

## CURRICULUM VITAE

### Timothy E. O'Brien

*Loyola University Chicago  
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Dept. of Mathematics and Statistics  
1032 W. Sheridan Road  
Chicago, IL 60660-1537 USA

Joint appointment: Institute for Environmental Sustainability  
Contact: **p:** 773-508-2129, **f:** 773-508-2123, **e:** tobrie1@luc.edu  
**w:** <http://webpages.math.luc.edu/~tobrien/home.html>

#### Recent Work Experience

- **Professor of Applied and Environmental Statistics; Graduate Program Director (Statistics)**, Loyola University Chicago, since 2010. (Asst. Professor: 1998 – 2004; Assoc. Professor: 2004 – 2010).  
Graduate Program Director for Applied Statistics program and tenured member of graduate faculty in the Department of Mathematics and Statistics (College of Arts and Sciences) and Institute for Environmental Sustainability. Duties include teaching statistics courses to undergraduate and graduate students, conducting independent and collaborative research, serving on University and Department/Institute committees, directing research of statistics undergraduate and graduate students, consulting with University and external researchers, and serving as Math Department advisor for actuarial, biostatistics and statistics students.
- **Senior Science Advisor**, U.S. Agency for International Development and State Dept., 2011 – 2012.  
Awarded Jefferson Science Fellowship through The National Academies: served as Senior Science Advisor to the Department of State and U.S. Agency for International Development for the 2011-2012 academic year. Provide expertise in federal science policy, assessment, monitoring and evaluation in global and public health, climate change and green growth, and cross-cultural issues especially related to sub-Saharan Africa and South-East Asia. Within the year, worked as Embassy Science Fellow on renewable and sustainable energy issues in Rabat Morocco (March/April 2012).
- **Visiting Professorships:**
  - **South Africa:** University of Natal at Pietermaritzburg (Spring 1995); teaching and joint research.
  - **Belgium:** Limburgs Universitair Centrum (2003) and Katholieke Universiteit Leuven (2001 – 2002); PhD/MSc teaching and collaborative research; directed design research group.
  - **Thailand:** Chiang Mai University (2014, 2016), Mahidol University (2011), Thammasat University (2007, 2008, 2010), National Institute of Development Administration (2009): PhD teaching and research supervision; joint research with faculty and students; advising at International Colleges.
- **Fulbright Traditional Scholar**, awarded a Core Fulbright Scholar grant to lecture and conduct research in applied statistics; established and managed a campus-wide statistical consulting center -
  - **Thailand:** Chiang Mai University, Department of Statistics, 2006 – 2007.
- **Fulbright Senior Specialist**, global and public health, biostatistical consulting & training, short courses:
  - **Thailand:** Chiang Mai University, Faculty of Medicine, 2010.
  - **Nepal:** Kathmandu University, School of Science and Institute of Medicine, 2015.
  - **Indonesia:** Gadjah Mada University, Islamic University of Indonesia, Mulawarman University, Tanjungpura University, 2015.

**Recent Work Experience (continued)**

- **Biostatistical/Environmental/Statistical Consultant**, since 2002.  
Employed on an *ad hoc* contractual basis at Amylin Pharmaceuticals (San Diego, USA), BASF (St. Louis, USA), Janssen Pharmaceuticals (Belgium), Loyola Medical Center & Hines VA Hospital (Chicago, USA) as external biostatistical consultant: pre- and non-clinical research projects, especially related to bioassay and drug synergy, virology, oncology, and HIV research.

**Education**

- **Ph.D., Statistics, North Carolina State University**, June, 1993. Dissertation Topic: New Design Strategies for Parameter Estimation and Model Discrimination in Nonlinear Regression Models. Emphasis: environmental statistics, design of experiments, generalized linear and nonlinear modelling, computer-intensive methods, bioassay and drug synergy. Research funded by USDA and US/EPA grants, NCSU Air Resources Consortium. Director: Professor John O. Rawlings.
- **M.A., Statistics, University of Rochester**, 1987.
- **M.A., Mathematics, Syracuse University**, 1985.
- **B.A., Mathematics and Economics, Pace University**, 1978. Graduated *summa cum laude*.

**Post-Doctoral Positions**

- **Post-Doctoral Fellow, Universität Augsburg**, 1995. Awarded U.S. National Science Foundation and German DAAD grants to conduct joint research with German researchers on optimal design, discrimination and estimation in nonlinear and generalized linear models. Organized, hosted, and procured financial support for an international conference on complex statistical systems related to compartmental nonlinear modelling with applications in chemical engineering, pharmacokinetics, and environmetrics/ecology.
- **Post-Doctoral Fellow, Institut Nationale de la Recherche Agronomique, Laboratoire de Biometrie**, 1994. Collaborated with statisticians at the INRA in France on research problems involving the application of nonlinear models in practical settings, consulted with agronomists, and presented results in research seminars.

**Previous Work Experience**

- **Internal Statistical Consultant - Biostatistician, Novartis Pharma AG**, Basel, Switzerland, 1996–1998. Provided statistical guidance to biological/chemical researchers working in drug discovery and preclinical research and to clinical pharmacologists. Consulting in design and quality control.
- **Visiting Assistant Professor, University of Georgia**, Department of Statistics, 1996 (two terms).
- **Assistant Professor, Washington State University**, Program in Statistics, 1993-1995.
- **Instructor, C.E.M.G. de Savalou**, Benin, Africa, 1980-82. Taught various college-level mathematics courses while serving as a Peace Corps volunteer in French West Africa.

**Current Editorships**

- *Case Studies in Business, Industry and Government Statistics* (Associate Editor, since 2009)
- *Involve Journal of Mathematics* (Associate Editor, since 2009)
- *Nepalese Journal of Statistics* (Editor, since 2017)
- *Statistics, Optimization, and Information Computing* (Field Chief Editor, since 2013)
- *Thai Statistician Journal* (Associate Editor, since 2007)

### Funded Grants and Stipends

- U.S. Department of Health and Human Services, Health Profession Opportunity Grant, "Evaluation of Goal-Directed Psychological Capital and Employer Coaching in Health Profession Opportunity Development" 9/2016-9/2020 (with Loyola Professor P. Hong), supplemental to original US/HHS/HPOG 8/2011-9/2015 grant award.
- Burroughs Wellcome Fund, 2016 Collaborative Research Travel Grant, "Applied Biomedical Research in Bioinformatics and Biostatistics in Africa," 10/2016-12/2017.
- J. William Fulbright Foreign Scholarship Board, Fulbright Senior Specialist Grant Awards in Global and Public Health at Gadjah Mada University, Islamic University of Indonesia, Mulawarman University, Tanjungpura University (Indonesia), 7/2015-8/2015.
- J. William Fulbright Foreign Scholarship Board, Fulbright Senior Specialist Grant Awards in Global and Public Health at Kathmandu University (Nepal), 6/2015.
- National Academies, Jefferson Science Fellowship Program grant to serve as US Government Senior Science Advisor, 8/2011-8/2012.
- J. William Fulbright Foreign Scholarship Board, Fulbright Senior Specialist Grant Award in Global and Public Health at Chiang Mai University Faculty of Medicine, 5/2010-6/2010.
- Illinois Criminal Justice Information Authority, "A Detailed Examination of the Growth of Illinois' Prison Population and Assessment of Risk and Recidivism among Prison Releasees", 12/2009-9/2010 (with Loyola Professors Gipsy Escobar, Dave Olson, and Loretta Stalens).
- Loyola University Chicago Multidisciplinary Grant, "Employment Hope as a Pathway to Economic Self-Sufficiency," 2/2009-6/2010 (with Loyola Professors Philip Hong and Theresa Pigott).
- Loyola University Chicago, Global Initiative Incentive Award, "The Loyola University Chicago and Chiang Mai University Research and Education Initiative," 7/2007-6/2008 (with Dr. Susan Baker, LUMC/Microbiology and Dr. Amornrat Kanjanahaluethai, CMU/Microbiology). Renewed 7/2008.
- U.S. Department of State and J. William Fulbright Foreign Scholarship Board, Fulbright Traditional Scholar Award, "Applying Statistical Methods through Teaching and Consulting; Research in Applied Experimental Design," 10/2006-2/2007.
- U.S. National Science Foundation, "Research Experience for Undergraduates: Integrated Cross-disciplinary Summer Program in Bioinformatics," 6/2006-5/2009 (with Loyola Professors Howard Laten and George Thiruvathukal).
- U.S. National Academies of Science, Visiting Scholar, RERF in Hiroshima, Japan, March 2006.
- Limburgs Universitair Centrum, Belgium, to teach course on statistical theory and methods associated with drug and similar compounds synergy, 5/2003-7/2003.
- Katholieke Universiteit Leuven, Belgium, Visiting Professorship salary, 9/2001-6/2002.
- Loyola University Chicago, "Design Strategies for HIV/AIDS & Malaria," 5/2000-7/2000.
- Institut Nationale de Research Agronomique (INRA), Versailles, France, Visiting Researcher stipend, 7/1998.
- National Science Foundation Post-Doctoral Fellow Program, "Optimal Design for Nonlinear Regression Models," 9/1994-12/1995.
- Deutscher Akademischer Austauschdienst (DAAD), Study Visit Grant, 7/1995-9/1995.
- The Dow Chemical Company, "Estimate for Multivariate Nonlinear Models," 6/1994-6/1995.
- National Research Institute, "Identifying and Quantifying Competitive Characteristics of Winter Wheat against Two Winter Annual Grasses in the Pacific Northwest," 6/1995-5/1998.
- U.S. Department of Agriculture, "Optimal Design for Nonlinear Models Used in Forestry and Agricultural Research," 1/1995-12/1995.

