

PUSHPA L. GUPTA

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EDUCATION

Ph.D. (Mathematics), Wayne State University, Detroit, Michigan, 1970
M.S. (Pure Mathematics), University of Illinois, Urbana, Illinois, 1966
M.A. (Applied Mathematics), Panjab University, Chandigarh, India, 1962

TEACHING EXPERIENCE

Co-Chair of the Department of Mathematics & Statistics, University of Maine,
Orono, Maine, April, 2000 - August 31, 2000
(Appointed by the Dean of the College of Liberal Arts and Sciences)

Visiting Mathematical Statistician, School of Aerospace Medicine
Brooks AFB, Texas, 1982-1984

Professor, University of Maine, Orono, Maine, 1989-Present

Associate Professor, University of Maine, Orono, Maine, 1982 – 1989

Assistant Professor, University of Maine, Orono, Maine, 1977 – 1982

MEMBERSHIP IN LEARNED SOCIETIES

- American Statistical Association
- Bernoulli Society of the International Statistical Institute
- Institute of Mathematical Statistics
- Elected member of the International Statistical Institute (ISI)

EDITORSHIP

Associate Editor of Pakistan Journal of Statistics, 1996-2006

RESEARCH GRANTS (EXTERNAL FUNDING)

- “Strategies for increasing recruitment of women in Mathematics and Statistics at the University of Maine”, Climate Research Award by NSF Advance Rising Tide Center, May 2011. Amount: \$3,500.
- United States AFOSR Summer Research Extension Program Award, January 1, 1995- December 31, 1995. Amount: \$27,859.
- United States Air Force Summer Faculty Research Award, Armstrong Laboratory, Brooks AFB, TX, 1994. Amount: \$15,000.
- Travel Grant Proposal funded by NASA thru Maine Science and Technology Foundation, Augusta, Maine, January 1994. Amount: \$1,000.
- AFOSR Research Initiation Program Award, January 1-December 31, 1993. Amount: \$21,472.
- United States Air Force Summer Faculty Research Award, Armstrong Laboratory, Brooks AFB, TX, 1992. Amount: \$14,000.
- AFOSR Mini Grant, January 1 - December 15, 1991. Amount: \$32,044.
- United States Air Force Summer Faculty Research Award, School of Aerospace Medicine, Brooks AFB, TX, 1990. Amount: \$13,630.
- IPA Grant by the USAF School of Aerospace Medicine, Brooks AFB, TX, September 1982 - August 1984. Amount: \$90,000.

INTERNAL FUNDING

- “Job Prospects in Actuarial Science” Proposal was funded by the Centre of Teaching Excellence, April 2, 2010. Amount: \$595.26.
- Technology Proposal funded by the CLASS Unified Fee Grants Committee, spring 2003 (P. Gupta: Chair of the Technology Committee). Amount: \$31,300.
- Technology Proposal funded by the CLASS Unified Fee Grants Committee, spring 2002 (P. Gupta: Chair of the Technology Committee). Amount: \$5,500.
- Minitab - "A Popular Approach for Learning Statistics" funded by UMACAC, May 18, 1998 (P.I. Pushpa Gupta). Amount: \$4,725.
- Faculty summer Research Award, University of Maine, 1985. Amount: \$4,700.
- Faculty Summer Research Award, University of Maine, 1978. Amount: \$2,400.

