

School of Mathematical and Statistical Sciences, Arizona State University January, 2013.
Tempe AZ 85287 mboggess@asu.edu

EMPLOYMENT

Arizona State University, School of Mathematical and Statistical Sciences.

Associate Professor. August 2012–present
Courses: STP429 Experimental Statistics, STP580 Statistical Consulting,
STP427 Mathematical Statistics.

Texas A&M University, Mathematics Department.

Senior Lecturer. January 2010–July 2012
Courses: MATH625 Stochastic Differential Equations, MATH628 Mathematics of Finance,
MATH419 Actuarial Science, MATH325 Interest Theory.

University of Newcastle, Australia, Faculty of Health.

Conjoint Senior Lecturer. March 2011–present

Texas A&M University, Statistics Department.

Senior Lecturer. September 2008–January 2010
Lecturer. January 2006–August 2008
Courses: STAT684 Statistical Consulting, STAT407, STAT307 Survey Sampling,
STAT408 Introduction to Linear Models.

Stata Corporation, College Station, Texas.

Assistant Director of Technical Support and Staff Statistician. June 2003–December 2005
Duties: Statistical consulting, software development.

Texas A&M University, Statistics Department.

Graduate Teaching Assistant. January 2003–May 2003
Courses: STAT303 Statistical Methods.

Hewitt Associates, The Woodlands, Texas.

Actuarial Analyst. July 2001–July 2002
Duties: Actuarial pension valuations.

Texas A&M University, Mathematics Department.

Visiting Assistant Professor. October 1999–June 2001
Courses: Engineering Calculus I & II, Theory of Probability.

University of Nebraska-Lincoln, Mathematics Department.

Visiting Assistant Professor. July 1997–August 1999
Courses: Multivariable Calculus, Differential Equations, Matrix Theory, Harvard Calculus,
Elementary Analysis, Math for Elementary School Teachers, Math for High School Teachers.

University of Newcastle, Australia, Center for the Advancement of Learning and Teaching.

Associate Lecturer. February 1996–June 1996

University of Newcastle, Australia, Continuing Studies Department.

Part-time Lecturer. February 1992–June 1997

University of Newcastle, Australia, Mathematics Department.

Part-time Lecturer. February 1992–June 1996

EDUCATION

Master of Science (Statistics), Texas A&M University. December 2004
Ph.D.(Mathematics), University of Newcastle, Australia. June 1997
Bachelor of Mathematics (Honors Class I), University of Newcastle, Australia. December 1992
Bachelor of Mathematics, University of Newcastle, Australia. December 1991
Actuarial Exams Passed: Exam 1/P, 2000, Exam 2/FM, 2001, Exam 3/MFE November 2010.

GRANTS

A data analysis and reporting framework for Coal Services dust sample data for the NSW Coal Industry, Coal Services Health and Safety Trust, Australia. July, 2012 - July, 2013, Co-PI. (PI is M. Guest, School of Health Sciences, University of Newcastle, Australia), \$68,134.

REU Site: Undergraduate Research in Mathematical Sciences and its Applications. June 1, 2012 - May 31, 2015, Co-PI. (PI is J. Walton, Department of Mathematics, Texas A&M), Award Abstract \$360,000.

UBM-Institutional: Integrated Undergraduate Research Experiences in Biological and Mathematical Sciences. National Science Foundation (NSF), September 2010-2015, Co-PI. (PI is J. Walton, Department of Mathematics, Texas A&M; Co-PIs are M. Fujiwara, Wildlife and Fisheries, Texas A&M; K. Fu, H. Block, Texas A&M at Prairie View), DBI-1029401 \$498,895.

REU Site: Undergraduate Research in Mathematical Sciences and its Applications. June 1, 2009 - May 31, 2012, Senior Personnel. (PI is J. Walton, Co-PI is A. Boggess, Department of Mathematics, Texas A&M), Award Abstract #0850470 \$314,100.