**Selected Publications (of 61) (\* denotes student co-author)**

1. O'Brien, T.E. and Lim, C., **2018**, New Challenges and Strategies in Robust Optimal Design for Multicategory Logit Modelling, in Chen, D., Jin, Z., Li, G., Li, Y., Liu, A. and Zhao, Y., eds., *New Advances in Statistics and Data Science*, Springer-Verlag: Cham, Switzerland, 61-74.
2. Nummi, T., \*Salonen, J., and O'Brien, T.E., **2018**, Statistical Analysis of Labor Market Integration: A Mixture Regression Approach, in Chen, D., Jin, Z., Li, G., Li, Y., Liu, A. and Zhao, Y., eds., *New Advances in Statistics and Data Science*, Springer-Verlag: Cham, Switzerland, 313-321.
3. Buntragulpoontawee, M., O'Brien, T.E., and Kovindha, A., **2017**, Influence of Rehabilitation Medicine Residency Training in Performing Chemodeneration in Children with Cerebral Palsy in Thailand, *Journal of the Medical Association of Thailand*, 100, 347-352.
4. \*Shepherd, D.J., Tsai, S-Y., O'Brien, T.E., Farrer, R.G., and Kartje, G.L., **2016**, Anti-Nogo-A Immunotherapy Does Not Alter Hippocampal Neurogenesis After Stroke in Adult Rats, *Frontiers in Neuroscience*, 10:467, doi: 10.3389/fnins.2016.00467.
5. Ping, J., O'Brien, T.E., Streets, D.G. and \*Patel, M., **2016**, Relationship of Ground-level Ozone with Synoptic Weather Conditions in Chicago, *Urban Climate*, 17, 161-175.
6. O'Brien, T.E., **2016**, Efficient Experimental Design Strategies in Toxicology and Bioassay, *Statistics, Optimization, and Information Computing*, 4(2), 99-106.
7. \*Tusto, P., O'Brien, T.E., and Tiensuwan, M., **2016**, Optimal Design Strategies for Relative Potency Using the Log-Logistic Model, *Model Assisted Statistics and Applications*, 11(2), 109-123.
8. \*Lynch, N., Hoang, T., and O'Brien, T.E., **2016**, Acute Toxicity of Binary-Metal Mixtures of Copper, Zinc, and Nickel to Pimephales Promelas: Evidence of More-Than-Additive Effect, *Environmental Toxicology and Chemistry*, 35(2), 446-457.
9. \*Larsen, E. and O'Brien, T.E., **2015**, SAS Software as an Essential Tool in Statistical Consulting and Research, *MWSUG Proceedings*, [www.mwsug.org/proceedings/2015/CD/MWSUG-2015-CD-02.pdf](http://www.mwsug.org/proceedings/2015/CD/MWSUG-2015-CD-02.pdf)
10. Vaagenes, I.C., Tsai, S-Y., Ton, S.T., Husak, V.A., McGuire, S.O., O'Brien, T.E., and Kartje, G.L., **2015**, Binge Ethanol Prior to Traumatic Brain Injury Worsens Sensorimotor Functional Recovery in Rats, *PLoS ONE*, 10(3), 1-8.
11. \*Suwannachom, N., \*Thananchai, T., Junkuy, A., O'Brien, T.E., and Sribanditmongkol, P., **2015**, Duration of Detection of Methamphetamine in Hair after Abstinence, *Forensic Sci. Intl.*, 254, 80-86.
12. Jing, P., Lu, Z., Xing, J., Streets, D.G., Tan, Q., O'Brien, T.E., & Kamberos, J., **2014**, Response of the Summertime Ground-Level Ozone Trend in the Chicago Area to Emission Controls and Temperature Changes, 2005-2013, *Atmospheric Environment*, 99(4), 630-640.
13. Tepsukon, C. and O'Brien, T.E., **2014**, Factors Associated with Micro Albuminuria in Type 2 Diabetes Patients in Nan Hospital, Thailand, *Bulletin of Chiang Mai Associated Medical Science*, 47(2), 118-124.
14. \*Binaku, K., O'Brien, T.E., Schmeling, M. and Fosco, T., **2013**, Statistical Analysis of Aerosol Species, Trace Gasses, and Meteorology in Chicago, *Environmental Monitoring and Assessment*, 185(9), 7295-7308.
15. Tiensuwan, M. and O'Brien, T.E., **2013**, Modelling Dengue Virus Infection Patients for Each Severity of Dengue Disease in Thailand, *Far East J. Math. Sci.*, SV-2013, 1, 1-20.
16. \*Jamroenpinyo, S., O'Brien, T.E. and Bumrungrsup, C., **2012**, A New Generalized Ordinal Logit Model for Multicategory Response Data, *Thailand Statistician*, 10(1), 87-105.
17. Saban, K.L., Mathews, H.L., Bryant, F.B., O'Brien, T.E., and Janusek, L.W., **2012**, Depressive Symptoms and Diurnal Salivary Cortisol Patterns Among Female Caregivers of Stroke Survivors, *Biological Research for Nursing*, 14, 396-404.
18. Sims, S.R. and O'Brien, T.E., **2011**, Mineral Oil and Aliphatic Alcohols: Toxicity and Analysis of Synergistic Effects on German Cockroaches, *Journal of Economic Entomology*, 104(5), 1680-1686.

**Publications (continued) (\* denotes student co-author)**

19. O'Brien, T.E., **2011**, Important Caveats and Concerns in Statistical Modelling and Design, *Proceedings of the 12<sup>th</sup> Thai Statistics Conference* (Hat Yai, Thailand), 1-9.
20. O'Brien, T.E., \*Jamroenpinyo, S. and Bumrungrsup, C., **2010**, Curvature Measures for Nonlinear Regression Models Using Continuous Designs with Applications to Optimal Design, *Involve, a Journal of Mathematics*, 3(3), 317-332.
21. \*Gillani, R.L., Tsai, S.Y., Wallace, D.G., O'Brien, T.E., Arhebamen, E., Tole, M., Schwab, M.E., and Kartje, G.L., **2010**, Cognitive recovery in the aged rat after stroke and anti-Nogo-A immunotherapy, *Behavioural Brain Research*, 208(2), 415-424.
22. O'Brien, T.E., **2010**, Novel Use of SAS Software in Industrial and Biomedical Consulting, Research and Teaching, *MWSUG 2010 Proceedings*, Milwaukee, WI.
23. O'Brien, T.E., **2010**, Teaching Statistics to Non-statisticians, *Thai Statistics 2010 Proceedings*, Thailand Statistics Conference, Chiang Mai, Thailand.
24. O'Brien, T.E. and Berg, M.B., **2009**, Getting the Most from Data – Maximizing Information and Power by Using Appropriate and Modern Statistical Methods, *Journal of Data Science*, 7, 537-550.
25. O'Brien, T.E., Chooprateep, S., and \*Homkham, N., **2009**, Efficient Geometric and Uniform Design Strategies for Sigmoidal Models, *South African Statistical Journal*, 43, 49-83.
26. O'Brien, T.E., Chooprateep, S., and Funk, G., **2009**, Encouraging Students to Think Critically: Regression Modelling and Goodness-of-Fit, *Journal of Data Science*, 7, 235-253.
27. O'Brien, T.E., **2008**, Teaching Statistical Concepts, Fundamentals & Modelling, *Teach. Stat.*, 30, 81-5.
28. \*Clementz, M.A., Kanjanahaluethai, A., O'Brien, T.E., and Baker, S.C., **2008**, Mutation in Murine Coronavirus Replication Protein NSP4 Alters Double Membrane Vesicles, *Virology*, 375, 118-129.
29. \*Pragobsai, P., Budsaba, K. and O'Brien, T.E., **2008**, Extending the Statistical Model to Detect Drug Synergy for Censored Data, *Proceedings of the 2008 Thailand Statistics Conference*.
30. O'Brien, T.E., **2007**, Opinion: Musings of a Statistical Consultant, *Chiang Mai J. of Science*, 34(1), 2-3.
31. Haines, L.M., \*Kabera, M.G., Ndlovu, P. and O'Brien, T.E., **2007**, D-optimal Designs for Logistic Regression in Two Variables. In Lopez-Fidalgo, J., Rodriguez-Diaz, J.M., and Torsney, B., eds., *Advances in Model-Oriented Design and Analysis*, Heidelberg: Physica-Verlag.
32. \*Ramic, M., Emerick, A., Bollnow, M.R., O'Brien, T.E., Tsai, S-Y. and Kartje, G.L., **2006**, Axonal Plasticity is Associated with Motor Recovery Following Amphetamine Treatment Combined with Rehabilitation after Brain Injury in the Adult Rat, *Brain Research*, 1111(1), 176-186.
33. O'Brien, T.E., **2006**, Robust Optimal Designs with Reduced Curvature, *2006 Proceedings of the American Statistical Association*, Biopharmaceutical Section, Alexandria, VA: American Statistical Association.
34. O'Brien, T.E., **2006**, Teaching Statistical Concepts, Fundamentals and Modelling, *Proceedings of the Seventh International Conference on Teaching Statistics* (Salvador, Brazil).
35. \*Straetemans, R., O'Brien, T., Wouters, L., Van Dun, J. and Bijmens, L., **2005**, Design and Analysis of Drug Combination Experiments, *Biometrical Journal*, 47(3), 299-308.
36. O'Brien, T.E., **2005**, Designing for Parameter Subsets in Gaussian Nonlinear Regression Models, *Journal of Data Science*, 3(2), 179-197.
37. Goos, P., Kobilinsky, A., O'Brien, T.E. and Vandebroek, M., **2005**, Model-Robust and Model-Sensitive Designs, *Computational Statistics and Data Analysis*, 49(1), 210-216.
38. O'Brien, T.E., **2005**, The Importance of Projects in Applied Statistics Courses. In Maher, R.J., ed., *Innovative Methods in Undergraduate Courses following Calculus*, MAA Notes Series, Washington, D.C: The Mathematical Association of America, pp. 115-125.

