

## Jesse B. Crawford

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CONTACT INFORMATION	Department of Mathematics Tarleton State University Box T-0470 Stephenville, TX 76402	faculty.tarleton.edu/crawford jcrawford@tarleton.edu Phone: (254) 434-7995 Fax: (254) 968-9534
EDUCATION	<b>Ph.D. in Mathematics</b> , Indiana University, 2008. <ul style="list-style-type: none"><li>• Dissertation: “Interpretation of Eigenvalues in Multivariate Statistical Analysis and Bartlett’s Test for Riesz Distributions”</li><li>• Advisor: Steen Andersson</li></ul> <b>B.S. in Mathematics</b> , Angelo State University, 2002.	
PROFESSIONAL EXPERIENCE	<b>Assistant Professor of Mathematics</b> , Fall 2008 – Present. <i>Tarleton State University</i> , Stephenville, TX. <b>Associate Instructor of Mathematics</b> , Fall 2002 – Spring 2008. <i>Indiana University</i> , Bloomington, IN. <b>Research Assistant</b> , Spring 2006. <i>Indiana University</i> , Bloomington, IN. Built a statistical model for predicting student performance in math courses on the basis of math skills assessment scores and SAT scores. Assistant for Professor Dan Maki.	
RESEARCH INTERESTS	Multivariate Statistical Analysis, Graphical Models, Group Invariant Models, Data Mining, and Education Research	
PUBLICATIONS	<b>Modeling the Impact of CAFOs on Nitrate Contamination in the Middle Trinity Aquifer of Central Texas</b> , with Kartik Venkataraman and Keith Emmert, accepted for publication, January 2015. <i>Proceedings of the 2015 Environmental and Water Resources Institute Congress</i> . <b>A Likelihood Ratio Test for Equality of Natural Parameters for Generalized Riesz Distributions</b> , with Steen Andersson, May 2014. <i>Sankhya, The Indiana Journal of Statistics</i> , 1-25. <b>General Canonical Correlations with Applications to Group Symmetry Models</b> , with Steen Andersson, August 2010. <i>Journal of Multivariate Analysis</i> , 101(7), 1547-1558.	
PRESENTATIONS	<b>Testing Equality of Natural Parameters for Generalized Riesz Distributions</b> , Mathematical Association of America Texas Section meeting, Texas A&M International University, April 2014. <b>The Impact of Innovative Student Success Strategies in Freshman Mathematics Courses</b> , Faculty and Staff Lunch Lounge, Tarleton State University, March 2014.	

**An Analysis of Admissions Standards Based on High School Rank and SAT Scores**, Mathematical Association of America Texas Section Meeting, Texas Tech University, April 2013.

**A Brief Introduction to Game Theory**, Tarleton State University Math Club, April 2011.

**Group Actions in Statistics**, Mathematical Association of America Texas Section Meeting, University of Texas at Tyler, April 2011.

**Overview of Mathematical Statistics**, Tarleton State University Math Club, April 2009.

**Canonical Correlations for Group Symmetry Models**, Conference of Texas Statisticians, Sam Houston State University, March 2009.

STUDENT  
RESEARCH &  
PRESENTATIONS

Barr, L., Bresz, K., Geertz-Larson, P., Koo, J., Kristufek, P., Simkhada, V., Crawford, J., and Little, B. (2014). "Using Statistical Models to Predict Anomalous Crop Insurance Claims", Presented at the Tarleton Student Research Symposium, Stephenville, TX.

Ator, R., Gibson, D., Mysnyk, D., Wisseman, A., Simkhada, V., Crawford, J., and Little, B. (2014). "Unsupervised Learning Classification of U.S. Crop Insurance Claims Using the NDVI: Saving U.S. Taxpayer Dollars", Presented at the National Consortium for Data Science Data Showcase, Chapel Hill, NC.

Ator, R., Gibson, D., Mysnyk, D., Wisseman, A., Crawford, J., and Little, B. (2013). "Not Enough Sun in Oklahoma", Presented at the Pathways Student Research Symposium, Texas A&M University-Kingsville, Kingsville, TX.

Nayani, A. (2012). *Logistic Regression Models for Effective Course Placement: Determining which Factors Influence Success Rates in Freshman Undergraduate Courses*. Master's thesis, Tarleton State University, Stephenville, TX.

