115/1.4002144 (view on JMD web site)

2009

Karimian, Peyman, and J.W. Herrmann, Separating Design Optimization Problems to form Decision-Based Design Processes, *Journal of Mechanical Design*, Volume 131, Issue 1, 011007 (8 pages), January 2009.

Aughenbaugh, Jason M., and Jeffrey W. Herrmann, A Comparison of Statistical Approaches for Assessing Reliability, *International Journal of Reliability and Safety*, Volume 2, Number 4, pages 265–285, 2008.

Aughenbaugh, Jason M., and Jeffrey W. Herrmann, Reliability-Based Decision-Making: A Comparison of Statistical Approaches, *Journal of Statistical Theory and Practice*, Volume 3, Number 1, pages 289–304, March 2009.

Herrmann, J.W., Design Optimization with Imprecise Random Variables, 2009 SAE World Congress, Detroit, Michigan, April 20–23, 2009.

Aughenbaugh, Jason M., and Jeffrey W. Herrmann, Information Management for Estimating System Reliability using Imprecise Probabilities and Precise Bayesian Updating, *International Journal of Reliability and Safety*, Volume 3, Numbers 1/2/3, pages 35–56, 2009.

2008

Herrmann, Jeffrey W., Disseminating Emergency Preparedness Planning Models as Automatically Generated Custom Spreadsheets, *Interfaces*, Volume 38, Number 4, pages 263–270, 2008.

Hoy, Timothy W., and Jeffrey W. Herrmann, Optimal utilization of test facilities to replicate operational environments, *Journal of the IEST*, Volume 51, Number 2, pages 10–19, 2008.

Chincholkar, Mandar, and Jeffrey W. Herrmann, Estimating manufacturing cycle time and throughput in flow shops with process drift and inspection, *International Journal of Production Research*, Volume 46, Issue 24 December 2008 , pages 7057 – 7072.

Related News

Herrmann to lead 'Design Innovations' stream for UMD's first-year 'FIRE' program
Students will study how designers work on systems design problems. June 16, 2016

Herrmann wins IIE book award for *Engineering Decision Making and Risk Management*
The award is given for "an outstanding published book that focuses on a facet of industrial engineering, improves education, or furthers the profession." April 4, 2016

Two Mechanical Engineering Professors Named PROMISE Mentors
Professors Bruck and Herrmann nominated as AGEP PROMISE Outstanding Faculty Mentors. September 3, 2015

Herrmann Promoted to Professor
Mechanical Engineering Associate Professor Jeffrey Herrmann promoted to Professor. April 21, 2015

Herrmann Publishes New Book, *Engineering Decision Making and Risk Management*
Mechanical Engineering Associate Professor Jeffrey Herrmann publishes new book, *Engineering Decision Making and Risk Management.* April 8, 2015

Herrmann named SHS Diplomate
Society for Health Systems (IIE) bestows honor "for contributions to healthcare operations research." December 17, 2013

Student Awards, Fellowship Campaign Announced at Reliability Alumni Meeting
Faculty, staff presented awards, fundraising campaign for additional fellowship as part of next year's 25th anniversary celebration. July 11, 2013

Associate Professor Jeffrey Herrmann Edits Book on Homeland Security
Book addresses terrorist attacks, emergency preparation, and disaster recovery. December 2, 2012

Jeffrey Herrmann co-chairs Industrial and Systems Engineering Research Conference
ISERC is the premier research conference of the Institute of Industrial Engineers. May 25, 2012

DeWALT Donates Tools, Equipment to Mechanical Engineering Department
Longtime ME supporter provides the department with tools to build the future. August 2, 2011

Jeffrey Herrmann gives presentation to Institute on Medicine committee
Clinic planning expert spoke about new models of emergency public health preparedness. April 1, 2011

Graduate student William Herring wins SHS best graduate paper prize
Herring honored for his work on surgery scheduling. February 1, 2010

Graduate student William Herring honored by INFORMS health applications section
Student noted for paper on single-day surgery scheduling. October 26, 2009

Herrmann's clinic model used at UMD mass vaccination drill
University tests its preparedness for large-scale outbreaks. October 16, 2009

