

## Gareth M. James

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### CONTACT INFORMATION

*E-mail:* gareth@emory.edu

### RESEARCH INTERESTS

Functional data analysis, Statistical and Machine Learning, Statistics in Marketing

### EDUCATION

**Stanford University**, Palo Alto, California

Ph.D., Statistics, June 1998

- Advisor : Trevor Hastie

**University of Auckland**, New Zealand

Bachelor of Science and Bachelor of Commerce, May 1994

- Majored in Statistics and Finance

### EMPLOYMENT HISTORY

**Goizueta Business School, Emory University**, Atlanta, Georgia

*John H. Harland Dean of the Goizueta Business School*

July 2022 -

**Marshall School of Business, University of Southern California**, Los Angeles, California

*Deputy Dean of the USC Marshall School of Business*

2020 - 2022

*Interim Dean of the USC Marshall School of Business*

2019 - 2020

*E. Morgan Stanley Chair in Business Administration*

2014 - 2022

*Professor of Data Sciences and Operations*

2013 - 2022

*Director of Institute for Outlier Research in Business*

2017 - 2019

*Vice Dean for Faculty and Academic Affairs*

2013 - 2017

*Professor of Information and Operations Management*

2009 - 2013

*Associate Professor of Information and Operations Management*

2005 - 2009

*Assistant Professor of Information and Operations Management*

1998 - 2005

**Stanford University**, Palo Alto, California

*Teaching and Research Assistant, Department of Statistics*

1994 - 1998

### HONORS AND AWARDS

Plenary Speaker, South African Statistical Association Conference, 2021

Elected Fellow of the Institute of Mathematical Statistics, 2021

USC Provost's Mentoring Award, 2021. "Honors a faculty member whose investment in and generosity toward the academic and professional success of other USC faculty, postdoctoral fellows, graduate students, or undergraduate students demonstrate exemplary mentoring." Awarded to at most two faculty throughout USC each year.

Plenary Speaker, International Conference on Robust Statistics-Latin American Conference in Statistical Computing, 2019

Evan C. Thompson Mentoring and Leadership Award, 2019

Dean's Award for Ph.D. Advising, 2019. Inaugural winner

Golden Apple Award for MBA core courses, 2019. Awarded to the top professor among all Marshall full time MBA first year classes

Plenary Speaker, INFORMS, 2016

USC Mellon Faculty Mentoring Faculty Award, 2013

Elected Fellow of the American Statistical Association, 2012

Dean's Award for Research Excellence, 2011. Awarded to 4 out of 120 research faculty at the Marshall School of Business

Golden Apple Award for MBA core courses, 2007. Awarded to the top professor among all Marshall full time MBA first year classes

Golden Apple Award for MBA elective courses, 2006. Awarded to the top professor among all Marshall MBA elective courses as voted by the students

Evan C. Thompson Faculty Teaching and Learning Innovation Award, 2006. Awarded to at most 4 out of 180 teaching faculty at the Marshall School of Business. First person to win both the Evan C. Thompson prize and the Dean's Award for Research Excellence

Dean's Award for Research Excellence, 2005. Awarded to the 4 out of 120 research faculty at the Marshall School of Business

Stanford University Department of Statistics Teaching Assistant Award, 1998

ASA Student Paper Competition, 1997

Neural Information Processing Systems (NIPS) Travel Award, 1997

Nominated for Stanford's Centennial Teaching Assistant Award for excellence in Course Assisting, 1997

Awarded Fulbright Scholarship to study in the United States, 1994

EDITORSHIPS AND  
BOARD

Associate Editor for Journal of the Royal Statistical Society, Series B, January 2017 - 2020

MEMBERSHIPS

Associate Editor for Operations Research, 2018 - 2020

Guest Associate Editor for Management Science, 2018

Member of the Advisory Board for the Center for Applied Mathematical Sciences, 2016 - 2022

Associate Editor for Journal of the American Statistical Association, Theory and Methods, 2008 - 2014

Associate Editor for Statistical Sinica, 2008 - 2014

Associate Editor for Journal of the American Statistical Association, Applications and Case Studies, 2012 - 2014

BOOKS

James, G., Witten, D., Hastie, T., Tibshirani, R., and Taylor, J. (2023) “An Introduction to Statistical Learning: with Applications in Python” *Springer*