**Publications (continued) (\* denotes student co-author)**

39. Markus, T.M., Tsai, S-Y., Bollnow, M.R., Farrer, R.G., O'Brien, T.E., Kindler-Baumann, D.R., Rausch, M., Rudin, M., Wiessner, C., Mir, A.K., Schwab, M.E. and Kartje, G.L., **2005**, Recovery and Brain Reorganization after Stroke in Adult and Aged Rats, *Annals of Neurology*, 58(6), 950-953.
40. O'Brien, T.E., **2005**, Robust Design Strategies for Bioassay and Drug Synergy, in *Proceedings of the 2004 Joint Statistical Meeting* (Toronto, Canada), Biopharmaceutical Section.
41. \*Seymour, A.B., Andrews, E.M., Tsai, S-Y., Markus, T.M., Bollnow, M.R., Mrenneman, M.M., O'Brien, T.E., Castro, A.J., Schwab, M.E. and Kartje, G.L., **2005**, Delayed Treatment with Monoclonal Antibody IN-1 One Week After Stroke Results in Recovery of Function and Corticorubral Plasticity in Adult Rats, *J. Cerebral Blood Flow & Metabolism*, 1-10.
42. Dette, H. and O'Brien, T.E., **2004**, Efficient Experimental Design for the Behrens-Fisher Problem with Application to Bioassay, *American Statistician*, 58(2), 138-143.
43. Haines, L.M., O'Brien, T.E. and Clarke, G.P.Y., **2004**, Kurtosis and Curvature Measures for Nonlinear Regression Models, *Statistica Sinica*, 14(2), 547-570.
44. O'Brien, T.E., **2004**, Modelling and Design to Detect Interaction of Insecticides, Herbicides and Other Similar Compounds, in Johnson, D. and Milliken, G., eds., *Proceedings of the 15<sup>th</sup> Conference on Applied Statistics in Agriculture*, Kansas State University Press, 303-321.
45. O'Brien, T.E. and Funk, G.M., **2003**, A Gentle Introduction to Optimal Design for Regression Models, *American Statistician*, 57(4), 265-267.
46. O'Brien, T.E., **2003**, Practical Design Strategies for the Detection of Drug Synergy, *Electronic Notes in Discrete Mathematics*, 15, 134-137.
47. \*Saulsberry, A., Martin, P.R., O'Brien, T.E., Sieburth, L.E. and Pickett, F.B. **2002**, The Induced Sector Arabidopsis Apical Embryonic Fate Map. *Development*, 129, 3403-3410.
48. \*Papadopoulos, C.M., Tsai, S-Y., Alsbiei, T., O'Brien, T.E., Schwab, M.E. and Kartje, G.L. **2002**, Functional Recovery and Neuroanatomical Plasticity Following Middle Cerebral Artery Occlusion and IN-1 Antibody Treatment in the Adult Rat, *Annals of Neurology*, 51(4), 433-441.
49. O'Brien, T.E., **2002**, Hypothesis Tests, Confidence Intervals and Common Sense. In *Proceedings of the Sixth International Conference on Teaching Statistics*, Cape Town, S.A.
50. O'Brien, T.E., **2002**, Robust Experimental Design Strategies for Dose Response Models, in *Proceedings of Agro-Industrie et Methodes Statistiques*, Lille, France, 213-218.
51. Dette, H. and O'Brien, T.E., **1999**, Optimality Criteria for Regression Models Based on Predicted Variance, *Biometrika*, 86, 93-106.
52. O'Brien, T.E. and Rawlings, J.O., **1996**, A Non-Sequential Design Procedure for Parameter Estimation and Model Discrimination in Nonlinear Regression Models, *J. Stat. Plann. and Inference*, 55, 77-93.
53. Evans, M.A., \*Kim, H.M. and O'Brien, T.E., **1996**, An Application of Profile-Likelihood Confidence Interval to Capture-Recapture Estimators, *Journal of Agricultural, Biological and Environmental Statistics*, 1(1), 131-140.

**Accepted for Publication**

1. Podraza, K.M., Mehta, Y., Husak, V., Lippmann, E., O'Brien, T.E., Kartje, G.L., and Tsai, S-Y., **2017**, Improved functional outcome after chronic stroke with delayed anti-Nogo-A therapy: a clinically relevant intention-to-treat analysis, to appear in *Journal of Cerebral Blood Flow and Metabolism*.
2. O'Brien, T.E., **2018**, Contemporary Robust Optimal Design Strategies, in Tez, M. and von Rosen, D., eds., *Trends and Perspectives in Linear Statistical Inference*, Springer-Verlag.

**Book (forthcoming)**

O'Brien, T.E., *Intermediate Methods in Applied Statistics and Biostatistics*, currently under contract with Springer Science and Business Media LLC, anticipated completion date: August, 2019.

**Short Courses and Workshops (since 2005)**

- Since 2005 *Applied Nonlinear Statistical Methods*, Travelling Short Course sponsored by American Statistical Association, given: San Antonio TX, Birmingham AL, San Diego CA, Philadelphia PA, Buffalo NY in 2005; Piracicaba, Brazil, Singapore in 2006; Vientiane, Laos in 2007; Hiroshima, Japan (RERF), Kurume Univ., Japan in 2009; Univ. Philippines, Wanli Univ., Ningbo, China in 2010; Chiang Mai, Thailand, Tampere, Finland in 2014; Vietnam Institute for the Advanced Study of Mathematics, Hanoi in 2015; Applied Statistics Symposium (Atlanta) in 2016; Royal Univ. Phnom Penh in 2018
- 8 January 2018 *Applied Statistics Using R*, Chiang Mai Univ., Faculty of Medicine, Thailand
- 18-22 December 2017 *Statistical Methods in Early-Phase Clinical Development*, Infectious Disease Institute, Makerere University, Kampala, Uganda
- 10 August 2017 EMBRACE Healthcare Research Workshop, Manila, Philippines, full-day
- 6 July - 10 Aug 2016 *Intermediate Biostatistical Methods*, Chiang Mai University, Faculty of Medicine, five-week short course comprising seven 3-hour lectures
- 4-15 May 2015 *Applied Statistics Using R*, Vietnam National University – Hanoi
- 18-20 Dec 2013 *Application of Advanced Statistical Methods for Medical Workshop*, Chiang Mai University, Faculty of Medicine, “Analysis of Repeated Measures Data (including GEE)”
- 6-10 Feb 2012 *Using R Software in Biomedical Research*, Infectious Disease Institute, Makerere University, Kampala Uganda (under Accordia Global Health Foundation’s Professor in Residence Program)
- 26-27 May 2011 *Computational Aspects in Biostatistics (Using R Software)*, Chiang Mai University Thailand, Faculty of Medicine
- 7-11 March 2011 *Essentials of Statistical Consulting*, Infectious Disease Institute, Makerere University, Kampala, Uganda
- 8-10 March 2010 *Applied Econometrics and Time Series Workshop*, United Arab Emirates University, Al Ain, UAE
- 13-17 July 2009 *Statistical Methods in Medical Research*, week-long series of seminars on Biostatistical methods at Chiang Mai University Faculty of Medicine
- 8-12 June 2009 *Experimental and Optimal Design*, week-long series of seminars at Ho Chi Minh University of Technology, Vietnam; funded by The World Bank
- 19-30 May 2008 *Nonlinear Modelling – Theory and Practice*, week-long Short Course given at Ho Chi Minh Univ. of Natural Sciences in Vietnam (19-23 May 2008), and at Naresuan University, Phitsanulok Thailand (26-30 May 2008)
- 1-8 Aug 2007 *Modern Research in Statistics*, week-long course: *Statistical Power, Testing, and Estimation; Applications of Mixed Modelling; Survival Data Analysis – Past and Future*, Chiang Mai Univ., Dept. of Statistics
- Summers 2006-2008 *Statistical Methods in Bioinformatics and Microarray Research*, all-day workshop at Loyola to NSF/REU students, 6/15/06, 6/26/07 & 7/1/08

