

CURRICULUM VITAE

James D. Cordeiro, Jr.
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Education

- Ph.D. Operations Research, Air Force Institute of Technology, 2007
Emphasis: Applied Probability, Stochastic Processes, and Queueing Theory
Advisor: Dr. Jeffrey P. Kharoufeh (University of Pittsburgh)
- M.S. Operations Research, Air Force Institute of Technology, 1998
- M.S. Mathematics, University of Washington, 1992
- B.A. Mathematics and East Asian Languages, University of California, Berkeley, 1989

Academic Experience

- 8/2017-Present Assistant Professor, Department of Mathematics, College of Arts and Sciences, University of Dayton.
- 12/2010-11/2014 Assistant Professor of Statistics, Department of Mathematics and Statistics, Graduate School of Engineering and Management, Air Force Institute of Technology, Major, United States Air Force.
- 6/2003-7/2004 Assistant Professor of Mathematics, Department of Mathematical Sciences, Dean of Faculty, United States Air Force Academy.
- 6/2001-6/2003 Instructor, Department of Mathematical Sciences, Dean of Faculty, United States Air Force Academy.

Professional Work Experience

- 5/2015-7/2017 Senior Scientist, MediaDyne Systems Engineering (MDSSE), Air Force Research Laboratories (AFRL), Wright-Patterson AFB, OH.
- 11/2014-5/2015 Statistical Consultant, Applied Research Solutions, Inc., Beavercreek, OH.
- 10/2007-12/2010 Chief, Strategic Personnel Analysis, Force Management Division (AF/A1PF), Pentagon, Washington, D.C.

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| 7/2004-10/2007 | Ph.D. Candidate, Department of Operational Sciences, Air Force Institute of Technology, Wright Patterson AFB, OH. |
| 4/1998-6/2001 | Operations Research Analyst, Air Force Operational Test and Evaluation Center (AFOTEC), Kirtland AFB, NM. |
| 6/1996-4/1998 | M.S. Student, Department of Operational Sciences, Air Force Institute of Technology, Wright Patterson AFB, OH. |
| 5/1994-6/1996 | Contract Data Manager, Program Management Support, Headquarters Standard Systems Group, Maxwell-Gunter AFB, AL. |
| 1/1994-5/1994 | Officer Candidate, United States Air Force Officer Training School, Maxwell AFB, AL. |

Professional Affiliations

Member, Institute for Operations Research and the Management Sciences (INFORMS)

- Applied Probability Society (APS)
- Cincinnati-Dayton Chapter of INFORMS

Member, Institute of Industrial Engineers (IIE)

- IIE Operations Research Division

Member, Society for Industrial and Applied Mathematics (SIAM)

Tau Beta Pi, National Engineering Honor Society

Omega Rho, National Operations Research Honor Society

Honors, Awards and Recognition

- *Best Paper Award in Operations Research Track*, Industrial Engineering Research Conference, 2007
- *Best Presentation in the Military Manpower and Personnel Track*, Military Operations Research Symposium, 1998
- Nominated for the *Barchi Prize*, Military Operations Research Society, 1998

Scholarship/Research

Refereed Journal Articles

1. M.R. Morello, B.R. Kowash, J.W. McClory, J.D. Cordeiro and C. J. Bridgman (2014). Modeling fire as a nuclear weapon effect: Review and proposed research. *Journal of Radiation Effects, Research and Engineering*, 32 (1), 59-87.
2. Cordeiro, J.D. and J.P. Kharoufeh (2012). The unreliable M/M/1 retrial queue in a random environment. *Stochastic Models*, 28 (1), 29-48.
3. Cordeiro, J.D., Friend, M.A., Miller, J.O., and Bauer, K.W. (2001). Using simulation to model time utilization of Army recruiters. *Military Operations Research*, 6 (3), 59-68.

Submitted and Working Papers

1. M.R. Morello, B.R. Kowash, J.W. McClory, J.D. Cordeiro, and B.R. Kowash, (2014). Estimating disruption ignitions from a nuclear weapon using fire following earthquake methodology. Submitted to *Journal of Radiation Effects, Research and Engineering*.
2. Cordeiro, J.D. and Kharoufeh, J.P. Generalized drift criteria for the ergodicity of level dependent quasi-birth-and-death (LDQBD) processes. Working paper.
3. Cordeiro, J.D. and Kharoufeh, J.P. Dynamic optimal control of the $M/M/1$ retrial queue in a random environment. Working paper. Working paper.

Technical Reports

1. Warr, R.L. and Cordeiro, J.D. (2014) First passage moments of finite state semi-Markov processes. Report #LA-UR-14-22145. Los Alamos National Laboratory, Los Alamos, NM.

Papers in Refereed Conference Proceedings

Cordeiro, J.D. and Kharoufeh, J.P. (2007). Analysis of an unreliable retrial queue in a random environment. *Proceedings of the 2007 Industrial Engineering Research Conference*, Nashville, TN, May 19-23, 2007. (**Best Paper Award: Operations Research Track.**)

Refereed Book Chapters

Cordeiro, J.D. and Kharoufeh, J.P. (2011). Batch Markovian Arrival Processes. In *Wiley Encyclopedia of Operations Research and Management Science*, J. Cochran, L.A. Cox, P. Keskinocak, J.P. Kharoufeh, J.C. Smith (Eds.), New York, NY.