James, G., Witten, D., Hastie, T., and Tibshirani, R. (2021) “An Introduction to Statistical Learning: with Applications in R” (Second Edition) *Springer*

James, G., Witten, D., Hastie, T., and Tibshirani, R. (2013) “An Introduction to Statistical Learning: with Applications in R” *Springer*

REFEREED  
JOURNAL  
PUBLICATIONS  
AND  
DISCUSSIONS

- [1] Yao, S., Rava, B., Tong, X. and James, G. (2023) “Asymmetric error control under imperfect supervision: a label-noise-adjusted Neyman-Pearson umbrella algorithm”, *Journal of the American Statistical Association* (to appear).
- [2] Fu, L., Gang, B., James, G. and Sun, W. (2022) “Heterocedasticity-Adjusted Ranking and Thresholding for Large-Scale Multiple Testing”, *Journal of the American Statistical Association* **117**, 1028-1040.
- [3] James, G., Radchenko, P. and Rava, B. (2022) “Irrational Exuberance: Correcting Bias in Probability Estimates,” *Journal of the American Statistical Association* **117**, 455-468.
- [4] Chandrasekaran, D., Tellis, G. and James, G. (2022) “Leapfrogging, Cannibalization, and Survival during Disruptive Technological Change: The Critical Role of Rate of Disengagement,” *Journal of Marketing* **86**, 149-166.
- [5] Qiao, X., Qian, C., James, G. and Guo, S. (2020) “Doubly Functional Graphical Models in High Dimensions,” *Biometrika* **107**, 415-431.
- [6] James, G., Paulson, C. and Rusmevichientong, P. (2020) “Penalized and Constrained Optimization: An Application to High-Dimensional Website Advertising,” *Journal of the American Statistical Association* **115**, 107-122.
- [7] Qiao, X., Guo, S. and James, G. (2019) “Functional Graphical Models,” *Journal of the American Statistical Association* **114**, 211-222.
- [8] Paulson, C., Luo, L. and James, G. (2018) “Efficient Large-Scale Internet Media Selection Optimization for Online Display Advertising,” *Journal of Marketing Research* **55**, 489-506.
- [9] James, G. (2018) “Statistics within Business in the Era of Big Data,” *Statistics and Probability Letters* **136**, 155-159.
- [10] Derenski, J., Fan, Y. and James, G. (2017) Discussion of “Random-projection ensemble classification” by Cannings and Samworth, *Journal of the Royal Statistical Society, Series B* **79**, 1009-1010.

- [11] Fan, Y., James, G. and Radchenko, P. (2015) "Functional Additive Regression," *Annals of Statistics* **43**, 2296-2325.
- [12] Radchenko, P., Qiao, X. and James, G. (2015) "Index Models for Sparsely Sampled Functional Data," *Journal of the American Statistical Association* **110**, 824-836.
- [13] Fan, Y., Foutz, N. James, G. and Jank, W. (2014) "Functional Response Additive Model Estimation with Online Virtual Stock Markets," *Annals of Applied Statistics* **8**, 2435-2460.
- [14] Savaiano, D., Ritter, A., Klaenhammer, T., James, G., Longcore, A., Chandler, J., Walker, W., and Foyt, H. (2013) "Improving lactose digestion and symptoms of lactose intolerance with a novel galactooligosaccharide (RP-G28): a randomized, double-blind clinical trial," *Nutrition Journal* **12**:160, 1-9.
- [15] Tian, T. and James, G. (2013) "Interpretable Dimension Reduction for Classifying Functional Data," *Computational Statistics and Data Analysis* **57**, 282-296.
- [16] James, G., Sun, W., and Qiao, X. (2012) Discussion of "Clustering Random Curves Under Spatial Dependence" by Serban and Jiang, *Technometrics* **54**, 123-126.
- [17] Sood, A., James, G., Tellis, G. and Zhu, J. (2012) "Predicting the Path of Technological Innovation: SAW Versus Moore, Bass, Gompertz, and Kryder," *Marketing Science* **31**, 964-979.
- [18] Radchenko, P. and James, G. (2011) "Forward-Lasso Adaptive SHrinkage," *Annals of Applied Statistics* **5**, 427-448.
- [19] Radchenko, P. and James, G. (2010) "Variable selection using Adaptive Non-linear Interaction Structures in High dimensions," *Journal of the American Statistical Association* **105**, 1541-1553.
- [20] Guo, J., James, G., Levina, L., Michailidis, G. and Zhu, J. (2010) "Principal Component Analysis with Sparse Fused Loadings," *Journal of Computational and Graphical Statistics* **19**, 930-946.
- [21] Tian, T., Wilcox, R. and James, G. (2010) "Data Reduction in Classification: A Simulated Annealing Based Projection Method," *Statistical Analysis and Data Mining* **3**, 319-331.
- [22] James, G., Sabatti, C., Zhou, N. and Zhu, J. (2010) "Sparse Regulatory Networks," *Annals of Applied Statistics* **4**, 663-686.
- [23] Tian, T., James, G. and Wilcox, R. (2010) "Multivariate Adaptive Stochastic Search Method for Dimensionality Reduction in Classification," *Annals of Applied Statistics* **4**, 339-364.
- [24] Xu, M., Li, W, James, G., Mehan, M. and Zhou, X. J. (2009) "Automated Multi-dimensional Phenotypic Profiling Using Large Public Microarray Repositories," *PNAS* **106**, 12323-12328.
- [25] James, G., Wang, J. and Zhu, J. (2009) "Functional Linear Regression That's Interpretable," *Annals of Statistics* **37**, 2083-2108.