### Invited Conference Presentations

- “Statistical Modelling and Experimental Design Methods,” Invited Talk, American Statistical Association Conference on Statistical Practice, Portland OR, 16 February 2018.
- “Flexible Optimal Design Strategies,” Invited Talk, ICSA Applied Statistics Symposium, Chicago Illinois, 26 June 2017.
- “Recent Optimal Design Strategies in Applied Regression Modelling,” Invited Talk, International Conference on Trends and Perspectives in Linear Models, Istanbul, Turkey, 24 August 2016.
- “Finite Mixture Models,” Invited Discussion Presentation, ICSA Applied Statistics Symposium, Atlanta Georgia, 15 June 2016.
- “Statistical Learning and Likelihood Methods as Educational Tools,” Invited Talk, ICSA Applied Statistics Symposium, Atlanta Georgia, 14 June 2016.
- “SAS Software as an Essential Tool in Statistical Consulting and Research,” Invited Talk, Midwest SAS User’s Group (MWSUG) Conference, Omaha Nebraska, 19 October 2015.
- “Efficient Design Strategies in Toxicology,” International Workshop on Matrices in Statistics (IWMS), Invited Talk, Haikou, China, 26 May 2015.
- “Robust Design of Experiments: New Strategies and Perspectives,” Latin American Congress of Probability and Mathematical Statistics, Invited Talk, Cartagena, Columbia, 26 September 2014
- “Efficient Experimental Design Strategies for Multicategory Logit Regression Settings and Bioassay,” Invited Talk, IMS Asia Pacific Rim (APR) Meeting, Taipei, Taiwan, 3 July 2014.
- “Leveraging Statistical Consulting and Research Projects in Academia,” Invited Talk, Wisconsin-Illinois SAS Users (WILSU) Conference, Des Plaines, Illinois, 4 November 2013.
- “Involving MS Students in Consulting and Research: Novel Use of Statistical Software in Industrial Statistics”, Invited Poster, 10<sup>th</sup> International Conference on Health Policy Statistics (ICHPS), Chicago Illinois, 9-11 October 2013.
- “Robust Optimal Designs for Generalized Logit Regression Settings,” Invited Talk, International Conference in Mathematics and Applications (ICMA), Bangkok, Thailand, 17-19 December 2011.
- “Important Caveats and Concerns in Statistical Modelling and Design,” Invited Talk, 12<sup>th</sup> Annual Thai Statistics and Applied Statistics Conference, Hat Yai, Songkhla, Thailand, 18-22 May, 2011.
- “Novel Uses of SAS Software in Industrial and Biomedical Consulting, Research, and Teaching,” Invited Talk, Midwest SAS User’s Group Conference, Milwaukee, Wisconsin, 10-12 October 2010.
- “Teaching Statistics to Non-Statisticians,” Keynote Speech, 11<sup>th</sup> Annual Thai Statistics and Applied Statistics Conference, Chiang Mai, Thailand, 27-28 May 2010.
- “Optimal Design and Lack of Fit in Nonlinear Regression Models,” Invited Talk, International Conference in Mathematics and Applications (ICMA), Bangkok, Thailand, 17-19 December 2009.
- “Challenges of Assessing Goodness of Fit in Regression Modelling,” Invited Talk, International Conference in Mathematics and Applications (ICMA), Bangkok, Thailand, 15-17 August 2007.
- “Practical Considerations in Applied Nonlinear Regression Modelling,” Invited Presentation, Northern Illinois Chapter of the American Statistical Association Workshop, 22 March 2007.
- “Curvature, Robustness and Optimal Design in Applied Nonlinear Regression Modelling,” Invited Presentation, Joint Statistical Meetings (JSM), Seattle Washington, 6-10 August 2006.
- “Teaching Statistical Concepts, Fundamentals and Modelling,” Invited Presentation, 7<sup>th</sup> International Conference on Teaching Statistics (ICOTS), Salvador, Bahia, Brazil, 2-7 July 2006.
- “Optimal Robust Design for Relative Potency and the Detection of Drug Synergy in Oncology,” Invited Presentation at the 2004 Joint Statistical Meetings, Toronto, Canada, 7-12 August 2004.



### **Invited Conference Presentations (continued)**

- “Including Quality of Life Assessment in Biomedical Studies,” Invited Presentation at the 24th Conference on Applied Statistics in Ireland (CASI), Galway, Ireland, 12-14 May 2004.
- “New Developments in Bioassay and Drug Synergy,” Royal Statistical Society Three Country Corner Conference, Beerse, Belgium, 5 June 2003.
- “New Statistical Techniques in Drug Synergy and Chemometrics,” Conference on New Directions in Experimental Design (DAE-2003), Chicago, Illinois, 14-17 May, 2003.
- “Hypothesis Tests, Confidence Intervals, and Common Sense,” International Conference on Teaching Statistics (ICOTS), Cape Town, South Africa, 8-12 July 2002.
- “Extensions of Marginal Curvatures in Biostatistics,” Fourth Biennial International Conference on Statistics, Probability and Related Areas, DeKalb, Illinois, 13-15 June 2002.
- “Robust Experimental Design Strategies for Dose Response Models,” 7<sup>emes</sup> Agro-Industrie et Methodes Statistiques (AgroStat) Conference, Lille, France, 16-18 Jan. 2002.
- “Recent Developments in Model-Robust Optimal Design,” International Conference on Design of Experiments – Recent Trends and Future Directions, Univ. of Delhi, India, 27-30 December 2001.
- “Historic Aspects of Experimental Design,” International Conference of Statistical Inference and Reliability, Panjab University, Chandigarh, India, 21-24 December 2001.
- “Design of Biomedical Studies,” 9<sup>th</sup> Annual Meeting of the Belgian Statistical Society, Oostende, Belgium, 12-13 October 2001.
- “Multipurpose Designs Involving Variance and Marginal Curvature,” XXXI<sup>emes</sup> Journées de Statistique, Grenoble, France, 17-21 May 1999.
- “A New Class of Optimal Design Criteria for Regression Models,” Biometrics Society Meeting - Eastern North America Region (ENAR), Richmond, Virginia, 17-20 March 1996.
- “Using SAS® Software to Assess and Adjust for Nonlinearity in Nonlinear Regression Models,” SAS Users Group (SUGI-21) Conference, Chicago, Illinois, 10-13 March 1996.

### **Organized Conferences and Invited Paper Sessions**

- Organizer & Session Chair, “Robust Optimal Design,” Applied Statistics Symposium (ICSA), Chicago, 26 June 2017.
- Organizer & International Scientific Program Committee Member, “Statistics and its Interactions with Other Disciplines,” Ho Chi Minh City (Saigon), Vietnam, 5-7 June 2013.
- Organizer & International Scientific Program Committee Member, “2008 International Conference on Applied Probability and Statistics,” Hanoi, Vietnam, 1-3 December 2008.
- Organizer, Chair & Presenter, “Recent Developments in Statistical Methods for Drug Synergy,” Special Topics Session for Joint Statistical Meetings, Toronto, Canada, 8-12 August 2004.
- Organizer, Chair & Discussant, “Recent Developments in Pharmacokinetic Modelling” Invited Session, International Biometric Conference, Cape Town, South Africa, 14-18 December 1998.
- Organizer & Chair, “Optimal Design in Nonlinear Regression” Invited Session, International Biometric Conference, Amsterdam, Netherlands, 1-5 July 1996.
- Co-Organizer (with Professors Norman Draper and Friedrich Pukelsheim), “Workshop on Complex Nonlinear Systems,” Universiteit Augsburg, Germany, 2-3 October 1995.

