Cheryl P. Edelmann

Lecturer
University of Dayton

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Education:

Master of Science in Statistics, 1994
Miami University, Oxford, Ohio
Graduated *cum laude*
Graduate Assistantship
* Honored with Graduate Student Effective Teacher Award, 1994

Bachelor of Science in Mathematics, 1992
University of Dayton, Dayton, Ohio
Minors: Computer Science, Religious Studies
Graduated *magna cum laude*
* Recipient of University of Dayton President's Scholarship

Academic Experience:

Lecturer

University of Dayton, Dayton, Ohio
August 2013 to Present

- Teach introductory statistics (DSC 210 and DSC 211) for Business majors in the Department of Management Information Systems, Operations Management, and Decision Sciences. Topics covered include probability theory, probability distributions, sampling distributions, one-sample inferential statistics, hypothesis testing for one and two populations, design of experiments/analysis of variance, simple linear regression, and multiple regression.

- Course coordinator for DSC 210 and DSC 211 beginning in Fall 2016.

Adjunct Faculty

University of Dayton, Dayton, Ohio
August 2011 to May 2013

- Taught introductory statistics (DSC 210) for Business majors in the Department of Management Information Systems, Operations Management, and Decision Sciences. Topics covered included descriptive statistics, probability theory, probability distributions, sampling distributions, and an introduction to one-sample inferential statistics. This course was taught using Excel as the primary technology for both descriptive and inferential statistics.

Adjunct Faculty — **University of Dayton,** Dayton, Ohio
August 1999 to December 2011

- Taught introductory statistics (MTH 207) in the Department of Mathematics. Topics covered included descriptive statistics, probability distributions, sampling distributions, estimation, and hypothesis testing for single population problems.

Adjunct Faculty — **Edison State Community College,** Piqua, Ohio
January 1996 to May 1996

- Taught a college algebra course with topics including functions, polynomial equations, exponential and logarithmic relationships, systems of equations and inequalities, and conic sections.

Instructor — **Miami University**, Oxford, Ohio
August 1994 to May 1995

- Taught 12 credit hours in statistics per semester consisting of two sections of STA 368 (Introduction to Statistics for Engineering Students) and one section of STA 261.S (Introduction to Statistics for Social Science Majors).

Professional Experience:

Research Assistant — **Air Force Institute of Technology,** Dayton, Ohio
April 2013 to Present

- Currently (August 2013-present) working on a project involving the classification accuracy of tests performed in sequence. In order to find the thresholds of each test in the sequence that results in maximum correct classification, data must be evaluated at each possible threshold. There may be efficiencies gained by structuring the sequence of tests into a classification tree. Formulas were derived for correct classification and comparisons made between the sequences and classification trees under various rules. This project has also involved simulating large amounts of data to demonstrate the uses and biases of this technique. Using the trees will allow for more efficient estimates and sequence classification tests in order to improve performance and accuracy of the sequence.

- (April 2013 – August 2014) Supported research that involved conducting and developing statistical methods related to the emerging technology for integrated structural health monitoring (ISHM) systems. ISHM is essential for the Air Force to sustain their air vehicles. The ISHM process determines system-level health status based on combined assessments of various subsystem conditions and, if necessary, interacts with the Vehicle Management System (VMS) to perform real-time trajectory and mission re-planning. In order to bring ISHM to fruition, real-time architecting with advanced reasoning needs to be developed.

  This work branches both information fusion decision criteria along with diagnostic and prognostic modeling. Focused on the modeling side, the next generation of regression models is sought to aid the prognostic capability of the ISHM system by accurately predicting current damage status, and essentially given potential environmental constraints, predicting time to structural failure.

Statistical Consultant — **Cheryl P. Edelmann,** Troy, Ohio
August 2004 to August 2005 and
November 2000 to April 2001

- Completed a statistical analysis for the Dayton Power and Light Company to determine optimal line clearance efforts necessary to maintain strong system reliability. This project involved using regression analysis as well as time series modeling to predict future number of outages based on current line clearance operations and weather-related factors. In 2004-2005, provided updates to the estimates using the most recent data available.

Business Analyst — **Dayton Power & Light Company,** Dayton, Ohio
May 1996 to March 1999

- Developed Visual Basic code in Microsoft Access to implement a new system to process outage data using various algorithms and information sources. Enhanced original program to store dynamic electrical system structure for increased accuracy of reporting. This tool has saved company employees countless hours of research which would have been necessary to compile and report the information.

- Created and maintained several large databases in Microsoft Access including outage data for the entire company. These databases included advanced custom queries designed to meet specific data processing needs.

- Provided statistical support to various departments by performing data analysis and furnishing recommendations for process improvements. This included developing Dayton Power and Light's procedure for using statistically appropriate sample sizes in an annual gas meter testing program.

- Used statistical methods to predict equipment failures using historical data.

Statistical Consultant — **Procter and Gamble**, Cincinnati, Ohio
June 1995 to August 1995

- Developed a SAS program to globally standardize the statistical analysis of stability studies for new and marketed drug entities.

Service Activities:

Faculty Representative : TAGS (Teaching A Global Student community) committee (Oct. 2013-present)
Member : Catholic and Marianist Identity Committee (August 2014 – present)
Chair : Catholic and Marianist Identity Committee (September 2016 – present)

Conference Proceedings and Presentations:

King, A.S., Schubert, C.M., Edelmann, C.P., Derriso, M. An Evaluation of Joint Models Using Different Feature Extraction Metrics for Structural Health Monitoring (SHM) of Aircraft. Interface Conference on Applied Statistics, Washington D.C., 10-12 Dec 2013.

Professional Memberships: American Statistical Association