Presentations and Invited Seminars

1. Cordeiro, J.D. and Kharoufeh, J.P. (2009). Optimal rate selection for an unreliable retrial queue in a random environment. Invited session, *Industrial Engineering Research Conference*, Miami, FL, May 30-June 3, 2009.
2. Cordeiro, J.D. and Kharoufeh, J.P. (2008). Stability of an unreliable $M/G/1$ retrial queue with time-varying parameters. Invited session, *Industrial Engineering Research Conference*, Vancouver, BC, May 17-21, 2008.
3. Cordeiro, J.D., Friend, M.A., Miller, J.O., and Bauer, K.W. (1998). Using simulation to model time utilization of Army recruiters. *Military Operations Research Society Symposium*, Naval Postgraduate School, Monterey, CA, June 23-25, 1998.

Teaching and Advising Experience

Courses Taught (University of Dayton)

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| MTH 168 | Solid Analytic Geometry and Calculus I | (Fa 17) |
| MTH 218 | Solid Analytic Geometry and Calculus III | (Sp 16) |

MTH 207 Introduction to Statistics (Fa 15)

Courses Taught (Air Force Institute of Technology)

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| MATH 509 | Mathematical Methods in the Physical Sciences | (Sp 11, Fa 12) |
| OPER 641 | Stochastic Modeling and Analysis II | (Su 11, 12, Sp 14) |
| STAT 525 | Applied Statistics for Managers I | (Fa 11) |
| STAT 535 | Applied Statistics for Managers II (Linear Regression) | (Wi 12, 13) |
| STAT 701 | Advanced (Measure-Theoretic) Probability | (Su 13) |
| STAT 586 | Probability Theory for Communication and Control | (Fa 13) |
| STAT 583 | Introduction to Probability and Statistics | (Wi 14) |
| STAT 699 | Markov Decision Processes | (Fa 12) |

Courses Taught (U.S. Air Force Academy)

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| MATH 243 | Calculus III (Multivariate Calculus) | (Fa 02 – Sp 04) |
| MATH 142 | Calculus II (Integral Calculus) | (Sp 02) |
| MATH 141 | Calculus I (Differential Calculus) | (Fa 01) |

Graduate Student Advising

Completed M.S. Students

Shively, Theodore (M.S., Operations Research). *Determining Optimal Machine Replacement Events with Periodic Inspection Intervals*. Graduated March 2013. Sponsor: U.S. Air Force Air Mobility Command.

Membership on Ph.D. and M.S. Committees

Dillenburger, Steven. (Ph.D., Operations Research). *Minimization of Collateral Damage in Airdrops and Airstrikes*. Advisor: Dr. Jeffrey Cochran.

Williams, Jason P. (Ph.D., Operations Research). *Towards the Mitigation of Correlation Effects in the Analysis of Hyperspectral Imagery with Extensions to Robust Parameter Design*. Advisor: Dr. Kenneth Bauer. **Note:** Served as Dean's Representative.

Morello, Matthew R. (Ph.D., Physics). *Quantifying Fire as a Nuclear Weapon Effect: Modern Approach*. Advisor: Dr. Benjamin Kowash.

Venzin, Alexander M. (M.S., Statistics). *The Quantification of Bias in Label Based Classifier Fusion*. Advisor: Dr. Christine Schubert-Kabban.

Service and Professional Activities

Service to the University of Dayton

Departmental Service

Service to the Air Force Institute of Technology

Departmental Service

Instructor of the Quarter Selection Committee, Spring 2013

School of Engineering and Management

Dean's Representative (Ph.D. Defense), Aug 2012

Faculty Research Council, Dept. of Math/Stat Representative, 2012 - Present

Faculty Development Committee, Dept. of Math/Stat Representative, 2011 - Present

Service to the U.S. Air Force Academy

Advisor-in-Charge, Basic Sciences Division, 2003-2004

Associate Air Officer Commanding for Academics (AAOC), 2002-2004

Basic Cadet Training Faculty Observer, Summer 2003

Course Director, Math 141 (Differential Calculus), Summer 2002

Academy Summer Seminar for U.S. High School Students, Instructor, Summer 2002

Service to the Discipline

Ad Hoc Reviewing for

- Reviewer, *Operations Research*
- Reviewer, *Operations Research Letters*
- Reviewer, *Naval Research Logistics*
- Reviewer, *IIE Transactions*
- Reviewer, *Mathematical Methods of Operations Research*
- Reviewer, *Operational Research*
- Reviewer, *Journal of Statistical Theory and Practice*
- Reviewer, *Opsearch*
- Reviewer, *Simulation Modeling Practice and Theory*

Positions of Leadership

President, Cincinnati-Dayton Chapter of INFORMS, 2014 - 2015

Vice President, Cincinnati-Dayton Chapter of INFORMS, 2013 - 2014

Treasurer, Cincinnati-Dayton Chapter of INFORMS, 2012 - 2013