**Invited Seminars and Talks**

- “Practical Biostatistics – Concepts and Methods,” Khon Kaen University, Faculty of Medicine, Khon Kaen University, Thailand, 12/28/2017.
- Hello “Serendipitous Benefits of Statistical Consulting and Collaborative Research”, St. Michael’s College, Department of Mathematics and Statistics, Burlington Vermont, 10/9/2017.
- “Statistical Methods in Precision Medicine,” University of the Philippines Manila, Department and Institute of Clinical Epidemiology, Manila, Philippines, 8/11/2017.
- “Optimal Design in Quantitative High Throughput Screening,” Chung Ang University, Department of Applied Statistics, Seoul, South Korea, 8/7/2017.
- “Statistical Modelling and Methods in Bioinformatics,” Loyola University Chicago Health Science Center, Department of Microbiology and Immunology, Maywood, Illinois, 3/10/2017.
- “Practical Approaches in Statistical Modelling and Optimal Design,” University of Chicago, Department of Public Health Sciences, Hyde Park, Illinois, 3/8/2017.
- “Statistical Modelling and Predictive Analytics in the Era of Big Data,” Kyambogo University, Kampala, Uganda, 1/12/2017.
- “Practical Biostatistics: Concepts and Methods,” Loyola University Chicago Health Science Center Neuroscience Program, Maywood, Illinois, 9/13/2016.
- “Informative and Efficient Experimental Design Approaches in Applied Research,” Northwestern University, Department of Statistics, Evanston, Illinois, 2/10/2016.
- “Current Practices in Machine/Statistical Learning,” Chiang Mai University, Department of Statistics, Chiang Mai, Thailand, 1/7/2016.
- “Using Statistical Consulting and Research Projects in Our Programs,” Tribhuvan University (6/8/2018) and Kathmandu University (6/9/2015), Depts. of Statistics, Kathmandu, Nepal.
- “Engaged Learning in Statistics and Mathematics,” Royal University of Phnom Penh, Cambodia, Department of Mathematics, 12/28/2015.
- “Illustrating Statistical Concepts with Hand-On Class Activities,” University of Phayao Secondary Demonstration School, Phayao, Thailand, 12/21/2015.
- “Engaging Students With Hands-On Big Data Projects,” Vietnamese National University Statistics Day, Department of Mathematics, Hanoi, Vietnam, 5/8/2015.
- “Practical Statistical Methods in Research,” Chiang Mai Univ., Faculty of Dentistry, 7/16/2014.
- “Some Applications of Algebra and Geometry in Applied Statistics,” Loyola University Chicago, Department of Mathematics and Statistics, Seminar in Algebra, Chicago, Illinois, 4/23/2014.
- “Novel Strategies in Academic Statistical Consulting,” Chiang Mai University, Department of Statistics, 12/23/2013.
- “Transitioning Beyond a First Statistics Course Using Likelihood Methods,” Loyola University Chicago, Department of Mathematics and Statistics, Chicago, Illinois, 11/21/2013.
- “Statistics in Medical Research,” Chiang Mai Univ., Faculty of Medicine, Thailand, 07/17/2013.
- “Applied Statistics and Program Evaluation,” University of Phayao, Thailand, 07/15/2013.
- “Introduction to R – 5-part seminar series,” Loyola University Chicago, Department of Mathematics and Statistics, Chicago, Illinois, 9/6-2012 – 10/4/2012.
- “Biostatistics and International Development: Experiences as a Jefferson Science Fellow,” Fogarty International Center, National Institutes of Health, Bethesda MD, 07/10/2012.
- “Current Research Topics in Biostatistics,” Vietnamese National University in Hanoi, Department of Mathematics, Mechanics & Informatics, Hanoi Vietnam, 12/26/2011.
- “Challenges in Global Health Biostatistical Modelling,” George Washington University (09/23/2011) and Catholic University of America (10/26/2011).

**Invited Seminars (continued)**

- “Statistical Modelling of Malaria and Dengue Data in South-East Asia,” Mahidol University Faculty of Tropical Medicine, Bangkok, Thailand, 07/29/2011.
- “Challenges of Cross-Culturalism and Internationalization in Public Health,” University of Illinois Chicago School of Public Health, 04/22/2011.
- “Current Issues in Global and Public Health Research,” Kuwait University Faculty of Medicine, Department of Community Medicine, Kuwait City, Kuwait, 11/23/2010.
- “Peace Corps Meets Biostatistics,” ASA Chicago Chapter, invited luncheon talk, 11/16/2010.
- “Current Challenges in Optimal Design and Statistical Modelling,” University of Illinois at Chicago, Department of Math, Statistics and Computer Science, Chicago, Illinois, 09/29/2010.
- “Challenges in Teaching Statistics to Non-Scientists” (talk 1) and “Interesting Research Topics for PhD Students” (talk 2), Maha Sarakham University (Thailand), Dept. of Mathematics, 07/30/2010.
- “Practical Considerations in Bioinformatics and Genomics Research,” Kasetsart University, Department of Statistics, Bangkok, Thailand, 07/19/2010.
- “Applications of Biostatistics in Clinical and Biomedical Research,” Loyola University Chicago Health Science Center, Department of Microbiology and Immunology, 04/30/2010.
- “Research Issues in Econometrics and Statistics,” United Arab Emirates University, College of Business and Economics, Al Ain, United Arab Emirates, 03/11/2010.
- “Optimal Design of Experiments Research Issues,” Silpakorn University, Department of Statistics, Nakhon Pathom, Thailand, 01/07/2010.
- “Overview of Current Optimal Design Research and Applications,” Kasetsart University, Department of Statistics, Bangkok, Thailand, 12/25/2009.
- “Efficient Design Strategies in Medical Research,” Mahidol University, Department of Mathematics and Statistics, Bangkok, Thailand, 07/02/2009.
- “Multivariate Statistical Methods in Medicine and Science,” Naresuan University Faculty of Allied Health, Phitsanulok, Thailand, 12/26/2008.
- “Applications of Biostatistics in Clinical Research,” Chiang Mai University Faculty of Medicine, Chiang Mai, Thailand, 12/24/2008.
- “Applications of Differential Geometry, Abstract and Linear Algebra in Statistics,” Centro de Investigación en Matemáticas AC, Guanajuato Mexico, 06/26/2008.
- “Recent Developments in Applied Statistics,” Naresuan University, Department of Mathematics and Statistics, Phitsanulok, Thailand, 12/26/2007.
- “Statistical Methods in Biomedical Research” (12/25/2007), and “Biostatistical Ethics” (12/28/2007), Chiang Mai University, School of Medicine, Chiang Mai, Thailand.
- “Tailoring Statistical Methods to Answer One’s Questions – Not Vice Versa,” Loyola University Chicago, Center for Urban Learning and Research, Chicago, Illinois, 09/07/2007.
- “Odds Ratios, Regression and Maximum Likelihood Techniques,” Chiang Mai University Department of Statistics, Chiang Mai, Thailand, 02/20/2007.
- “Current Topics in Statistical Genetics,” Chiang Mai University Department of Biology, Chiang Mai, Thailand, 01/26/2007.
- “New Directions for Statistical Research – Forging Better Connections with Mathematicians,” Thammasat University Department of Math and Statistics, Bangkok, Thailand, 01/19/2007.
- “Challenges in Applied Statistics – Statistical Modelling,” (01/18/2007) and “Challenges in Applied Statistics – Experimental Design” (01/19/2007), National Institute of Development Administration School of Applied Statistics, Bangkok, Thailand.

**Invited Seminars (continued)**

- “Applied Statistics: What’s Old, What’s New?” Maejo University Department of Mathematics and Statistics, Chiang Mai, Thailand, 12/20/2006.
- “Some Uses of Calculus of Variations in Applied Statistics,” Mahidol University Department of Mathematics and Statistics, Bangkok, Thailand, 11/24/2006.
- “Modern Statistical Methods in Applied Research,” Loyola University Chicago Center for Urban Environmental Research and Policy, Chicago, Illinois, 09/15/2006.
- “Biostatistics, Medical Research, and Medical Ethics,” Loyola University Chicago Pre-Health Honor Society, Chicago, Illinois, 05/02/2006.
- “What’s New in Medical Statistics and Research,” Hines VA Hospital – Loyola University Chicago Health Science Center, Department of Neuroscience, Maywood, Illinois, 03/24/2006.
- “Statistics and Risk Assessment,” US-Japan Radiation Effects Research Foundation Department of Statistics, Hiroshima Japan, 03/07/2006.
- “Recent Developments in Statistical Theory and Practice,” Georgetown University, Department of Mathematics, Washington, DC, 01/27/2006.
- “Mathematical Underpinnings of Statistical Methods,” Murray State Univ., Biomathematics Seminar Series, Murray, Kentucky, 10/31/2005.
- “Assessing Interactions in Combined Drug Studies – Efficacy and Safety,” Chicago Chapter of the American Statistical Association, invited luncheon speech, Chicago, Illinois, 02/22/2005.
- “Recent Developments in Medical Statistics – Methodology and Pedagogy,” Virginia Commonwealth University, Departments of Biostatistics & Nursing, Richmond, Virginia, 12/10/04.
- “Curvature and Optimal Design in Applied Statistics,” Virginia Commonwealth University, Department of Biostatistics, Richmond, Virginia, 10/15/2004.
- “Musings of a Consulting Statistician,” North Carolina State University, Department of Statistics Undergraduate Mentoring Program, Raleigh, North Carolina, 09/27/2004.
- “Optimal Experimental Design,” University College Dublin, Dept. of Statistics, Dublin, 07/05/2004.
- “Modern Medical Statistics,” Hines VA Hospital, Department of Neuroscience, 05/27/2004.
- “Current Issues in Teaching Biostatistics to (pre) Medical Researchers,” Emory University Department of Epidemiology and Biostatistics, Atlanta, Georgia, 04/08/2004.
- “Recent Topics in Biomedical Research,” Université Catholique de Louvain, Belgium, 12/12/2003.
- “Incorporating Quality of Life Measures in Drug Synergy Studies and Designs,” Limburgs Universitair Centrum, Belgium, 12/15/2003.
- “Recent Developments in Chemometrics,” Loyola University Chicago, Department of Chemistry, Chicago, Illinois, 10/09/2003.
- “Empowering Econometrics Students and Financial Leaders to Make Better Decisions,” Loyola University Chicago, Department of Economics, Chicago, Illinois, 09/24/2003.
- “What Biostatisticians Need to Know About Differential Geometry and Why it’s Relevant,” University of Illinois at Chicago, Illinois, 02/14/2003.
- “Practical Issues Associated with Subset Designs with Applications in Biometry and Biostatistics,” University of Sheffield, United Kingdom, 05/17/2002.
- “Practical Aspects of Experimental Design and Logistic Regression,” Université Liege, Belgium, 02/20/2002.
- “Current Issues in Optimal Design,” University of Warwick, United Kingdom, 12/07/2001.
- “Optimal Experimental Design in Practical Settings,” Janssen Research Foundation (Johnson & Johnson Pharmaceuticals), Beerse, Belgium, 11/28/2001.

