

SHARON L. LEWIS, PH.D.

Department of Engineering
Ira A. Fulton Schools of Engineering
Arizona State University, Polytechnic

Sharon.L.Lewis@asu.edu

480-727-5491

EDUCATION

Ph.D. Industrial Engineering

Arizona State University, 1998

Focus Areas: Applied Statistics, Simulation, Queueing Theory, Operations Research

Dissertation Title: *Analysis of Designed Experiments Using Generalized Linear Models*

Committee Chair: Dr. Douglas Montgomery, Regents Professor of Industrial Engineering & Statistics

M.S. Industrial Engineering

Arizona State University, 1990

Focus Areas: Statistics, Quality Engineering, and Engineering Management Systems

Thesis Title: *A Decision Support System for Quality Product and Process Design*

Committee Chair: Dr. Dwayne Rollier, Emeritus Professor of Industrial Engineering & Statistics

M.B.A. Master of Business Administration

Arizona State University, 1989

Focus Areas: Macro and Micro Economics, Strategic Management, Accounting

B.S. Industrial Engineering

Montana State University, 1983

PROFESSIONAL CERTIFICATION **Engineer-in-Training (EIT), 1983**

RESEARCH INTERESTS:

- Queueing theory, stochastic discrete event simulation.
- Operations research and mathematical programming applications.
- Applied statistics, design of experiments, regression analysis.

PROFESSIONAL EXPERIENCE:

- **Senior Lecturer, Arizona State University, Polytechnic**
Mesa, AZ
Aug 2010 – Present

TEACHING

EGR 201	Use-Inspired Design Project 1
EGR 280	Engineering Statistics
EGR 481	Engineering Econometrics
EGR 382	Modeling Manufacturing Systems I
EGR 525	Lean Manufacturing
EGR 480	Advanced Statistics for Manufacturing
MET 401 & MET 501	Statistical Quality Assurance
EST 465 & EST 565	Statistical Process Control
MET 410 & MET 510	Manufacturing Resources Management
MET 415 & MET 515	Manufacturing Simulation
MET 409 & MET 509	Engineering Economics
MET 507	Manufacturing Enterprise
EST 494 & EST 598	Statistical Process Control
STP 420	Introductory Applied Statistics
OMT 461	Operations Management (On-line course, Blackboard)
ASU 101	The College Experience
MAT 142	College Mathematics (Hybrid course, Knewton Learning Environment)
MET 484	Internship
MET 593	Applied Project
MET 599	Thesis

Service to Department and University

- Annual Peer Review Committee (Contract Faculty) 2015, 2014
- ASU Green Devil Team (2015)
- Assisting in preparation of Engineering Department Self –Study. (2016)
- Chair, Co-chair, and Member of multiple Graduate Student Master Theses and Applied Projects.
- Mentor/Faculty Sponsor on multiple Student Internships.
- Teach Fundamentals of Engineering Practice Sessions (2015, 2014, 2013)
- Participated in the ABET accreditation process for the engineering technology program.
- Member of the Manufacturing Faculty Search 2011 Selection Committee.
- Previous Member on Graduate Committee and CTI STEM Core and General Studies Task Force.
- Member of Peer-Review Committee (2014) for contract faculty.

Service to Community

- **STEM Related Volunteer:**
 - Created and delivered a presentation on a STEM topic for students at San Marcos Elementary School, Title I school.
 - Served on Review Committee for Advanced Studies Independent Project (*Harmonic Oscillators and Feynman Diagrams*) for Corona del Sol High School, Tempe. Gifted and Services Coordinator, Dan Bruegger, Student, Cyndia Yu.
- **Non-STEM Volunteer Contributions:**
 - Volunteered at Dujiangyan Base of China Conservation and Research Center for the Giant Panda. Shiquio Village, Dujiangyan, Sichuan China. (Full day, 2015) Cleaned panda enclosures and habitats, prepared panda meals, assisted in hand feeding pandas.
 - Volunteered at Children's Museum (Phoenix) prepping materials for displays in play areas.
 - Volunteered for Grad Night at Corona del Sol High School.
 - Member of Corona del Sol High School PTO.
 - Member of Corona del Sol High School Cross Country Boosters.
 - Attended 'Service Dogs' Charity function to generate financial support and awareness for organization that trains dogs for service to disabled.
 - Volunteer at Sunrise Assisted Living (Memory Impaired Retirement Community, visit and play games with residents).
 - Participate in Boeing Volunteer Days (Sonoran Desert Preserve clean-up, United Way runs).
 - Volunteer alongside students at Community Service Events for National Honors Society and National Junior Honors Society.
 - Volunteered for Art Masterpiece, national elementary school program.
- **Faculty Associate, Arizona State University, Tempe Campus & Polytechnic Campus**
Tempe and Mesa, AZ, 2009, 2008, 2005, 1998, 1996
- **Statistical Consultant**
Chandler, AZ. April 95 - March 99
 - Provided statistical and quality consulting on industrial applications for enhanced decision making.
 - Provided expertise in statistical data analysis techniques, simulation, design of experiments, statistical process control, regression analysis, and response surface methodology.
 - Primary Client: ICI Fiberite, Tempe, AZ
- **Editorial Assistant & Reviewer, *Journal of Quality Technology*, Editor Dr. Douglas C. Montgomery,**
Tempe, Arizona. 1997
 - Liaison between manuscript reviewers and authors.
 - Participated in final proofing of manuscripts.
 - Selected as reviewer for several manuscripts submitted for publication. Involved assessing technical accuracy, manuscript editing, and evaluating relevance to *JQT* audience.