REFEREED PUBLICATIONS

- Reliability functions of discrete distributions and their relationships (submitted) January 29, 2014.
- Some properties of the bivariate log- normal distribution for reliability applications (with R. Gupta); *Applied Stochastic Models in Business and Industry*, 28, 598-606, 2012.
- Reliability and non-reliability studies of Poisson variables in series and parallel systems (with R. Gupta, S.H. Ong, and H.M. Srivastava); *Applied Mathematics and computation*, 218, 5112-5120, 2012.
- Failure rate of the mixtures of two skew- normal variables (with R. Gupta); *Journal of Statistical Theory and Applications*, Vol. 8(4), 494-505, 2009.
- Distribution of linear function of correlated ordered variables (with R.Gupta); *Journal of Statistical Planning and Inference*, 2490-2497, 2009.
- A class of Hurwitz-Lerch Zeta distributions with application (with R. Gupta, S.H. Ong, and H.M. Srivastava); *Applied Mathematics and Computation*, 196 (2), 521- 531, 2008.
- Monotonicity of the (reversed) hazard rate of the (maximum) minimum in bivariate distributions (with R. Gupta & R.D. Gupta); *Metrika*, 63, 223-241, 2006.
- Modeling count data by random effect Poisson model (with R. Gupta & S.H. Ong); *Sankhya*, 66 (3), 548- 565, 2004.
- Score test for zero-adjusted generalized Poisson regression model (with R.Gupta & R.C. Tripathi); *Communications in Statistics*, 33 (1), 47- 64, 2004.
- A confidence interval test for testing Poisson model against zero-inflated Poisson model, (with B. He, M. Xie and T.N. Goh); *Journal of Applied Statistical Sciences*, 12 (3), 209-220, 2003.
- Failure rate of the minimum and maximum of a multivariate normal distribution (with R.Gupta); *Metrika*, 53, 39 - 49, 2001.
- On the monotonicity of the reliability measures of the beta distributions (with R.Gupta); *Applied Mathematics Letters*, 13, 5 - 9, 2000.
- On the crossing of reliability measures (with R.Gupta); *Statistics and Probability Letters*, 46, 301- 305, 2000.
- Frailty models and their applications (with R.Gupta); *Statistical Methods*, 1 (1), 41-53, 1999.

- A general approach of studying random environmental models (with R. Gupta); *Quality Improvement through Statistical Methods*, (Editor: Bovas Abraham); Birkhauser Publisher, Boston, 351- 362, 1998.
- Correction for bias introduced by truncation in Pharmacokinetic studies of environmental contaminants (with Michaelek, R.C. Tripathi, K. Selvavel and P. Kulkarni); *Environmetrics*, 9, 165-174, 1998.
- Numerical methods for the maximum likelihood estimation of Weibull parameters (with R. Gupta and S. Lvin); *Journal of Statistical Computation and Simulation*, 62(1-2), 1-7, 1998.
- Modeling failure time data by Lehman alternatives (with R.Gupta and R.D.Gupta); *Communications in Statistics*, 27(4), 887- 904, 1998.
- On the multivariate normal hazard rate (with R.Gupta); *Journal of Multivariate Analysis*, 62, 64-73, 1997.
- On the monotonic properties of discrete failure rates (with R. Gupta and R.C. Tripathi); *Journal of Statistical Planning and Inference*, 65, 255-268, 1997.
- Analysis of failure time data by Burr distribution (with R. Gupta and S.J. Lvin); *Communications in Statistics*, 25(9), 2013-2024, 1996.
- Analysis of zero-adjusted count data (with R. Gupta and R.C. Tripathi); *Computational Statistics and Data Analysis*, 23, 207-218, 1996.
- Ageing characteristics of Weibull mixtures (with R. Gupta); *Probability in the Engineering and Informational Sciences*, 10, 591-600, 1996.
- An additive random environmental model (with R.D. Gupta); *Journal of Applied Statistical Science*, 4(1), 45-56, 1996.
- Inflated modified power series distributions with applications (with R.Gupta and R.C. Tripathi); *Communication in Statistics*, 24 (9), 2355-2374, 1995.
- Relative Errors in Reliability Measures, Topics in Statistical Dependence (with R.D. Gupta); *IMS Lecture Notes*, Monograph series, Vol. 16, 251-256, 1991.
- Effect of length-biased sampling on the modeling error (with R.C. Tripathi); *Communications in Statistics*, Vol. 19, #4, 1483-1491, 1990.
- A bivariate random environmental stress model (with R.D. Gupta); *Advances in Applied Probability*, 22, 501-503, 1990.
- Sample size determination in estimating a covariance matrix (with R.D. Gupta); *Computational Statistics and Data Analysis*, 5, 185-192, 1987.