Do Well, Be Well con Diabetes: A pilot study of a type 2 diabetes self-management education program for Hispanic/Latinos. United States Dept Agriculture/Cooperative Extension Research Education Extension Service (USDA/CSREES), September 2009-2010, Co-PI (PI is N. Purcell, Texas A&M Agrilife), \$213,648.

Comparison of transthoracic two-dimensional echocardiography, three-dimensional echocardiography, computed tomography, and gated magnetic resonance imaging in normal canine hearts. July 2011 - July 2012, Senior Personnel. (Co-PI's are S. Gordon and R. Fries, College of Veterinary Medicine Texas A&M), \$13,482.

SYNERGISTIC ACTIVITIES

Actuarial Science Program Development, Arizona State University has had a vibrant actuarial science program for some time. Together with two other faculty I am currently working on curriculum development for a proposed new undergraduate degree in actuarial science, as well as running semester-long study sessions to help prepare students taking exams.

REU Senior Personnel, Research Experience for Undergraduates in Mathematical Biology, with J. Walton, in the Department of Mathematics, Texas A&M University, every summer since 2008. Mentoring student research projects and organizing social and informative activities such as guest speakers, day trips and brown bag panels.

UBM-Institutional: Integrated Undergraduate Research Experiences in Biological and Mathematical Sciences, with J. Walton, in the Department of Mathematics, Texas A&M University, since Fall 2010. Mentoring student research projects jointly with faculty in Biology and the College of Veterinary Medicine.

Actuarial Science Program Development, teaching and course development. About 20% of undergraduate math majors pursue an actuarial career. From 2008, the actuarial program at Texas A&M grew from a

study group to a set of classes specializing in preparation for the first three actuarial exams. The Aggie Actuaries Student Club hosted several meetings per semester, bringing professionals to campus to give talks on topics of current interest to the actuarial profession. These visits increased the profile of Texas A&M graduates among actuarial employers and have helped increase the number of students securing actuarial employment before graduation.

Best Practices in Inquiry and Research-based Practices at Texas A&M University, Vignette Series, Office of Institutional Assessment. STAT407, Principles of Sample Surveys, selected to represent the College of Science and was the only Writing Intensive course in the Department of Statistics, 2008.

PHD STUDENTS

Chris Culvern, Expected graduation, May 2016.

MASTERS STUDENTS (Texas A&M)

Jack Jun Yao, Pricing arithmetic Asian Options, December 2012
 Chris Culvern, *Improving Skewness in Modern Portfolio Theory*. August 2012
 David Shepherd, *Stochastic Reserving Models and the Simulation of Individual Claims*. May 2012
 Anthony Neuman, *Bootstrapping of Claim Reserving Models*. May 2012.
 Ursula Zavala, *Analyzing Differences of Movement into and out of STEM fields by Gender and Race/Ethnicity*. August 2011
 Rashmi Arora, *Pricing Options on Acquisition Target Stocks*. August 2011
 Henan Wang, *Martingale control variate methods for pricing of European and American arithmetic average Asian options*. August 2011
 Michelle Moyer, *Further Re-examination of Joint Mortality Functions*. May 2010
 Matthew Cefalu, *Power and level of the Shapiro-Francia test statistic*. May 2010
 Bryan Fellman, *Characterization of glycoproteins in retrovirus cell membrane fusion*. December 2009
 Mir Usman Ali, *Enumeration of Phylogenetic Trees*. August 2009
 Jon Perritt, *A clustering algorithm for identifying fishing from VMS tracklines*. August 2009
 Lori Walters, *Data Mining and Black-Scholes Option Pricing*. May 2009
 Theresa Boswell, *Dunnnett's Multiple Comparison test in Stata*. December 2008
 Youjin Lee, *Polio Epidemic Modeling with Oral Vaccine Reinfection*. August 2008