GRANTS

**Organized Research Grant**, with Keith Emmert and Peter White, 2008-2009, \$24,891.00.

HONORS AND  
AWARDS

**Distinguished Service Award**, Tarleton State University, Spring 2013.

**William B. Wilcox Mathematics Award**, Indiana University, Spring 2006.

COURSES TAUGHT **Tarleton State University**

- MATH 120 Calculus I
- MATH 209 Calculus II
- MATH 131 Introductory Statistics
- MATH 350 Principles of Biostatistics
- MATH 311 Prob. and Statistics I
- MATH 411 Prob. and Statistics II
- MATH 490 Statistical Models
- MATH 505 Prob. and Statistics
- MATH 550 Applied Linear Algebra
- MATH 564 Data Mining I
- MATH 566 Data Mining II
- MATH 588, Master's Thesis

## **Indiana University**

- K305 Stat. for Journalism Majors
- M119 Brief Calculus
- M118 Finite Mathematics
- T103 Geometry for Elem. Teachers
- M025 Precalculus
- M014 Basic Algebra
- J110 Intro to Problem Solving

## **SERVICE**

### **University Committees**

- Academic Standards Committee, January 2009 – Present.
- Faculty Senate, January 2012 – January 2014.
- COST Curriculum Committee, January 2010 – January 2013.
- Retention Data Committee, Spring 2012.
- Retention Functional Committee, Spring 2011.

### **Other University Service**

- Tarleton Student Research Symposium, Faculty Mentor/Judge, November 2013 and November 2014.
- Faculty Partner Program, Faculty Mentor, September 2012 – May 2013.
- High School “Numbersense” Contest Director, UIL Practice Meet, Stephenville, Texas, February 2011.
- “We’ve got your number” Contest Director, Science Olympiad, Stephenville, Texas, February 2009.
- High School “Numbersense” Contest Director, UIL Meet, Stephenville, Texas, February 2009.

### **Mathematics Departmental Service**

- Coordinator of the Graduate Program in Mathematics, September 2014–Present.
- Chair, Faculty Search Committee, December 2014–March 2015.
- ASU Professional Job Fair, Representative for TSU, September 2010.
- Texan Tour, Representative for Mathematics Department, November 2009.
- Oral Examination Committee Member for Michael Warren, Melissa Lewis, Kayla Gillaspay, James Peiskee, James Ryan, James Garcia, Virginia Seale, Ezekiel Gomez, Kailey Keith, Vivek Simkhada, Rebecca Ator, Charles Gibson, Dan Mysnyk, Adam Wisseman, Carrie Noll, and Diane Casey.

## Courses, Curricula, and Programs Developed

- **M.S. in Mathematics with Emphasis in Data Mining**, Spring 2012. Worked with other faculty members to create this fifteen-month master's program, which includes six \$25,000 research assistantships each year.
- **MATH 505**, Fall 2012. Converted this course from a measure theoretic probability course to a multivariate statistical models course incorporating formal proofs and applied statistical programming. Course was changed to support the M.S. in mathematics with emphasis in data mining.
- **MATH 411**, Spring 2011. Created this calculus-based statistics course as a sequel to MATH 311, a calculus-based probability course. A two semester sequence in calculus-based probability and statistics provides a better balance of theory and applications and prepares students for future work where knowledge of statistical methods is relevant.

## PROFESSIONAL DEVELOPMENT

**MAA Professional Enhancement Program in Mathematical Biology**, Texas Tech University, July 2009.

**Spring Meeting of Texas Project NExT**, University of North Texas, April 2009.

**Fall Meeting of Texas Project NExT**, Sam Houston State University, September 2008.

**Actuarial Exam P**, Fall 2004. Received a perfect score on the first actuarial exam.

## CONFERENCES ATTENDED

- Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America, San Antonio, TX, January 2015.
- National Consortium for Data Science Data Showcase, Chapel Hill, NC, May 2014.
- Mathematical Association of America Texas Section Meeting, Texas A&M International University, Kingsville, TX, April 2014.
- Pathways Student Research Symposium, Texas A&M International University, Kingsville, TX, November 2013.
- Mathematical Association of America Texas Section Meeting, Texas Tech University, Lubbock, TX, April 2013.
- Mathematical Association of America Texas Section Meeting, University of Texas at Tyler, Tyler, TX, April 2011.
- Mathematical Association of America Texas Section Meeting, University of North Texas, Denton, TX, April 2009.
- Conference of Texas Statisticians, Sam Houston State University, Huntsville, TX, March 2009.
- Fourth Annual Texas Undergraduate Mathematics Conference, Sam Houston State University, Huntsville, TX, September 2008.