- A characterization for GPSD signals in additive noise; *Communications in Statistics*, vol. 16, #1, 233-240, 1987.
- Incomplete moments of modified power series distributions with applications (R. Gupta and R.C. Tripathi) (Invited Paper); *Communications in Statistics*, 15(3), 999-1015, 1986.
- A characterization of the Poisson process (with R. Gupta); *Journal of Applied Probability*, 23, 233-235, 1986.
- Misclassification probabilities for quadratic discrimination (with J. Riley and T. White); *SIAM Journal on Scientific and Statistical Computing*, 7(4), 1400-1417, 1986.
- Some characterizations of distributions by truncated moments; *Mathematische Operations Forschung und Statistik*, 16, #3, 465-473, 1985.
- On the moments of residual life in reliability and some characterization results (with R. Gupta); *Communications in Statistics*, 12(4), 449-461, 1983.
- Modules with cyclic support; *Periodica Mathematica Hungarica*, Vol.14 92), 163-175, 1983.
- Probability generating functions of a MPSD with applications; *Mathematische Operations Forschung und Statistik*, Vol.13, #1, 99-103, 1982.
- Structural properties and estimation in $ME_k/1$ queue; *Communications in Statistics*, Vol. A11, #6, 711-719, 1982.
- Probability of ties and Markov Property in discrete order statistics (with R. Gupta); *Journal of Statistical Planning and Inference*, 5, 273-279, 1981.
- On the moments and factorial moments of a MPSD (with J. Singh); *Proceedings of NATO International Summer School on Statistical distributions in Scientific Work*, Trieste, Italy, Vol. 4, 189-196, 1981 (Eds. Tallie, Patil, and Baldessari; D. Reidel Publishing Company).

TECHNICAL REPORTS

- Regression to the Mean in Half-life Studies, # of pages 21, submitted on December 1995 to the *Air Force office of scientific research* through Research & Development Laboratories.
- Regression to the Mean in Half-life Studies, # of pages 20, submitted on September 1994 to the *Air Force Office of Scientific Research* through Research and Development Laboratories.

- A comparison of various estimators of Half-Life in the Air Force Health Study, # of Pages 47, submitted on December 8, 1993 to the *Air Force Office of Scientific Research* through Research and Development Laboratories.
- Estimation of Dioxin Half-Life in the Air Force Health Study, # of pages 20, submitted on September 24, 1992 to the *Air Force Office of Scientific Research* through Research and Development Laboratories.
- An investigation of Dioxin Half-Life Estimation in Veterans of Project Ranch Hand, # of pages 24, submitted on December 5, 1991 to the *Air Force Office of Scientific Research* through Universal Energy Systems, Inc.
- Dioxin Half-Life Estimation in Veterans of Project Ranch Hand, # of pages 27, Submitted on August 28, 1990 to the *Air Force Office of Scientific Research* through Universal Energy Systems, Inc.

PARTICIPATION IN THE AIR FORCE HEALTH STUDY (1982-1998)

During 1982-1998, I have been involved in the Air Force prospective study of Veterans of Operation Ranch Hand, the unit responsible for aerial spraying of herbicides in Vietnam from 1962-1971. The study, called the Air Force Health Study, was designed to determine whether exposure to the herbicides or their contaminant, 2, 3, 7, 8 tetrachlorodibenzo-p-dioxin (dioxin), had adversely affected the health, survival, or reproductive outcomes of Ranch Hand Veterans.

Estimating dioxin half-life is extremely important if analysts are to interpret, properly, associations between health and the extrapolated initial dose. Various estimators were available for dioxin half-life. My task was to obtain the most efficient procedure that will yield the least variance of the estimators of the half-life and refine the models, which were developed over the years to estimate the half-life accurately. This project was very challenging and rewarding. The experience I gained from this project helped me in understanding the statistical issues we run into when we are dealing with real world problems.