- [26] James, G. and Radchenko, P. (2009) "A Generalized Dantzig Selector with Shrinkage Tuning," *Biometrika* **96**, 323-337.
- [27] Sood, A., James, G. and Tellis, G. (2009) "Functional Regression: A New Model and Approach for Predicting Market Penetration of New Products," *Marketing Science* **28**, 36-51.
- [28] James, G., Radchenko, P. and Lv, J. (2009) "DASSO: Comparing the Dantzig Selector and LASSO," *Journal of the Royal Statistical Society, Series B* **71**, 127-142.
- [29] Radchenko, P. and James, G. (2008) "Variable Inclusion and Shrinkage Algorithms," *Journal of the American Statistical Association* **103**, 1304-1315.
- [30] James, G., and Radchenko, P. (2008) Discussion of "Sure Independence Screening for Ultrahigh Dimensional Feature Space" by Fan and Lv, *Journal of the Royal Statistical Society, Series B* **70**, 895-896.
- [31] James, G. (2007) "Curve Alignment by Moments," *Annals of Applied Statistics* **1**, 480-501.
- [32] James, G., Sugar, S., Desai, R. and Rosenheck, R. (2006) "A Comparison of Outcomes Among Patients with Schizophrenia in Two Mental Health Systems: A Health State Approach," *Schizophrenia Research* **86**, 309-320.
- [33] Sabatti, C. and James, G. (2006) "Bayesian Sparse Hidden Components Analysis for Transcription Regulation Networks," *Bioinformatics* **22**, 737-744.
- [34] James, G. and Sood, A. (2006) "Performing Hypothesis Tests on the Shape of Functional Data," *Computational Statistics and Data Analysis* **50**, 1774-1792.
- [35] Scott, S., James, G. and Sugar, C. (2005) "Using Hidden Markov Health State Models to Analyze Data from Clinical Trials," *Journal of the American Statistical Association* **100**, 359-369.
- [36] James, G. and Silverman, B. (2005) "Functional Adaptive Model Estimation," *Journal of the American Statistical Association* **100**, 565-576.
- [37] Sugar, C., James, G., Lenert, L. and Rosenheck, R. (2004) "Discrete State Analysis for Interpretation of Data from Clinical Trials," *Medical Care* **42**, 183-196.
- [38] Sugar, C. and James, G. (2003) "Finding the Number of Clusters in a Data Set : An Information Theoretic Approach," *Journal of the American Statistical Association* **98**, 750-763.
- [39] James, G. and Sugar, C. (2003) "Clustering for Sparsely Sampled Functional Data," *Journal of the American Statistical Association* **98**, 397-408.
- [40] James, G. (2003), "Variance and Bias for General Loss Functions," *Machine Learning* **51**, 115-135.
- [41] James, G. (2002) "Generalized Linear Models with Functional Predictor Variables," *Journal of the Royal Statistical Society, Series B* **64**, 411-432.