### **Professional Distinctions and Awards**

- Awarded U.S. National Academies' *Jefferson Science Fellow Award*, August 2011 – July 2012 (First U.S. statistician to receive JSF award).
- Awarded Loyola University's *Master Teacher Award*, April 2009.
- Loyola University Chicago (ORS), Travel Grant to attend and give invited presentation at International Conference in Mathematics and Applications in Bangkok, Thailand, August 2007.
- Loyola University Chicago (ORS), Travel Grant to give Short Course in Singapore, October 2006.
- Awarded *Certificate of Recognition for Demonstrated Excellence in Teaching, Mentoring, and Advising of Graduate Students*, Loyola University Chicago, March 2006.
- Travel and Registration Award to attend 2003 DAE Conference, Chicago, May 2003.
- Travel Award to attend Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, Oxford, UK, 1996.
- SUGI *Best Contributed Paper Award*, 1995.
- WSU Department of Statistics Travel Grant, 1993.
- NCSU Department of Statistics Travel Grants, 1991, 1992, and 1993.
- Kansas State University Agricultural Conference Travel Grants, 1991, 1992.
- NCSU Graduate Student Association Travel Grant, 1991.

### **Graduate Student Research Supervision/Direction and External Examination**

- Ph.D. major supervisor and research director for Pattaraporn Tusto, Math & Statistics, Mahidol University, Bangkok, Thailand, "Robust Design Strategies for Assessing Interaction of Similar Compounds", 2011-2015.
- Ph.D. Dissertation External Examiner of Doreen Ssebuliba, Stellenbosch University, "Mathematical Modelling of the Effectiveness of Two Training Interventions on Infectious Disease in Uganda," Fall 2013.
- Ph.D. major supervisor and research director for Somsri Jamroenpinyo, Dept. Statistics, Thammasat University, Bangkok, Thailand, "Optimal Design for Multinomial Models", 2008-2012.
- Ph.D. committee member and external examiner of Victor López, Mathematics, Centro de Investigación en Matemáticas AC, Guanajuato, Mexico, "Optimal Design for Discrimination and Estimation in Nonlinear Models", 2008.
- M.Sc. major co-advisor (with Professor Kamon Budsaba) of Pacanat Pragobsai, Statistics, Thammasat University, Bangkok, Thailand, "Extending the Statistical Model to Detect Drug Synergy for Censored Data", 2007-2008.
- External examiner & Ph.D. dissertation co-advisor (with Prof. Linda Haines) of Legesse Kassa, Statistics, Univ. of Natal Pietermaritzburg, South Africa, "Optimal Design for Mixed Models", 2004.
- Ph.D. major co-advisor (with Professor Linda Haines) of Gaeten Kabera, Statistics, University of Natal Pietermaritzburg, South Africa, "Optimal Design for Drug Synergy", 2003-2008.
- Ph.D. major co-advisor (with Professor Chris Gennings) of Sharon Parker, Biostatistics, Virginia Commonwealth University, "Curvature and Differential Geometry", 2004-2006.
- Ph.D. committee member and external examiner of Lieven Tack, Statistics, Katholieke Universiteit Leuven, Belgium, "Optimal Design for Models with Time Trends", 2001-2002.
- Ph.D. major co-advisor (with Professor Lynne Billard) of Ye Wang, Statistics, University of Georgia, "Bilinear Models", 1996.

### **Statistical Consulting Activities**

Provided consulting and mentoring assistance to administrators, educators, colleagues and researchers at universities, businesses and governmental organizations, including:

- **U.S. Universities:** Catholic University of America, Georgetown University, Johns Hopkins University Bloomberg School of Public Health, Loyola University Chicago, Washington State University, University of Georgia, University of Rochester.
- **International Universities:** Chiang Mai University in Thailand (Faculties of Science, Medicine and Associated Medical Services), Hanoi Medical University in Vietnam, Makerere University in Kampala Uganda, National University of Laos, National University of Singapore, University of Natal Pietermaritzburg in South Africa.
- **U.S. Research Organization:** Hines VA Hospital in Chicago.
- **International Research Institutes:** Institut National de la Recherche Agronomique (INRA) in France, and Institut National de la Santé et de la Recherche Médicale (INSERM) in France.
- **U.S. Government Agencies:** Agency for International Development, Department of Energy, Department of State, Environmental Protection Agency, Fish and Wildlife Service, National Institutes of Health/Fogarty International Center.
- **Corporations:** Amylin Pharmaceuticals, BASF, Glaxo SmithKline, Goble and Associates, Janssen Pharmaceutica, Merck Pharma, Novartis Pharma.

### **Service and Activities – Statistical Community / General**

- Supervised theses and mentored six MS students to date at the African Institute for Mathematical Sciences in Cameroon (2017) Ghana (2016-17) and Senegal (2017)
- Provide pro bono statistical advice to researchers involved with Partners in Health and Statisticians Without Borders (American Statistical Association), since 2007
- Reviewer for International Conference on Applied Statistics (Thailand) proceedings, 2014
- International Research Collaborator for Bill & Melinda Gates Foundation Program for Emerging Agricultural Research Leaders for Drs. William Epeju and Bosco Bua, Kyambogo University, Kampala, Uganda, 2013
- Reviewer for promotion to Associate Professor with tenure: Dr. Jie Yang (U. Illinois Chicago, 2011), Dr. Jane Chang (Bowling Green State U., 2006), Dr. Zhide Fang (U. New Orleans, 2004)
- Reviewer for promotion to the rank of Associate Professor with tenure, Reviewer for promotion to the rank of Full Professor, Dr. Donald White, U. Toledo, Fall 2003
- Reviewer of Statistics grant submissions to S. African National Research Foundation, 2007-2011
- Peer Reviewer, Fulbright Statistics Discipline Review Committee, 2009 and 2010
- Reviewer of submissions to *Proc. of 15<sup>th</sup> Conference on Applied Statistics in Agriculture*, 2004
- Co-organizer of the Spring ASA-Chicago Spatial Statistics Conference, May 2001
- Appointed to the ASA Committee on International Relations in Statistics, 1995-97, 1997-99
- Appointed to the International Biometric Society's WNAAR Regional Advisory Board, 1995-1997
- Participant at Western Region Teaching Symposium, Utah State University, September 1993
- NCSU Graduate Student Representative to local chapter of ASA, 1990-91
- Member of NCSU Statistics Department Graduate Admissions Committee, 1989-90

### **Service and Activities – University and Department**

- Affiliate Faculty Member: Institute of Environmental Sustainability (since 2008 and half-time appointment since 2017) and Center for the Human Rights of Children (since 2013)
- Member of Loyola's Task Force on Graduate School Organizational Models, 2017
- Member of College of Arts & Sciences Rank, Tenure and Leave Committee, since 2015
- Member of Department Undergraduate Colloquium Series Committee, 2012-2014
- Member of University Rank and Tenure Committee, 2010-2013
- Member of Bioinformatics Program Advisement Committee, since 2010; served on committee to establish Loyola's Bioinformatics program in 2006
- Member of University Academic Technology Committee, 2009-2011
- Member of University Research Data Center Committee, 2009-2011
- Member of Graduate School Executive Committee, 2008-2010
- Member of Loyola's Academic Council (AC), 2005-2006; served on AC Election Committee
- Represent Department at Loyola Admission Open Houses, since 2007
- Faculty Mentor, Loyola's Carbon Undergrad. Research Scholars Program, 2007-2010 (2 students)
- Faculty Mentor, Loyola's Summer REU Program in Bioinformatics, 2006, 2007 and 2008
- Proposed and organized: Biostatistics major and minor and of Master's Program in Statistics
- Advisor for statistics and biostatistics majors and minors at Loyola, 2002 – present
- Provide statistical advice to researchers and students in Loyola's Departments of Biology, Chemistry, and Psychology; Center for Urban Research and Learning; Institute for Environmental Sustainability (former CUERP), since 1999
- Coordinate the offerings, timetable, and textbook selection of Statistics courses in Department
- Coordinate Department's Actuarial Science, Biostatistics and Certificate programs; advising students and Loyola student advisors
- Loyola University Liaison to Casualty Actuarial Society and Society of Actuaries (including coordinating four Loyola courses for VEE credit), since 1999
- Voluntarily taught introductory grad biostatistics course at Loyola Medical Center, Spring 1999
- Voluntarily served as Faculty Advisor for CAS undeclared freshmen, 1998 – 2001
- Obtained financial assistance from American Statistical Association to invite Dr. Tom Bradstreet (Merck Pharmaceuticals) to meet with Loyola students, give seminars, and discuss employment opportunities and interview strategies, Spring semester 2006
- Invited and hosted Dr. Daniel Roth (Vice President and Actuary, CNA Insurance) to give a seminar, meet with students, and discuss actuarial field and career opportunities; 2004 – 2006
- Invited and hosted Professor Marie Diener-West, Johns Hopkins Dept. of Biostatistics (and Loyola alumnus) to give biostatistical seminars and meet students and faculty, 20 September 2004
- Obtained financial assistance from American Statistical Association to invite Ms. Melanie Filas (Anheuser-Busch) to meet with Loyola students, to give a seminar, and discuss employment opportunities and interview strategies, Spring semester 2003
- Assisted and mentored Loyola UG Statistics major Denis Agniel in his CUERP-funded research on the statistical assessment of pollution in Chicago, Summer and Fall 2006
- Sponsored and mentored UG Statistics major Jennifer Chang for Loyola Graduate Forum and poster presentation, 11 March 2004
- Assisted Loyola BS-MS Math student Paul Bell in his application for Loyola Mulcahy Scholarship (awarded) for 2000-2001 academic year, in his research, and with his presentation at an international professional conference (2001 International Biometric Conference in Vancouver)

