David A. van Dyk

Statistics Section
Department of Mathematics
Imperial College London
London SW7 2AZ
United Kingdom

Office: 539 Huxley Building
Phone: +44 (0)20 7594 8574
e-mail: dvandyk@imperial.ac.uk
URL: http://wwwf.imperial.ac.uk/~dvandyk/
ORCiD: 0000-0002-0816-331X

EDUCATION

Doctor of Philosophy, 1995, University of Chicago (Statistics).
Thesis: *Construction, implementation, and theory of algorithms based on data augmentation and model reduction*, under the supervision of Professor Xiao-Li Meng.

Bachelor of Science, 1991, Michigan State University (Statistics and Probability). Graduated from the Honors College with High Honors.

PROFESSIONAL EXPERIENCE

Chair in Statistics, Department of Mathematics, Imperial College London, 7/11 – present.

Head of Department of Mathematics, Imperial College London, 10/17 – 9/23.

Chair, Department of Statistics, University of California, Irvine, 7/10 – 6/11.

Professor, Department of Statistics, University of California, Irvine, 7/05 – 6/11.

Visiting Professor, Department of Statistics, Chinese University of Hong Kong, 1/10 – 4/10.

Acting Chair, Department of Statistics, University of California, Irvine, 10/07 – 12/07 and 12/08 – 04/09.

Visiting Scholar, Department of Statistics, Columbia University, 06/06 – 08/06.

Associate Professor, Department of Statistics, University of California, Irvine, 7/03 – 6/05.

Associate Professor, Department of Statistics, Harvard University, 7/00 – 6/03.

Assistant Professor, Department of Statistics, Harvard University, 7/96 – 6/00.

Assistant Professor, Department of Mathematics, Kalamazoo College, 9/95 – 6/96.

HONORS AND AWARDS

Founders Award, American Statistical Association, July 2019.

Elected Fellow of the International Astrostatistics Association, April 2016.

Wolfson Merit Award, August 2011 - July 2016.

Elected Fellow of the Institute of Mathematical Statistics, August 2010.

Bren School of Information and Computer Sciences Dean's Award for Excellence in Mid-Career Research, March 2010.

Bren School of Information and Computer Sciences Dean's Award for Service, March 2008.

Elected Fellow of the American Statistical Association, August 2006.

Research Fellow, SAMSI Program on Astrostatistics, Research Triangle Park, North Carolina, 1/06 – 6/06.

Invited Presenter at Case Studies in Bayesian Statistics VII, Pittsburgh, PA, September 2003.

Invited Speaker in a session to honor the best contributions to the *Journal of Computational and Graphical Statistics* at *Interface 2000*, New Orleans, LA, April 2000.

Invited to read before the Royal Statistical Society Research Section, London, December 1996.

Named the Kalamazoo College MacArthur Scholar, 9/95 – 8/96.

U.S. Department of Education National Needs Fellow, 9/91 – 6/95 and McCormick Fellow, 9/91 – 6/94.

1. National Science Foundation (US) and Engineering and Engineering and Physical Sciences Research Council (UK), UK Principal Investigator, *DMS-EPSRC Collaborative Research: Advancing Statistical Foundations and Frontiers from and for Emerging Astronomical Data Challenges*, EP/W015080/1, DMS-2113615, DMS-2113397, and DMS-2113605 for £336,000 + $600,000, 7/21 – 3/25.

2. European Commission (Marie Sklodowska-Curie Research and Innovation Staff Exchange), Principal Investigator at Imperial College, *Development of Novel Statistical Tools for the Analysis of Astronomical Data II*, H2020-MSCA-RISE-2019-873089 for €556,600, 3/20 – 6/25 (Covid19-related extension).

3. National Aeronautics and Space Administration (US), Co-Investigator, *Enhanced Science from Future X-ray Missions: Overcoming X-ray Data Analysis s Challenges*, APRA Grant 80-NSSC21-K0285 for $696,000, 18/01/21 – 07/01/24.