PAPERS PRESENTED AT NATIONAL AND INTERNATIONAL CONFERENCES / UNIVERSITIES

- Reliability Characteristics of Discrete Distributions; *Institute of Mathematical Sciences, University of Malaya*, Kuala Lumpur, March 7, 2014 (Invited).
- Hazard Rate and Mean Residual Life Functions of Discrete Distributions; *Joint Statistical Meetings (JSM)*, Montreal, Canada, August 6, 2013.
- Hazard Rate function of the discrete distributions; *Joint Statistical Meetings (JSM)*, San Diego, California, July 30, 2012.

- Reliability Studies of Bivariate Normal and Log- Normal Distributions; A Poster presentation at *Advancing Women in Academia: A Networking Conference*, University of Maine, Orono, Maine, May 14, 2012.
- Hazard Rate of the Discrete Distribution, *Institute of Mathematical Sciences, University of Malaya*, Kuala Lumpur, January 19, 2012 (Invited).
- Hazard Rate of Normal and Log-Normal Distributions; *Institute of Mathematical Sciences, University of Malaya*, Kuala Lumpur, January 17, 2012 (invited).
- Reliability Studies of Bivariate Normal and Log-Normal Distributions; *International Sri Lankan Statistical Conference: Statistical Concepts & Methods For the Modern World*, Colombo, Sri Lanka, December 29, 2011 (Invited).
- Reliability Studies of Bivariate Log-Normal Distribution; *58th ISI World Statistics Congress*, Dublin, Ireland, August 22, 2011.
- Conducted a workshop at the *Institute of Mathematical Sciences, University of Malaya*, Kuala Lumpur and delivered two lectures on Mixture models, December 28, 2010 (Invited).
- Failure Rate of the mixtures of two skew normal variables; *JSM*, Vancouver, Canada, July 31-August 5, 2010.
- Distribution of linear function of correlated ordered variables; *Department of Computer Science & Applied Statistics*, University of New Brunswick, Saint John, Canada, August 20, 2009 (Invited).
- Distribution of linear function of correlated ordered variables; *Institute of Mathematical Sciences, University of Malaya*, Kuala Lumpur, March 2009 (Invited).
- Distribution of linear function of correlated ordered variables; *International Indian Statistical Association Conference*, University of Connecticut, Storrs, Connecticut, May 22-25, 2008 (Invited; Chaired a session).
- A class of Hurwitz-Lerch Zeta distributions and their applications in reliability; *56th Session of International Statistical Institute*, Lisbon, Portugal, August 22-29, 2007.
- Zero-inflated count data model; *Department of Mathematics & Statistics, Indian Institute of Technology*, Kanpur, India, October 14, 2006 (Invited).
- A study of Hurwitz-Lerch Zeta distribution and its applications; *Institute of*

Mathematical sciences, University of Malaya, Kuala Lumpur, Malaysia, September 22, 2006 (Invited).

- Monotonicity of the (reversed) hazard rate of the (maximum) minimum in bivariate distributions; *Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia, September 20, 2006 (Invited).*
- Zero inflated and partially closed under addition models; *Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia, September 13, 2006 (Invited).*
- Inflated models; the *International Conference on the "Future of Statistical Theory, Practice, and Education"*, Hyderabad, India, December 27, 2004-January 1, 2005 *(Invited).*
- Zero inflated count data models; *Conference in Honor of Dr. Ram C. Tripathi, University of Texas, San Antonio, Texas, October 9, 2004 (Invited).*
- Modeling count data by random effect Poisson model, *The 54th Session of the International Statistical Institute, Berlin, Germany, August 12-20, 2003.*
- Score test for zero-adjusted generalized Poisson regression model, *Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia, March 2003 (Invited).*
- Modeling count data by random effects model, *Institute of Mathematical Sciences, University of Malaya, Kuala Lumpur, Malaysia, March 2003 ((Invited).*
- Score test for zero-adjusted generalized Poisson model; *Department of Mathematics and Statistics, University of Maine, Orono, Maine, September 27, 2001 (Invited).*
- Analysis of zero-adjusted discrete models, *The 53rd Session of the International Statistical Institute, Seoul, Korea, August 22 - 29, 2001.*
- Analysis of zero-adjusted discrete models; *STATISTICS 2001, Concordia University, Montreal, Canada, July 5 - 10, 2001 (Invited).*
- Analysis of zero-adjusted count data; *University of Malaya, Kuala Lumpur, Malaysia, February 12, 2001 (Invited).*
- Analysis of zero-adjusted count data; *Department of Applied Probability and Statistic National University of Singapore (NUS), Singapore, February 14, 2001 (Invited).*