STATISTICAL CONSULTING

Statistical Analysis of Cardiac Imaging Data, for Dr. Sonya Gordon, Small Animal Clinic, College of Veterinary Medicine, Texas A&M University. 2010 – 2011
Statistical Analysis of Cardiac Effects of TASER, with J. Criscione (Biomedical Engineering, Texas A&M) for U.S. Dept. of Defense (Navy). March – April 2009
Hospice Utilization Study: the effect of increasing hospice numbers on the admission rate in the US, for Research Planning Consultants, Austin, TX. 2007 – 2008
Factors Affecting Absenteeism in an Aging Workforce, with M. Guest and J. Duke (University of Newcastle, Australia) for Norsk Hydro Aluminium, Kurri Kurri, Australia. June – July 2007
Webassign Style Rules for Statistical Question Banks, for Cengage (Thomson Brooks/Cole) Publishing, Belmont CA. March – June 2007

MANUSCRIPTS SUBMITTED or in PREPARATION

- (1) *Reproducibility and comparative validity of a food frequency questionnaire for Australian adults*, C. Collins, J. Watson, M. Guest, M. Boggess, K. Duncanson, K. Pezdirc and T. Burrows, in preparation.
- (2) *Long-term Patent Ductus Arteriosus Outcome in 520 dogs (1994-2009)*, A. Saunders, S. Gordon, M. M. Boggess, M. W. Miller, in preparation.
- (3) *Age related Accident Incidence Rates in Professional Drivers of Heavy Vehicles*, M. Guest, M. Boggess and J. Duke, in preparation.
- (4) *Nurses Sharps Related Injuries in Public and Private Facilities in New South Wales, Australia*, M. Guest, A. Kable, M. Boggess, M. Friedewald, submitted to *Healthcare Infection*.
- (5) *The interpretation of noun-noun compounds in Spanish*, M. I. Moyna and M. Boggess, submitted to *Word Structure*.
- (6) *The association of increased age on occurrence of injuries, claims for compensation and taking of sick leave in an aluminum smelter industry*, M. Guest, D. Viljoen and M. Boggess, submitted to *Occupational Medicine*.
- (7) *Analysis of the Trojan Y-chromosome eradication strategy for an invasive species*. X. Wang, J. Walton, R. Parshad, K. Story and M. Boggess, submitted to *Journal of Mathematical Biology*.

PUBLICATIONS

- (1) *The C. elegans male exercises directional control during mating through cholinergic regulation of sex-shared command interneurons*, A. L. Sherlekar, A. Janssen, M. Siehr, L. Caffisch, P. K. Koo, M. M. Boggess, R. Lints, accepted, *PLOS ONE*, December 2012.
- (2) *An Application of a Diabetes Knowledge Scale to Older Adult Hispanic/Latinos*, N. Peña-Purcell and M. Boggess, accepted *Health Promotion Practice*, December 2012.
- (3) *Better Outdoor Environments Lead to Cost Benefits in Assisted Living Facilities through Increased Word-of-Mouth Referrals?*, S. Rodiek, C. Lee, G. J. Booth, May M. Boggess, A. Morris and A. Neumann, accepted in *Health Environments Research and Design Journal*, February 2012.
- (4) *Language Attitudes in Galicia: Using the Matched-Guise Test among High School Students*, V. Loureiro-Rodriguez, M. Boggess and A. Goldsmith, *Journal of Multilingual and Multicultural Development*, (2012) 1–18.
- (5) *Extension Professionals' Strengths and Needs Related to Nutrition and Health Programs*, N. Peña-Purcell, E. Bowen, V. Zoumenou, E. Schuster, M. Boggess, M. Manore, and S. Gerrior, *Journal of Extension*, Vol 50 (June 2012) No. 3.
- (6) *Effect of oral administration of pimobendan in cats with heart failure*, S. Gordon, A. Saunders, R. Roland, R. Winter, L. Drourr, S. Achen, C. Hariu, R. Fries, M. Boggess and M. Miller, *Journal of the American Veterinary Medical Association* (2012) **241** no 1, 89-94.
- (7) *Retrospective review of Carvedilol administration in 38 Dogs with preclinical Chronic Valvular Heart Disease*, S. Gordon, A. Saunders, C. Hariu, M. Boggess and M. Miller, *Journal of Veterinary Cardiology* (2012) **14** no 1, 243–252.