4. Engineering and Physical Sciences Research Council (UK), Principal Investigator, *Mathematics Research Associates and Doctoral Training Programme 2020 – 21*, EP/W522673/1, EP/V520238/1, and EP/W523872/1 for £2,091.346, 09/21 – 10/25.

5. Chandra X-ray Center (US), Co-Investigator, *The X-ray Hot Spots of SN 1987A*, Proposal 20500446, initially for $50,000, 9/19 – 8/21.

6. National Science Foundation (US), Consultant, *Collaborative Research: Highly Principled Data Science for Multi-Domain Astronomical Measurements and Analysis*, DMS-18-11308, DMS-18-11083, and DMS-18-11661 for $360,000, 7/18 – 6/21.

7. National Science Foundation (US), Collaborator, *The Gaia Satellite, White Dwarf Stars, and the Age of the Galaxy*, AST-17-15718, for $215,790, 7/17 – 6/20.

8. Science and Technology Facilities Council (UK), Co-Investigator, *Imperial College Astrophysics Consolidated Grant* , ST-N000838-1 for £2.5M, 04/16 – 03/19. (Subproject: *Accurate Cosmological Distance Determination with Type Ia Supernovae* for £23,917.)

9. European Commission (Marie Sklodowska-Curie Research and Innovation Staff Exchange), Principal Investigator at Imperial College, *Development of Novel Statistical Tools for the Analysis of Astronomical Data*, H2020-MSCA-RISE-2015-691164 for €526,500, 1/16 - 12/19.

10. National Science Foundation (US), Consultant, *Collaborative Research: Principled Science-Driven Methods for Massive, Intricate, and Multifaceted Data in Astronomy and Astrophysics*, DMS-15-13484, DMS-15-13546, and DMS-15-13492 for $250,000, 7/15 – 6/18.

11. Contract with Stockholm University (Sweden), *Statistical Matters in the Search for Dark Matter*, for £63,000, 10/14 – 9/18.

12. European Commission (Marie-Curie Career Integration Grant), Principal Investigator, *New MCMC-enabled Bayesian Statistical Methods for Complex Data and Computer Models in Astronomy*, PCIG11-GA-2012-321865 for €100,000, 04/13 – 03/17.

13. National Science Foundation (US), Consultant, *Collaborative Research: Advanced Statistical and Computational Methods for Emerging Challenges in Astronomy and Astrophysics*, DMS-12-08791 and DMS-12-09232 for $400,000, 7/12 – 6/15.

14. Science and Technology Facilities Council (UK), Co-Investigator, *Imperial College Astrophysics Consolidated Grant* ST-J001368-1 for £463,376, 04/12 – 03/14. (Subproject: *High-Precision Measurements of Fundamental Astrophysical and Cosmological Quantities* for £60,920.)

15. The Royal Society (UK), Wolfson Merit Award Recipient, *Embedding Computer Models into Coherent Statistical Analyses in Astronomy*, WM110023 for £57,050, 08/11 – 07/16.

16. National Aeronautics and Space Administration (US), Co-Investigator, *New Leverage on Stellar Evolution: NASA Archives and Bayes* NASA-10-ADAP10-0076 for $391,574, 1/11 – 5/15.

17. National Science Foundation (US), Principal Investigator at Lead Institution, *Collaborative Research: New MCMC-Enabled Bayesian Methods for Complex Data and Computer Models Applied in Astronomy* DMS-09-07522 and DMS-09-07185 for $853,426, 7/09 – 6/13.

18. National Aeronautics and Space Administration (US), Co-Investigator, *Developing Methods to Incorporate Calibration Uncertainties in Data Analysis* NASA AISRP-NNG06GF17G for $300,000, 7/06 – 6/09.