- Failure rate of the minimum and maximum of a multivariate normal distribution; *Joint Statistical Meetings of the IISA -INDIA-JSM*, New Delhi, India, December 30, 2000-January 3, 2001 (*Invited*).
- Testing for extra zeros in analyzing discrete data; *Statistics: Reflections of the Past and Visions of the Future*, San Antonio, Texas, March 16-19, 2000 (*Invited*).
- Failure rate of the minimum and maximum of a multivariate normal distribution; *52nd session of the International Statistics Institute*, Helsinki, Finland, August 10-18, 1999.
- Testing for extra zeros in analyzing discrete data; *ENAR Statistical Meeting*, Atlanta, Georgia, March 27-31, 1999
- An additive random environmental model; *9th International Conference on Quantitative Methods for the Environmental Sciences*, Gold Coast, Queensland, Australia, July 3- July 6, 1998.
- Failure rate of the minimum and maximum of a multivariate normal distribution; *Joint Statistical Meeting of the American Statistical Association, the Biometric Society, and IMS*, Pittsburgh, Pennsylvania, March 29- April 1, 1998.
- A general approach of studying random environmental models; *51st Session of the International Statistical Institute*, Istanbul, Turkey, August 18- 26, 1997.
- A general approach of studying random environmental models; *International Conference on Quality Improvement through Statistical Methods*, Cochin, India, December 29- 31, 1996 (*Invited*).
- Estimation of Dioxin half-life in the Air Force Health Study; *Conference On Environmentrics*, Sao Paulo, Brazil, July 22- 26, 1996 (*Invited*).
- Modeling failure time data by Lehman Alternatives; *Institute of Mathematical Statistics Meeting*, Richmond, Virginia, March 17- 20, 1996.
- Ageing characteristics of the Weibull mixtures; *50th session of the International Statistical Institute*, Beijing, China, August 21- 29, 1995.
- Ageing characteristics of the Weibull mixtures; *Joint Meetings of the International Biometric Society, Institute of Mathematical Statistics, American Statistical Association*, Birmingham, Alabama, March 26- 29, 1995.
- Statistical Inference for the Inflated generalized Poisson distribution; *Joint Statistical Meetings*, Toronto, Canada, August 13- 18, 1994.

- Life testing under a random environmental model; *the International Environmetrics Conference*, Burlington, Ontario, Canada, August 11- 15, 1994. (Invited)
- Life testing under a random environmental model, *Institute of Mathematical Statistics Meeting*, Cleveland, Ohio, April 10- 13, 1994.
- An additive random environmental model; *49th Session of the International Statistical Institute*, Florence, Italy, August 25 - September 2, 1993.
- Inflated modified power series distributions with applications; *Joint Statistical Meetings*, San Francisco, California, August 6- 11, 1993.
- On environmental stress models in reliability; *University of Texas*, San Antonio, Texas, March 1992 (Invited).
- An investigation of Dioxin half-life estimation in humans; *Joint Statistical Meetings*, Atlanta, Georgia, August 1991.
- Random environmental stress model; *ORSA/TIMS Applied Probability Meeting*, Monterey, California, January 9-11, 1991.
- Dioxin half-life estimation in veterans of Project Ranch Hand; *International Conference on Recent Developments in Probability and Statistics*, New Delhi, India, December 22- 24, 1990.
- On estimating the distribution of wave heights using random sample size; *Meeting of the Institute of Mathematical Statistics*, Baltimore, Maryland, March 31- April 4, 1990.
- On the estimation of wave heights using random sample size; *47th Session of the ISI*, Paris, France, August 29 - September 6, 1989.
- Effect of length-biased sampling on modeling error; *International Conference On Recent Developments in Statistical Data Analysis and Inference*, Neuchatel, Switzerland, August 21-24, 1989
- On the consequences of inappropriate assumptions in systems Reliability; *the Third New England Statistics Symposium*, the University of Connecticut, Storrs, Connecticut, April 1989.
- Relative errors in reliability measures; *76th Session of the Indian Science Congress*, Madurai, India, January 1989.
- Generalized Poisson distribution as distribution of family size; *Joint Meetings Of The American Statistical Association, the Biometric Society, ENAR and WNAR*, New Orleans, LA, August 1988.