- [42] James, G., and Hastie, T. (2001), “Functional Linear Discriminant Analysis for Irregularly Sampled Curves,” *Journal of the Royal Statistical Society, Series B* **63**, 533-550.
- [43] James, G., Hastie, T. and Sugar, C. (2000), “Principal Component Models for Sparse Functional Data,” *Biometrika* **87**, 587-602.
- [44] James, G., and Hastie, T. (1998), “The Error Coding Method and PICTs,” *Journal of Computational and Graphical Statistics* **7**, 377-387. This paper was a winner of the 1997 ASA Student Paper competition.
- OTHER PUBLICATIONS
- [45] James, G. (2019) Forward for “The Hundred-Page Machine Learning Book” by Burkov *Amazon*.
- [46] James, G. (2017) Forward for “Data Mining for Business Analytics” by Shmueli et al. *Wiley*.
- [47] James, G. (2010) “Sparseness and Functional Data Analysis”. Book chapter in *Oxford Handbook on Statistics and Functional Data Analysis* (Editors: F. Ferraty and Y. Romain).
- [48] James, G., and Sood, A. (2005), “When Will This Technology Improve? - Hypothesis Tests On The Shape Of Functional Data” *ECRM 2005: The 4th European Conference on Research Methodology for Business and Management Studies*.
- [49] James, G., and Hastie, T. (1998), “The Error Coding and Substitution PaCTs,” *Advances in Neural Information Processing Systems* **10**, 542-548.

TEACHING EXPERIENCE

**Marshall School of Business, University of Southern California**, Los Angeles, California

DSO 530 Applied Modern Statistical Learning Methods, MBA Program, 2006-2008, 2011

GSBA 524 Managerial Statistics and Decision Making, MBA Program, 2000-2006, 2009-2010, 2012, 2018, 2019

GSBA 603 Foundations of Statistical Inference, PhD Program, 1998 - 2001, 2003 - 2004, 2008

BUAD 309 Business Decisions Under Uncertainty, Undergraduate Honors Program, 1998 - 1999

**Stanford University**, Palo Alto, California

Stat 203 Introduction to Analysis of Variance and Design, Statistics Masters Program, 1997

TEACHING EVALUATIONS

Class	Number of Sections	Instructor Eval	Course Eval	Avg Number Students
BUAD 309	4	4.52	4.02	23.0
GSBA 524	28	4.48	4.15	71.1
DSO 530	5	4.82	4.33	44.3
GSBA 603	7	4.86	4.50	11.6
Overall	44	4.58	4.22	53.2

All evaluations are on a 5 point scale.

## GRANTS

Co-PI on NSF Grant DMS-0906784: “Regularization Methods in High Dimensions with Applications to Functional Data Analysis, Mixed Effects Models and Classification”, July 2009 - July 2012. Total Grant approximately \$200,000

PI on NSF Grant DMS-0705312: “Generalized Variable Selection with Applications to Functional Data Analysis and Other Problems”, July 2007 - July 2010). Total Grant (including Co-PI Ji Zhu) approximately \$180,000

## INVITED TALKS

Fuqua Business School, Duke University, North Carolina, April 2023

Department of Statistics, University of Pretoria, South Africa, October 2022

Notre Dame Mendoza College of Business, Indiana, September 2022

Department of Statistics, ITAM, Mexico, March 2022

Plenary Session for the South African Statistical Association Conference, South Africa, December 2021

Cornell University, New York, October 2021

Prime for Integrated Research Solutions Working Group, Egypt and surrounding region, October 2021

Southern California Statistical Association, California, December 2020

Plenary Session for the International Conference on Robust Statistics (ICORS) and the Latin American Conference on Statistical Computing (LACSC), Guayaquil, Ecuador, May 2019

Rutgers University, New Jersey, April 2019

Conference on Statistical Learning and Data Science, Columbia University, New York, June 2018

University of California, Los Angeles, May 2018

Business Research Applications Need Data Science (BRANDS), USC, Los Angeles, CA, April 2018

ERCIM WG on Computational and Methodological Statistics, London, UK, December 2017

New York University, New York, September 2017

IMS-China International Conference on Statistics and Probability, Nanning, China, July 2017

Plenary Session for INFORMS, Nashville, Tennessee, November 2016

Big Data in Economics Conference, USC, Los Angeles, CA, October 2016

Panel Discussant for de Leeuw Seminar, University of California, Los Angeles, April 2016