- (8) *Relative risk of elevated hearing threshold compared to ISO1999 normative populations for Royal Australian Air Force male personnel*, M. Guest, M. Boggess and J. Attia, *Hearing Research* (2012) **285** no. 1, 65–76.
- (9) *Urinary biomarkers of renal disease in dogs with X-linked hereditary nephropathy*, M. Nabity, G. Lees, R. Cianciolo, M. Boggess, J. Steiner, and J. Suchodolski, *Journal of Internal Veterinary Medicine* (2012) **26** no. 2, 282-293.
- (10) *Further Re-examination of Joint Mortality Functions*, M. Moyer and M. Boggess, *Australian Actuarial Journal* (2012) **18** No. 1, 69–84.
- (11) *Peripheral Neuropathy in Military Aircraft Maintenance Workers in Australia*, M. Guest, J. Attia, C. D'Este, M. Boggess, A. Brown, R. Gibson, M. Tavener, J. Ross, I. Gardner and W. Harrex, *Journal of Occupational and Environmental Medicine* (2011) **53** no. 4, 381–387.
- (12) *An Empowerment-based Diabetes Self-Management Education Program for Hispanic/Latinos: A Quasi-experimental Pilot Study*, N. Peña-Purcell, M. Boggess and N. Jiminez, *The Diabetes Educator* (2011) **37** no. 6, 770–779.
- (13) *Coexistence of competing stage-structured populations*, M. Fujiwara, G. Pfeiffer, M. Boggess, S. Day, and J. Walton, *Scientific Reports 1* (2011) Article number: 107.
- (14) *The effect of ocular blinkers on the horses' reactions to four different visual and audible stimuli: results of a crossover trial*, J. Dziezyc, L. Taylor, M. Boggess and H. Scott, *Veterinary Ophthalmology* (2011) **14** no. 5, 327–332.
- (15) *An observed relationship between vestibular function and auditory thresholds in aircraft maintenance workers*, M. Guest, M. Boggess, C. D'Este, J. Attia, and A. Brown, *Journal of Occupational and Environmental Medicine* (2011) **53** no. 2, 146–152.
- (16) *Impairment of color vision in aircraft maintenance workers*, M. Guest, C. D'Este, J. Attia, M. Boggess, A. Brown, M. Tavener, R. Gibson, I. Gardner, W. Harrex and J. Ross, *International Archives of Occupational and Environmental Medicine*, (2011) **84** no. 7, 723–733.
- (17) *Analysis of ordinal outcomes from carcass data in beef cattle research*, J. Osterstock, J. MacDonald, M. Boggess and M. Brown, *Journal of Animal Science*, (2010) **88**, 3384-3389
- (18) *Hearing impairment in F-111 maintenance workers: the study of health outcomes in aircraft maintenance personnel (SHOAMP) general health and medical study*, M. Guest, M. Boggess, J. Attia, C. D'Este, A. Brown, R. Gibson, M. Tavener, I. Gardner, W. Harrex, K. Horsley and J. Ross, *American Journal of Industrial Medicine*, (2010) **53**, 1159-1169
- (19) *Improved Injury Management at an Australian Aluminium Smelter*, M. Guest, D. Viljoen, M. Boggess and J. Duke, *WORK: A Journal of Prevention, Assessment and Rehabilitation*, **37** (2010) no. 2, 179–185.
- (20) *Age related Safety in professional heavy vehicle drivers: a literature review*. J. Duke, M. Guest and M. Boggess, *Accident Analysis and Prevention*, **42**(2010), 364–371.
- (21) *Canine heartworm caval syndrome; outcome in 42 dogs (1999-2007)*, C. Bove, S. Gordon, M. Boggess, A. Saunders, M. Miller, R. Roland, S. Achen and L. Drourr, *Journal of the American Veterinary Medical Association*, **236** (2010), no. 2, 187–192.