- Relative error in systems reliability; *46th Session of the International Statistical Institute*, Tokyo, Japan, September 1987.
- Environmental effect on reliability measures; *Joint Meetings of the Biometric Society, the American Statistical Association and the Institute of Mathematical Statistics*, San Francisco, CA, August 1987.
- Sample size determination in estimating a covariance matrix; *the First New England Symposium in Statistics*, Storrs, Connecticut, April 1987.
- Relative error in reliability measures; *Joint Meetings of the Biometric Society, The American Statistical Association and the Institute of Mathematical Statistics*, Dallas, Texas, March 21-26, 1987.
- Sample size determination for detecting differences between two groups; *IMS Meeting*, Seattle, Washington, July 27 - August 1, 1986.
- Sample size determination in estimating a covariance matrix; *Joint Meetings of The Biometric Society, the American Statistical Association and the Institute of Mathematical Statistics*, Atlanta, Georgia, March 16-19, 1986.
- Incomplete moments of modified power series distributions with applications; *Central Regional Meeting of the Institute of Mathematical Statistics*, Austin, Texas, March 1985.
- Misclassification probabilities for quadratic discrimination; presented at a *Meeting of the Institute of Mathematical Statistics*, Orlando, Florida, March 1984.
- A characterization of GPSD signal with additive noise; presented at the *Annual Meeting of the Institute of Mathematical Statistics*, Toronto, Canada, August 1983.
- On the moments of residual life in reliability and some characterization problems; *The Annual Meeting of the Institute of Mathematical Statistics*, Cincinnati, Ohio, August 1982.
- On the moments and factorial moments of a MPSD; *International Summer School on Statistical Distribution in Scientific Work*, Trieste, Italy, July 1980 (chaired a session).
- Some characterizations of distributions by truncated moments; *Institute of Mathematical Statistics Meeting*, Charleston, South Carolina, March 1980.
- Modules with cyclic support and relation to completely indecomposable modules; *Mathematics Colloquium at UM*, Fall 1978 (Invited).

CONFERENCE PARTICIPATION IN THE UNIVERSITY OF MAINE SYSTEM

- Seminar series arranged by the Equal Opportunity and Women in the Curriculum Offices, UM, May 6, 1986.
- Symposium on Moving Toward a Balanced Curriculum, UM, May 19-20, 1981.
- Women in Science Conference, UM, Spring 1980.
- Conference of University Mathematics Faculty, University of Maine, Presque Isle, June 2-3, 1978.
- Women in Science Conference, UM, April 28-29, 1978.
- Career Development Conference for Academic Women, UM, April 14-15, 1978
- Conference of University Mathematics Faculty, University of Maine, Farmington, June 2-3, 1977.

OTHER SCHOLARLY ACTIVITIES

- Participated in seminars on:
 - (I) Mathematical Modeling (Spring 1979)
 - (ii) Reliability Theory (Spring 1980)
 - (iii) Survival Analysis (Fall 1980- Spring 1981)
 - (iv) Reliability Seminar in collaboration with faculty from Civil engineering (spring 1986)
- Serving/served on Ph.D. and Master's Committees of students in civil Engineering and Mathematics and Statistics. I have also served as an external examiner of several Master's and Ph.D. theses of students from the University of Malaya, Kuala Lumpur, Malaysia.
- Have served on Scientific Program Committees/ Organizing Committees of Several National and International Conferences.
- Have Organized/ Chaired sessions on diverse topics in regional, National and International Conferences.
- Have given invited talks at various universities and presented invited papers at National and International Conferences.