Human Behavior Conference, USC, Los Angeles, CA, March 2016

University of California, Berkeley, February 2016

University of Miami, Miami, Florida, February 2016

International Society for Non-Parametric Statistics Meeting, Graz, Austria, July 2015

RAND, Santa Monica, California, May 2015

University of California, Los Angeles, May 2015

6th International Conference on ERCIM, London, December 2013

Columbia University, New York, December 2013

Centre for Applied Financial Economics Workshop, University of Southern California, Los Angeles, November 2013

ENAR, Orlando, Florida, March 2013

Winter Marketing Meetings, Las Vegas, February 2013

Melbourne University, Melbourne, Australia, December 2012

University of California, Los Angeles, November 2012

Florida State, Tallahassee, October 2012

University of Texas, MD Anderson Cancer Center, Houston, October 2012

JSM Invited Talk, San Diego, California, August 2012

JSM Discussion Session, San Diego, California, July 2012

IMS-Asia Pacific Rim Conference, Tokyo, Japan, July 2012

Statistical Learning and Data Mining ASA Section Conference, University of Michigan, June 2012

University of California, Irvine, April 2012

Workshop on Large Scale Statistical Inference, University of Minnesota, April 2012

JSM, Miami Beach, Florida, August 2011

University of Texas, Austin, April 2011

Stanford University, Palo Alto, California, January 2011

University of Florida Winter Workshop, Gainesville, January 2011

University of California, San Diego, November 2010

University of Wisconsin, Madison, November 2010

London School of Economics, London, October 2010

International Conference on Statistics and Society, Beijing, July 2010

ICSA Applied Statistics Symposium, Indianapolis, June 2010



University of California-Los Angeles, April 2010

ENAR meetings, New Orleans, Louisiana, March 2010

JSM meetings, Washington D.C., August 2009

Sixth St. Petersburg Workshop on Simulation, Russia, June 2009

ICSA Applied Statistics Symposium, San Francisco, June 2009

University of California-Los Angeles, May 2009

Booth School of Business, University of Chicago, May 2009

ENAR meetings, San Antonio, Texas, March 2009

Statistics Department, Stanford University, Palo Alto, January 2009

Radcliffe Institute of Advanced Studies at Harvard, Boston, October 2008

INFORMS Annual Conference, Washington DC., October 2008

Joint Statistical Meetings, Denver, August 2008

1st International Workshop on Functional and Operatorial Statistics, Toulouse, France, June 2008