Herrmann group develops Vaccine Allocation Model v.1.4
Tool will aid public health officials in mass vaccinations against the H1N1 (swine) flu. July 17, 2009

Texas public health officials find eMedCheck cuts screening time in half
Software tool developed by Jeffrey Hermann's research team used in mass vaccination clinic. June 26, 2009

Herrmann interviewed for WTOP news radio
National Academy of Engineering's Randy Atkins talks with the professor about planning for mass vaccination clinics. May 12, 2009

Herrmann's Clinic Planning Model Generator software mentioned in swine flu article
MIT's *Technology Review* web site talks about how technology could aid in treating the disease. April 30, 2009

Herrmann, Hoy win IEST Maurice Simpson Award
The pair is honored for their paper on optimal utilization of test facilities to replicate operational environments. February 24, 2009

FederalNewsRadio covers ISR Systems Seminar on the Air Force tanker selection process
Reporter Max Cacas interviews Jeffrey Herrmann and GAO's Michael Golden. February 19, 2009

Jeffrey Herrmann named *IIE Transactions* departmental editor
He will edit homeland security section for the journal's "focused issue." January 5, 2009

Herrmann Receives 'Innovator of the Year' Award
His Clinic Planning Model Generator is used by public health departments across the country. August 22, 2008

Herrmann develops public health emergency preparedness blog
Planners and researchers can share information about public health emergency preparedness and modeling. November 9, 2007

New Clinic Surge Planning Model software released
The model is designed for short-duration, high-volume clinics. August 21, 2007

Herrmann Joins QUEST Honors Fellows Program as Associate Director
Multidisciplinary experience enhances undergraduate experience at College Park campus. June 29, 2007

Herrmann tapes video for Centers for Disease Control
Segment highlights his work with mass dispensing/vaccination clinics. June 4, 2007

Mechanical Engineering Recognizes Faculty Accomplishments
Edward B. Magrab honored at reception recognizing distinguished service to campus and department. May 16, 2007

Herrmann Named Associate Editor of ASME Journal
Associate Professor Jeffrey Herrmann was recently named as one of seven new Associate Editors for ASME Journal. July 15, 2006

U of M Researcher Provides Shot in the Arm to Flu Clinics
Partnership with Montgomery Co. Leads to Evaluation System Available Worldwide October 15, 2005

Two ME Grad Students Finalists in Business Plan Competition
Rohit Kumar and Alok Priyadarshi and their start-up company, Terplicators Inc., are Finalists in Business Plan Competition. May 1, 2003

Prof. Herrmann Speaks to National Defense Univ. Students
Talk was held on Monday, April 21, 2003. May 1, 2003

ASME Meeting Participants Tour Chesapeake Building
Tour was held on Wednesday, February 12, 2003. February 15, 2003

Jeffrey Herrmann Selected to Receive SME Award
Dr. Herrmann will receive this award at one of the Society's major events in May. December 15, 2002

Herrmann, Schmidt and Sandborn Awarded NSF PREMISE Grant
The NSF PREMISE grant project begins January 1, 2003, and runs until June 30, 2004. September 15, 2002

Industrial College of the Armed Forces Students Visit
The students were hosted by Assoc. Prof. Jeffrey Herrmann and were welcomed by Department Chairman Avram Bar-Cohen. May 1, 2002

Inaugural Pi Tau Sigma Award Presented to Jeffrey Herrmann
Dr. Herrmann was chosen to be the recipient of this award in recognition of his sensitivity towards the events of September 11. March 4, 2002

5 ME Faculty Present Posters at ISR Research Review Day

ME Faculty showcased their research at the poster session of today's ISR Research Review Day. March 1, 2002

Up & Coming — Sara Hewitt

Sara Hewitt recently developed a computer interface that enhances commercially available discrete event simulation software. December 15, 2001

Eight Mechanical Engineering Faculty Present at ASME Conference

Eight faculty members from the Department of Mechanical Engineering attended, presented, and were divisional chairs at the 2001 ASME Conference. September 15, 2001

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