REVIEWED PAPERS FOR THE FOLLOWING JOURNALS:

I have written for the Math. Reviews and have refereed papers, among others, for the following journals: Pakistan Journal of Statistics, Computational Statistics and Data Analysis, The American Statistician, Statistics in Medicine, IEEE, Technometrics,

Communications in Statistics, The Institute of Statistical Mathematics, The Journal of Multivariate Analysis, Statistical Methods, Biometrics, Applied Mathematics Letters, Mathematical and Computer Modeling, Journal of Statistics and Applications, Statistical Papers etc.

SUBJECTS TAUGHT AT UM

- Mathematical Statistics I and II (MAT 531, 532; Graduate Courses)
- Introduction to Statistics I and II (MAT 434, MAT 435; Upper Level Statistics Courses)
- Topics in Actuarial Science (MAT 400, Preparatory Course for the first Exam in Actuarial Science)
- Statistics for Engineers (MAT 332, Calculus based course)
- Principles of Statistical Inference (MAT 232)
- Introduction to Statistics for Business and Economics (MAT 215)
- Theory of Numbers (MAT 465)
- Introduction to Algebra I and II (MAT 463, 464)
- Linear Algebra (MAT 262)
- Differential Equations (MAT 259)
- Calculus I, II, and III (MAT 126, 127, and 228)
- Algebra & Trigonometry (MAT 122)
- Applied Mathematics for Business and Economics (MAT 115).

STATISTICAL CONSULTING

- Member of the statistical consulting service of the University.
- Have advised faculty/graduate students from, including, the departments of Biochemistry, Food and Nutrition, Civil and Environmental Engineering, Forestry, Economics, Physics, Spatial Information Science & Engineering, School of Marine Sciences, and Biology & Ecology.
- Helped Mr. Dan McConville of Prentiss and Carlisle on statistical problems (March 2006).
- Helped Mr. David Chittim, City Engineer for Rockland, Maine, to understand some Environmental regulations pertaining to groundwater evaluations. Help was needed in understanding some statistical issues (2002-2003).
- Consulted on the statistical study of the school based rehabilitative program for the Department of Human services, State of Maine, January 1998.

ADVISING

I have been advising Math Majors as well as freshmen/sophomores of the College of Arts & Sciences consistently.

SERVICE TO THE DEPARTMENT/COLLEGE/ AND THE UNIVERSITY

- Member of the Reappointment Committee for the Dean of the College of Liberal Arts & Sciences (2011-2012).
- Member of the Academic Council of the College of Liberal Arts & Sciences, 2011- 2013 (spring 2012 on sabbatical).
- Member of the Peer Committee of the department, 1979-1981(Chair: 1980-1981), 1998 – 2000, 2001 - Present (Chair: 2001-2003).
- Chair of the Technology Committee (2000-2003).
- Colloquium Chair (2002-2004).
- Co-chair of the department (April 1, 2000- August 31, 2000).
- Member of several hiring committees, Spring 1997, 2000 (Chair of the "Computational Mathematics" search committee), 2003, 2004, 2005, 2007-2008, 2012-2013.
- Member of the Chair Selection Committee (Spring 2006).
- Member of the Library Committee of the department, 1979 - 1982, 1986 - 2009 (Chair: 1993- 1997).
- Member of the Graduate Faculty 1977-Present
- Member of the Executive Committee of the Graduate Faculty of the Department, 1986- 1990, 1996-2000.
- Member of the Policy Advisory Committee of the department, 1987, 1992 - 1995, 2010 - Present.
- Member of the Curriculum Committee of the department, 1986-1996, 2008 - Present.
- Member of the Graduate Board of the Graduate Faculty, 1989-1992.
- Member of the Student Aid Advising Committee, 1989-1992.
- Member of the Calendar Committee of the campus, 1988-1991.
- Member of the Advisory Committee to the Committee on Women and the Curriculum, UM, 1981.