### Service and Activities – Statistical Community / Paper and Book Reviews

- Served as reviewer of paper submissions to:
  - *American Journal of Evaluation*, 2011
  - *Annals of the Institute of Statistical Mathematics*, 1999
  - *Applied Statistics*, 2002
  - *Biometrics*, 1996-1999; 2006, 2009
  - *Communications in Statistics – Theory and Methods*, 2014, 2015
  - *Computational Statistics and Data Analysis*, 2005, 2006(2), 2009
  - *International Journal of Biostatistics*, 2015(2)
  - *Involve Math Journal*, 2013
  - *Journal of Agricultural, Biological and Environmental Statistics*, 2004, 2005(2), 2006
  - *Journal of Chemometrics*, 1996
  - *Journal of Great Lakes Research*, 2000
  - *Journal of Pharmaceutical Sciences*, 2001, 2003, 2006
  - *Journal of Statistical Education*, 2003
  - *Journal of Statistical Planning and Inference*, 1994, 1998, 2002, 2005(2), 2008, 2013
  - *Journal of the American Statistical Association*, 2000, 2005, 2009
  - *LINSTAT (Springer) book conference proceedings*, 2017
  - *Maejo University Journal of Science and Technology*, 2012
  - *Pharmacological Research*, 2006
  - *PLOS-ONE*, 2015
  - *Revista Colombiana de Estadística (Colombian Journal of Statistics)*, 2013
  - *Risk Analysis*, 1999
  - *South African Statistical Journal*, 2004, 2005
  - *Statistical Methodology*, 2008
  - *Statistics, Optimization, and Information Computing*, 2016
  - *Sustainable Agriculture Research*, 2014
  - *Technometrics*, 1995-2004
  - *The American Statistician*, 1995, 2004, 2008
  - *The Thai Statistician Journal*, 2007(2), 2008, 2009(3), 2011(2), 2012(2), 2014(2), 2016
  - *Theoretical and Applied Climatology*, 2014
- Provided assessment of book plans of
  - *Generalized Nonlinear Models* by Firth & Turner, Springer, 2006
  - *R by Example: Concepts to Code* by Albert & Rizzo, Springer, 2009
- Provided solicited suggestions for revision of *Statistics for the Life Sciences* (3<sup>rd</sup> Edition, 2003) by Samuels & Witmer, 2008, and *Solutions Manual*, 2010
- Provided solicited suggestions for the revision of *Modelling Survival Data in Medical Research* (2<sup>nd</sup> Edition, 2003) by David Collett, 2010



## **EDUCATIONAL ACTIVITIES**

### **Courses Taught, C.E.M.G de Savalou (Benin, French West Africa)**

- Various courses in mathematical analysis, algebra and topology (in French) – required to prepare lycée students for the French Baccaalaureate exam and entrance into university, series L (Léttres), series BG (Biologie et Geologie) and series ST (Science et Technologie), 1980-82
- Conducted problem sessions to review for French Baccaalaureate mathematics exam, 1981-82

### **Courses Taught, Syracuse University (all at undergraduate level)**

- Precalculus, 1983
- Calculus I-III, 1983, 1984
- Ordinary Differential Equations, 1985

### **Courses Taught, Washington State University (all at graduate level)**

- Biometry, 1993, 1994
- Applied Linear Models, 1994
- Statistical Computing and Packages (including SAS®), 1994
- Statistical Consulting, 1995

### **Course Taught, University of Natal Pietermaritzburg, South Africa (at undergraduate level)**

- Statistical Theory, 1995

### **Courses Taught, University of Georgia (at graduate level)**

- Statistical Methods, 1996
- Advanced Topics in Optimal Design Theory, 1996

### **Courses Taught, Loyola University Chicago**

- Actuarial Seminar (UG level), since 2000 (6 times)
- Advanced Biostatistics (UG/G level), since 2001 (10 times)
- Applied Regression Analysis (UG/G level), 2003, 2017
- Categorical Data Analysis (UG/G level), since 2000 (5 times)
- Environmental Statistics for Math and Statistics majors (UG/G level), 2008, 2014
- Environmental Statistics for Environmental Sustainability majors, 2017, 2018
- Fundamentals of Statistics (UG level), since 1998 (5 times)
- Introduction to Biostatistics (UG level), since 1999 (11 times)
- Introduction to Probability (G level), 2012
- Introduction to Statistical Learning (UG/G level), 2015
- Longitudinal Data Analysis, 2014
- Medical Literature (G level), 2007
- Nonparametric Statistical Methods (UG/G level), 2010
- Quantitative Methods in Bioinformatics (UG/G level), since 2006 (5 times)
- Research in Optimal Experimental Design (UG level), 2002, 2008, 2009

**Courses Taught, Loyola University Chicago (continued)**

- SAS® Programming and Applied Statistics (UG/G level), 2001, 2004
- Sampling Methods (UG/G level), 2009
- Statistical Consulting (G level), since 2008 (6 times)
- Statistical Design and Analysis of Experiments (UG/G level), since 1999 (6 times)
- Statistical Genetics (UG/G level), 2005
- Statistical Literature (G level), 2009, 2010, 2011
- Statistical Methods in Genetic Epidemiology (UG/G level), 2006
- Statistical Theory (UG level), 1998, 2010
- Statistics and Medical Ethics (UG level), 2006, 2007
- Statistics for the Sciences (UG level), since 2007 (5 times)
- Survival Analysis (UG/G level), 2013

**Course Taught, Loyola University Medical Center**

- Introduction to Biostatistics, Spring 1999 (*pro bono* class for Loyola biomedical graduate students)

**Course Taught, Katholieke Universiteit Leuven, Belgium (at graduate level)**

- Applied Statistical Experimental Design in Finance and Marketing, Fall 2002

**Course Taught, Limburgs Universitair Centrum, Belgium (at graduate level)**

- Statistical Theory and Methods Associated with Bioassay and Drug and Similar Compounds Synergy, Summer 2003. Developed and distributed own *Course Notes*

**Courses Taught, Chiang Mai University, Thailand (all at graduate level)**

- Applied Multivariate Statistical Methods, 2006-7
- Linear Statistical Models, 2006-7
- Statistical Methods for Gene Expression Microarray Data, 2006-7

**Courses Taught, Thammasat University, Bangkok, Thailand (all at Ph.D. level)**

- Nonlinear Statistical Theory and Methods, 2007, 2010
- Optimal Experimental Design, 2008

**Course Taught, National Institute of Development Administration, Bangkok, Thailand (at Ph.D. level)**

- Categorical Data Analysis, 2009

**Courses Taught, Mahidol University, Bangkok, Thailand**

- Statistics for Actuarial Science majors, 2011 (undergraduate level)
- Generalized Linear Models, 2011 (graduate level)

**Directed Reading Courses (all at the graduate level), Loyola University Chicago**

- Applied Generalized Linear Models, 2000
- Applied Likelihood Methods, 2004, 2005, 2016, 2017
- Applied Multivariate Statistical Methods, 2003
- Applied Nonlinear Regression Models, 2001
- Applied Survival Analysis in Biomedical Research, 2004, 2005
- Bioassay, Dose Response and Synergy Modelling, 2017
- Biological Sequence Analysis, 2005
- Bayesian Statistical Analysis, 2006, 2010
- Differential Geometry in Generalized Linear and Nonlinear Models, 2001
- Dose Finding in Phase I and II Studies, 2017
- Drug Resistance and Synergy in Malaria Research, 2002
- Generalized Linear Models in Engineering, 2003
- Infectious Disease Modelling, 2012
- Nonlinear Mixed Modelling, 2000
- Optimal Experimental Design, 2002, 2008
- Statistical Methods Using R, 2010
- Time Series – Theory and Methods, 2009