○ **Corporate Statistician, ICI Fiberite**

Tempe, AZ, Dec 93 – April 95

- Provided statistical and quality consulting to all domestic and international ICI Fiberite sites.
- Provided expertise in design of experiments, response surface methodology, regression analysis, and inference testing.
- Developed procedure for optimal allocation of capital expense budgets to meet multiple goals using mathematical programming techniques.
- Created simulation model for improving manufacturing processes including resource allocation and task scheduling for optimal throughput.

○ **Industrial Engineer, McDonnell Douglas Helicopter Company**

Mesa, Arizona

Dec 85 – Dec 93

Advanced Products Development & Technology

- Managed program for design of all composite trim and drill fixtures for MD900 helicopter.
- Lead knowledge acquisition tasks and coding in LISP for knowledge-based engineering tool design system.
- Provided expertise in statistical design of experiments to quality improvement projects.
- Managed program for design and development of Total Quality Management (TQM) workbench.

Operations Research Analyst (Mission Effectiveness) - Research and Engineering

- Performed combat mission effectiveness analyses using computer simulation model, data reductions, and advanced statistical analyses. (Security Clearance - Secret).
- Created and modified simulation code as required.

AH-64 Apache Manufacturing

- Improved accuracy of manufacturing performance reports used for management decision making.
- Simplified computerized reporting system so labor intensive task could be performed by clerks.

○ **Industrial Engineer, Motorola Inc.**

Phoenix, Arizona

April 84 – Dec 85

Zener/Rectifier Wafer Processing

- Initiated and performed projects to improve efficiency of labor, equipment, and processes.
- Designed and optimized the layout of several large production areas; produced blueprints using computerized CAD software.
- Organized/directed the construction of production areas; required coordination of many supporting functions.

PUBLICATIONS

Refereed Scholarly Journals

“Examples of Designed Experiments with Nonnormal Responses”. Lewis, S.L.; Montgomery, D.C.; and Myers, R.H. *Journal of Quality Technology* . July 2001, Vol. 33, No.3.

“Confidence Interval Coverage and Precision for Designed Experiments Analyzed with GLM”. Lewis, S.L.; Montgomery, D.C.; and Myers, R.H. *Journal of Quality Technology*. July 2001, Vol. 33, No.3.

“The Analysis of Designed Experiments with Nonnormal Responses”. Lewis, S.L.; Montgomery, D.C.; and Myers, R.H. *Quality Engineering*. December 1999, Vol 12, No. 2.

Invited to Review Manuscripts for Refereed Journal, *Journal of Quality Technology*, Editor Dr. Douglas C. Montgomery

Served as reviewer for several technical manuscripts for *JQT* submitted for review and publication. .

Invited to Write Book Review in Refereed Journals

Lindsey, James K., *Applying Generalized Linear Models*. *Journal of Quality Technology* . July 1999, Vol. 31, No.3.

Publication Selected as Top Paper in Session

“Rotorcraft Maneuverability and Agility Survivability Sensitivity Analysis”. Drummond, S.L. (**Published under maiden name Drummond**) and Swinsick, S., *47th American Helicopter Society Annual Forum, 1991*,

Other Publications

“Analysis of Designed Experiments Using SAS PROC GENMOD”. Montgomery, D. C.; Borror, C.M; and Lewis, S.L. *Proceedings of the Western Users of SAS Software*, 1997.

“Taking Students to the Top – Evaluation”. Rhoads, T.; Zimmer, L; and Lewis, S. *The American Society for Engineering Education Pacific Southwest Section Conference*, 1997.

“An Application of Knowledge-Based Engineering to Composite Tooling Design”. Drummond, S.L. (Published under maiden name Drummond), *48th American Helicopter Society Annual Forum*, 1992.

“Air-to-Air Combat Test - IV (AACT-IV), AH-64A Mission Effectiveness Analysis (Volume 1)”. Drummond, S.L. (Published under maiden name Drummond) *U.S. Army Aviation Applied Technology Directorate*, 1988.

Dissertation:

“Analysis of Designed Experiments Using Generalized Linear Models”. Lewis, S. L.
Ph.D. Dissertation, Department of Industrial Engineering, Arizona State University, 1998.