- (22) *Architectural Office Post-Occupancy Evaluation*, M. Shipley, K. Zimmermann M. Boggess and Y. Lee, *Journal of Interior Design*, **34** (2009), no. 3, 17–29.
- (23) *Positive effects of an active approach to injury management the experience at an Australian Aluminium Smelter*. M. Guest, D. Viljoen, M. Boggess and J. Duke, *Occupational and Environmental Medicine* **65** (2008), no. 9:Special Data Supplement.
- (24) *Day-to-day variation of the urine protein:creatinine ratio in female dogs with stable glomerular proteinuria caused by X-linked hereditary nephropathy*, M. Nabity, M. Boggess, C. Kashtan, and G. Lees, *Journal of Veterinary Internal Medicine*, **21** (2007), no. 3, 425–430.
- (25) *Serial plasma lactate concentrations in 68 puppies aged 4-80 days*, M. McMichael, G. Lees, J. Hennessey, M. Sanders and M. Boggess, *Journal of Veterinary Emergency and Critical Care*, **15** (2005), no. 1, 17–21.
- (26) *Investigating colour vision impairment in aircraft maintenance technicians*, M. Boggess, M. Guest, J. Attia, C. D'Este, A. Brown, *Occupational and Environmental Medicine* **62** (2005), no. 10:Special Data Supplement.
- (27) *Cumulative Incidence estimation in the presence of competing risks*, V. Coviello and M. Boggess, *Stata Journal* **4** (2004), no. 2, 103–112.
- (28) *Approximation properties for crossed products by actions and coactions*, May M. Nilsen and Roger R. Smith, *International Journal of Mathematics* **12** (2001), no. 5, 595–608.
- (29) *Continuous maps on ideal spaces of C^* -algebras*, May M. Nilsen, *Rocky Mountain Journal of Mathematics* **30** (2000), no. 4, 1465–1479.
- (30) *Full crossed products by coactions, $C_0(X)$ -algebras and C^* -bundles*, May M. Nilsen, *Bulletin of the London Mathematical Society* **31** (1999), no. 5, 556–568.
- (31) *Duality for full crossed products of C^* -algebras by non-amenable groups*, May M. Nilsen, *Proceedings of the American Mathematical Society* **126** (1998), no. 10, 2969–2978.
- (32) *The Maths Clinic*, May M. Nilsen, *The Teaching Review*, The University of Newcastle **1** (1996), 37–38.
- (33) *C^* -bundles and $C_0(X)$ -algebras*, May M. Nilsen, *Indiana University Mathematics Journal* **45** (1996), 463–477.
- (34) *Ideals in C^* -algebras*, May M. Nilsen, *Australian Mathematics Society Gazette* **23** (1996), No. 1, 18–20.
- (35) *The Stone-Čech compactification of $\text{Prim}(A)$* , May M. Nilsen, *Bulletin of the Australian Mathematics Society* **52** (1995), 377–383.
- (36) *Crossed products by semigroups of endomorphisms and the Toeplitz algebras of ordered groups*, S. Adji, M. Laca, M. Nilsen, and I. Raeburn, *Proceedings of the American Mathematical Society* **122** (1994), 1133–1141.

PRESENTATIONS

- Relative risk of hearing loss: Comparison of hearing thresholds in Royal Australian Air Force personnel to the ISO 7029:2000 normative data*, International Symposium on Epidemiology in Occupational Health, Oxford, UK. September 2011
- Si, Yo Puedo Controlar Mi Diabetes!*, Texas Society for Public Health Education, College Station, TX. October 2010
- Hearing Loss in Aircraft Maintenance Technicians*, International Symposium on Epidemiology in Occupational Health, San Jose, Costa Rica. June 2008
- A power-of-the-mean model for variation of urine protein-creatinine ratio in female dogs*, Conference of Texas Statisticians, Austin, TX. April 2006
- The Application of Statistical Tests to Clinical Diagnostics*, International Symposium on Epidemiology in Occupational Health, Bergen, Norway. September 2005
- Operator Algebras Special Session, AMS Sectional Meeting, Lawrence, Kansas. March 2001
- Analysis Special Session, AMS Sectional Meeting, Birmingham, Alabama. November 2000
- Operator Algebras Special Session, AMS-MAA National Meeting, Washington. January 2000
- Banach Space Special Session, AMS Sectional Meeting, Austin, Texas. October 1999
- Great Plains Operator Theory Symposium, Iowa State University. May 1999
- Operator Algebras Special Session, AMS-MAA National Meeting, San Antonio. January 1999
- European Union C^* -algebra Conference, University of Copenhagen, Denmark. August 1998
- Great Plains Operator Theory Symposium, Kansas State University. May 1998
- Analysis Special Session, AMS-MAA National Meeting, Baltimore. January 1998
- Association of Women in Mathematics Workshop, Baltimore. January 1998
- Great Plains Operator Theory Symposium, Arizona State University. May 1996
- Australian Mathematics Society National Conference, University of Tasmania, Australia. July 1995
- Australian Mathematics Society National Conference, University of New England, Australia. July 1994