**Courses Developed, Loyola University Chicago**

- **Advanced Biostatistics**, a senior/graduate level course for UG biology and G mathematics majors and UG biostatistics minors, focusing on experimental design, generalized linear and nonlinear modelling, bioassay and synergy, spatial statistic, survival methods, mixed models, multivariate statistical methods using Minitab, SAS® and S-Plus/R; Spring 2001
- **Applied Generalized Linear Models**, as a directed readings course, used *University of Natal Pietermaritzburg Lecture Notes on Generalized Linear Models* by J. Levine with mathematics graduate student; Fall 2000
- **Applied Likelihood Methods**, as a directed readings course, used *In All Likelihood* by Y. Pawitan with graduate students; Fall 2004
- **Applied Multivariate Statistical Methods**, as a directed readings course, used *Applied Multivariate Statistical Analysis* by Johnson & Wichern with graduate students; Fall 2003
- **Applied Nonlinear Regression Models**, as a directed readings course, used *Nonlinear Regression* by Bates & Watts with mathematics graduate students; Spring 2001
- **Applied Survival Analysis in Biomedical Research**, as a directed readings course, used *Modelling Survival Data in Medical Research* by David Collett with graduate students, Summer 2004; taught as regular class: Fall 2013
- **Bayesian Statistical Analysis**, as a directed readings course, used *Bayesian Statistics: An Introduction* by P. M. Lee with graduate students; Spring 2006
- **Bioassay, Dose Response and Synergy Modelling**, as a directed readings course, using publications by Finney and Ritz/Streibig with a graduate student; Fall 2017
- **Biological Sequence Analysis**, as a directed readings course, worked through text on BSA by Durbin, Eddy, Krogh, & Mitchison with UG biology students; Fall 2005

**Courses Developed, Loyola University Chicago (continued)**

- **Categorical Data Analysis**, a senior/graduate level course for UG biology and mathematics majors, UG biostatistics minors and G mathematics majors focusing on logistic regression, mixed generalized linear and nonlinear models using SAS and R software packages; Fall 2000
- **Differential Geometry in Generalized Linear and Nonlinear Models**, worked collaboratively with mathematics graduate student on new research extending Gaussian curvature measures to cover linear and nonlinear models for other distributions; Spring 2001
- **Dose Finding in Phase I and II Studies**, as a directed readings course, using *Dose Finding in Drug Development* by Naitee Ting and related works with a graduate student; Fall 2017
- **Drug Resistance and Synergy in Malaria Research**, as a directed readings course, used texts and research papers on statistical malarial modelling with a graduate student; Fall 2002
- **Environmental Statistics (Loyola Math Department)**, a senior/graduate level course for mathematics and statistics students exploring applications of the R programming language in applied statistics and highlighting multivariate techniques such as principal components analysis and detrended correspondence analysis in ecology and environmental science; Spring 2008
- **Environmental Statistics (Loyola Institute for Environmental Sustainability)**, an undergraduate-level algebra-based introductory statistics course using R-Studio and *OpenIntro-Statistics* by Diez, Barr, and Çetinkaya-Rundel; Fall 2017
- **Generalized Linear Models in Engineering**, as a directed readings course, used *Generalized Linear Models (with applications in Engineering and the Sciences)* by Myers, Montgomery & Vining with mathematics graduate student; Spring 2003
- **Infectious Disease modelling**, a graduate level course for statistics students using *An Introduction to Infectious Disease Modelling* by Vynnycky & White; Fall 2012
- **Introduction to Statistical Learning**, a senior/graduate level course for statistics students using *An Introduction to Statistical Learning* by James, Witten, Hastie & Tibshirani; Fall 2015
- **Longitudinal Data Analysis**, a senior/graduate level course for statistics students using *Longitudinal Data Analysis* by Hedeker & Gibbons; Fall 2014
- **Medical Literature**, a graduate level course for MS biology students enrolled in Loyola's MAMS program discussing and criticizing statistical techniques used in various research articles chosen from current biological and medical literature; Fall 2007
- **Nonlinear Mixed Modelling**, as a directed readings course, used *Nonlinear Models for Repeated Measurement Data* by Davidian & Giltinan with math graduate student; Summer 2000
- **Nonparametric Statistical Methods**, a senior/graduate level course for biology, mathematics and statistics students using *Introduction to Nonparametric Statistics* by Higgins; Fall 2010
- **Optimal Experimental Design**, as a directed readings course to two Loyola mathematics graduate students, used (and with students wrote computer programs for) *Optimum Experimental Design* by Atkinson and Donev; Spring 2002
- **Quantitative Methods in Bioinformatics**, a senior/graduate level course for UG biology and G math majors and UG biostatistics minors, focusing on mathematical, probabilistic and statistical methods and models used in bioinformatics and DNA microarray and protein array data analysis; Spring 2006
- **Statistics and Medical Ethics**, an introductory course focusing on statistical and ethical issues of drug studies based on *The Truth About the Drug Companies* by Marcia Angell and *Powerful Medicines: The Benefits, Risks and Costs of Prescription Drugs* by Jerry Avorn; Spring 2006

### Courses Developed, Loyola University Chicago (continued)

- **Statistical Concepts**, an algebra-based, writing-intensive, non-formulaic statistical literacy course with specific focus on medical experiments and findings, the communication media (e.g., newsprint), political studies and “spin”, and financial numerical misrepresentations; Fall 2005
- **Statistical Consulting**, a graduate level course for MS students enrolled in Loyola’s Applied Statistics graduate program focusing on different strategies to conduct statistical consulting and facilitating on-campus statistical consulting sessions as the course practicum; Fall 2008
- **Statistical Genetics**, as a directed readings course, used *Mathematical and Statistical Methods for Genetic Analysis* by Kenneth Lange with graduate students; Summer 2005
- **Statistical Literature**, a graduate level course for MS students enrolled in Loyola’s Applied Statistics graduate program focusing on the application of statistics in society and on recent developments in statistical techniques; Fall 2009
- **Statistical Methods in Genetic Epidemiology**, a senior/graduate level course for UG biology and G mathematics majors and UG biostatistics minors focusing on mathematical, probabilistic and statistical theory and techniques used in public health and epidemiology; Summer 2006
- **Statistical Methods Using R**, a graduate level course for Applied Statistics MS students using the texts *Introductory Statistics with R* by Dalgaard, *Nonlinear Regression with R* by Ritz and Streibig, and *ggplot2* by Wickham; Spring 2010
- **Statistical Sampling Methods**, a senior/graduate level course for biology, mathematics and statistics students using the *Sampling* text by S. Thompson; Fall 2009
- **Time Series – Theory and Methods**, a graduate level directed readings course for a Loyola Applied Statistics MS student using the text *Introduction to Time Series & Forecasting* by Brockwell & Davis; Summer 2009

### Course Developed, Katholieke Universiteit Leuven, Belgium

- **Applied Statistical Experimental Design in Finance and Marketing**, a PhD-level course focusing on experimental designs and analyses used in research in finance and marketing, using *Design of Experiments: Statistical Principles of Research Design and Analysis* by Kuehl and articles chosen from *J. Marketing Research*; Fall 2002

### Course Developed, Limburgs Universitair Centrum, Belgium

- **Statistical Theory and Methods Associated with Bioassay and Drug and Similar Compounds Synergy**, a postgraduate level university course (also attended by numerous Ph.D.-level professional pharmaceutical biostatisticians and medical researchers) introducing novel and original approaches to the detection and quantification of synergy and interactions of drugs and other compounds (including insecticides, herbicides and pollutants). Wrote and discussed own computer programs and developed own *Course Notes*; Summer, 2003.

### Courses Developed, Chiang Mai University, Thailand

- **Applied Multivariate Statistical Methods**, a Masters-level course focussing on testing, clustering, and estimation techniques for multivariate data, using *Applied Multivariate Statistical Analysis* by Johnson and Wichern; Second semester, 2006-7

**Courses Developed, Chiang Mai University, Thailand (continued)**

- **Linear Statistical Models**, a Masters-level course focussing on theoretical results for testing, and estimation of linear, generalized linear and nonlinear statistical models, using *Linear Regression Analysis* by Seber and Lee; Second semester, 2006-7
- **Statistical Methods for Gene Expression Microarray Data**, a Masters-level course over-viewing recent developments in analytic methods for the evaluation of microarray data, using *Exploration and Analysis of DNA Microarray and Protein Array Data* by Amaratunga and Cabrera; Second semester, 2006-7

**Courses Developed, Thammasat University, Bangkok, Thailand**

- **Nonlinear Statistical Theory and Methods**, a five-week Ph.D.-level course focussing on theory and applications of nonlinear models, using *Contemporary Statistical Models for the Plant and Soil Sciences* by Schabenberger and Pierce; Summer, 2007
- **Optimal Experimental Design**, a three-week Ph.D.-level course covering the theoretical developments in optimal design and providing applications, using *Optimum Experimental Design, Using SAS* by Atkinson, Donev & Tobias; Summer, 2008

**Course Developed, Mahidol University, Bangkok, Thailand**

- **Generalized Linear Models: Theory and Practice**, an eight-week Ph.D.-level course focussing on theory and applications of generalized linear models, using *An Introduction to Generalized Linear Models*, 3<sup>rd</sup> Edition, by Dobson & Barnett; Summer 2011