University of Michigan, Ann Arbor, March 2008

University of Auckland, New Zealand, February 2008

Mathematics Department, University of Southern California, November 2007

University of Maryland, Maryland, October 2007

ISBIS Meetings, Azores, Portugal, August 2007

Joint Statistical Meetings, Salt Lake City, July 2007

University of California-Los Angeles, April 2007

ORFE, Princeton University, April 2007

Wharton School of Business, University of Pennsylvania, March 2007

JSM meetings, Seattle, August 2006

IMS meetings, Rio de Janeiro, Brazil, August 2006

Statistics at the Frontiers of Science, Banff, Canada, June 2006

Wharton School of Business, University of Pennsylvania, October 2005

University of California-Riverside, April 2005

University of Chicago, Illinois, April 2005

University of Wisconsin, Madison, Wisconsin, February 2005

Carnegie Mellon, Pittsburgh, Pennsylvania, January 2005

Yale, New Haven, Connecticut, December 2004

University of California-Los Angeles, December 2004

WNAR meetings, University of New Mexico, New Mexico, June 2004

University of California-Riverside, May 2004

ENAR meetings, Pittsburgh, Pennsylvania, March 2004

University of California-Irvine, January 2004

University of Washington, January 2004

University of California-Los Angeles, January 2004

University of California-San Diego, July 2003

WNAR meetings, Golden, Colorado, June 2003

IMS Meetings, Banff, Canada, July 2002

Model Based Clustering Workshop, University of Washington, July 2002

Conference on Non-parametric Statistics, Crete, July 2002

WNAR meetings, University of California-Los Angeles, June 2002

University of California-Los Angeles, February 2002

University of California-Santa Barbara, February 2002

Stanford University, January 2002

University of California-Irvine, January 2002

University of California-Los Angeles, May 2001

University of Auckland, New Zealand, May 2000

RAND, Santa Monica, April 2000

Stanford University, October 1999

Joint Statistical Meetings, Baltimore, August 1999

Mathematics Department, University of Southern California, April 1999

Stanford University, June 1998

University of Minnesota - Minneapolis-Saint Paul, February 1998

University of California - Santa Barbara, February 1998

Marshall School of Business, University of Southern California, January 1998

Wharton School of Business, University of Pennsylvania, January 1998

Johns Hopkins, January 1998

North Carolina State University, January 1998

University of Washington, January 1998

Joint Statistical Meetings, Anaheim, August 1997. Presentation in special session for winners of ASA Student Paper Competition

#### STUDENTS

The Marshall School of Business started a PhD program in Statistics in the Fall of 2010 so, to date, I have only had limited opportunities to act as the principal advisor. However, I have served on the dissertation committees for numerous students both inside and outside the business school.

Nilesh Saraf, Information and Operations Management, 2002

Yu-shuo Chang, Environmental Engineering, 2002

Wayne Johansson, Information and Operations Management, 2003

Ixchel Faniel, Information and Operations Management, 2004

Jiangfan Zhong, Information and Operations Management, 2005

Ashish Sood, Marketing, 2005

Hal Daume III, Computer Science, 2006

Shaosong Ou, Information and Operations Management, 2006

Andrew Yoon, Environmental Engineering, 2006

Reza Alaghand, Molecular and Computational Biology, 2007

Alexander Fraser, Computer Science, 2007

Deepa Chandrasekaran, Marketing, 2007

Babak Pazokifard, Environmental Engineering, 2007

Shabnam Dilmaghani, Environmental Engineering, 2007

Ran Duchin, Finance and Business Economics, 2008

Salvatore Miglietta, Finance and Business Economics, 2008

John McCrow, Molecular and Computational Biology, 2008  
Jerry Huang, Molecular and Computational Biology, 2008  
Siva Tian (Co-Advisor), Quantitative Psychology, 2009  
Min Xu, Molecular and Computational Biology, 2009  
Dhruv Grover, Molecular and Computational Biology, 2009  
Chien-Cheng Pan, Environmental Engineering, 2009  
Abhimanyu Das, Computer Science, 2009  
Tan Hung Marie Ng, Quantitative Psychology, 2009  
Huanqing Ge, Molecular and Computational Biology, 2009  
Juan Nunez-Iglesias, Molecular and Computational Biology, 2009  
Seshadri Tirunillai, Marketing, 2011  
Joo He Oh, IOM, 2011  
Yemin Shi (Masters Advisor), Computational Biology, 2011  
Tim Triche, Preventive Medicine, 2011  
Xinghao Qiao (Advisor), DSO, 2015  
Courtney Paulson (Advisor), DSO, 2016  
Jianghao Wang, Earth Sciences, 2015  
Ben Smith, Psychology, 2018  
Luella Fu (Co-advisor), DSO, 2018  
Joshua Derenski (Co-advisor), DSO, 2021  
Brad Rava (Co-advisor), DSO, 2022  
Hayon Song, Economics, 2023

EXTERNAL SERVICE Session chair at the Interface meetings, 2001  
ACTIVITIES  
Session organizer and chair at the WNAR meetings, 2004  
Session chair at the IMS meetings, 2006  
Session organizer at the JSM meetings, 2008  
Session organizer at the WNAR/IMS meetings, 2008, 2009

JSM program chair for Statistical Learning and Data Mining Section, 2011

NSF Grant review panel, 2011

Associate Editor for Journal of the American Statistical Association - Theory and Methods, 2008-2014

Associate Editor for Statistica Sinica, 2008-2014

Associate Editor for Journal of the American Statistical Association - Applications and Case Studies, 2012-2014

Associate Editor for Royal Statistical Society, Series B, 2017- Present

Associate Editor for Operations Research, January 2018 - Present

Guest Associate Editor for Management Science, 2018

Co-Organizer of the Inaugural Business Research Applications Needing Data Science (BRANDS) Workshop, USC, 2018.

#### MEMBERSHIPS

American Statistical Association (Fellow and Life Member)

Institute of Mathematical Statistics (Fellow and Life Member)

New Zealand Statistical Association