RECENT STUDENT PRESENTATIONS

- Matrix Analysis of Lone Star Tick Populations*, Second UBM South Regional Conference, University of Houston, TX (presented by Adam Kley**). October 2011
- Fast-start Swimming Performance in Hybrid Male Swordtail Fish*, Second UBM South Regional Conference, University of Houston, TX (presented by Danielle Macedo**). October 2011
- Ray sensory neuron control of the *C. elegans* nematode worm Mating Behavior*, Second UBM South Regional Conference, University of Houston, TX (presented by Laura Caflish**). October 2011
- Carotid Artery Model using Criscione Kinematic Framework*, Rice Undergraduate Symposium, Houston, TX (presented by Carlos Graham**). October 2011
- Teacher Perceptions of Third and Fourth Grade African American Gifted and Talented Students*, Southwest Educational Research Association Meeting, San Antonio (presented by Ruth Brazile*). February 2011
- A Categorization of Brazilian Free-Tailed Bat (*Tadarida brasiliensis*) Chirps*, National Joint Mathematics Meetings, New Orleans (presented by G. Backus**). January 2011

A Mathematical Model of the Effects of Antioxidants on Atherosclerotic Lesion Growth, National Joint Mathematics Meetings, New Orleans (presented by H. Belli**). January 2011

Modeling the Effects of Cannibalistic Behavior in Zebra Mussel Populations, National Joint Mathematics Meetings, New Orleans (presented by P. Davis**). January 2011

* Graduate Student

** Undergraduate Student

RECENT CO-AUTHOR PRESENTATIONS

The interpretation of Spanish noun-noun compounds in a contact situation, The 6th International Workshop on Spanish Sociolinguistics, (presented by Maria Irene Moyna) April 2012

Age related safety in a population of Australian Smelter workers, Australian and New Zealand Society of Occupational Medicine Annual Meeting, (presented by D. Voljoen). August 2010

The Use of Quantile Regression Model in an Occupational Health and Safety Study, Stata Users' Group Meeting, Sydney, Australia (presented by M. Guest). November 2009

Serial Evaluation of NT-proBNP in Dogs with CHF Predicts Clinical Score and the Presence or Absence of Radiographic Pulmonary Edema, American College of Veterinary Internal Medicine Forum (presented by S. Achen). July 2009

RECENT POSTERS

Texas A&M UBM: Student Research Experience is the Key., AMS National Meetings, January 2012.

The use of accident incidence rate ratios to evaluate age related safety in Australian heavy vehicle drivers in the state of New South Wales (1999-2006), International Symposium on Epidemiology in Occupational Health, Oxford, UK (presented by M. Guest). September 2011

Modeling the Spread of Himalayan Blackberry in Oregon, MathFest, Lexington, Kentucky (presented by H. Johnston**). August 2011

Chemical Monitoring and Mathematical Analysis of Neural Network Connectivity, Student Research Week, Texas A&M University (presented by M. Bunkers**). March 2011.

Texas A&M UBM: Student research experience is the key, National Joint Mathematics Meetings, New Orleans. January 2011

Do Well, Be Well con Diabetes: A Pilot Study Targeting Hispanic/Latinos Older Adults in South Texas, American Association of Diabetes Educators Annual Meeting, (presented by N. Peña-Purcell). August 2011

* Graduate Student

** Undergraduate Student