19. US Department of Education–Institute for Education Sciences (US), Co-Investigator, *The Pathway Project: A Cognitive Strategies Approach to Reading and Writing Instruction for Teachers of ELLs*, for $2,942,841, 06/06 – 05/11.
20. National Science Foundation (US), Principal Investigator at Lead Institution, *Collaborative Research: Generalized Propensity Score Methods* SES-05-50980, SES-05-50873, and SES-05-50887 for $460,000, 4/06 – 3/11.
21. National Science Foundation (US), Principal Investigator at Lead Institution, *Collaborative Research: Highly Structured Models and Statistical Computation in High Energy Astrophysics*, DMS-04-06085 and DMS-04-05953 for $593,538, 8/04 – 7/08.
22. National Science Foundation (US), Principal Investigator, *Efficient Computation in Multilevel Models*, DMS-04-38240 for $452,914, 7/01 – 6/05.
23. The Chandra X-ray Center and NASA grant NAS8-39073 (US), contracts to support statistics graduate students in *CHASC Astrostatistics Center* for $153,093, 7/98–7/04.
24. National Science Foundation (US), Co-Principal Investigator *Inference and Computation in Multi-Level Models*, DMS-97-05157 for $241,332, 7/97 – 6/00.

RESEARCH SUPPORT
(UNDER $50,000)

25. Statistical and Applied Mathematical Sciences Institute (SAMSI, US), Research Fellow, travel funds $5,250, 08/16 – 05/17.
26. Engineering and Physical Sciences Research Council (UK), Principal Investigator, visiting scholar funds, £4,700 (via platform grant), 06/15 – 09/15.
27. International Space Science Institute (ISSI, Switzerland), Team Member, funding for a series of workshops at the ISSI in Switzerland, CHF25,000, 7/14 – 6/17.
28. Engineering and Physical Sciences Research Council (UK), Co-Investigator, workshop funds, £9,300 (via platform grant), 07/13 – 12/14.
29. Imperial College Trust, Co-Investigator, workshop and travel funds £16,200, 10/12 – 11/15.
30. Engineering and Physical Sciences Research Council (UK),
    Principal Investigator, workshop funds, £11,960 including £2,000 in departmental contributions, 04/12 – 03/13.
31. Statistical and Applied Mathematical Sciences Institute (SAMSI, US), Research Fellow, travel funds $6,200, 01/06 – 03/06.
32. Ted & Janice Smith ICS Endowment at UC Irvine, seed funding, $5,000, 7/04 – 6/05.
33. Clark and Cooke Funds at Harvard University, travel funds, $5,995, 01/01 – 12/02.

EDITORIAL SERVICE

Journal of Computational and Graphical Statistics, Associate Editor, 9/00 – 4/06 and 4/11 – present.

Journal of the American Statistical Association and The American Statistician, Reviews, Editor-Elect, 7/13 –12/13; Editor, 1/14 – 12/16.

Springer Series in Astrostatistics, Member of Editorial Board, 02/11 – 12/16.

Journal of the American Statistical Association, Theory & Methods, Associate Editor, 6/12 – 12/13.

Neural Information Processing Systems (NIPS) Foundation, Conference Referee, 2010.

Journal of Computational and Graphical Statistics, Editor-Elect, 5/06 –12/06; Editor, 1/07 – 12/09; Past-Editor, 1/10 – 3/11.

Statistical Science, Guest Co-Editor (with X. L. Meng) of Special Issue Commemorating the 30th Anniversary of the EM Algorithm, 1/07 –12/09.

Journal of Machine Learning Research Workshop and Conference Proceedings, Guest Co-Editor (with M. Welling) of Issue for The Twelfth International Conference on Artificial Intelligence and Statistics, Volume 5, 2009.

Statistica Sinica, Associate Editor, 9/05 – 4/10.

Journal of the American Statistical Association, Applications & Case Studies, Associate Editor, 2/04 – 6/06.

National Science Foundation, Member of Review Panel (*Division of Mathematical Sciences: Statistics*), May 2005 and January 2007.

Reviewed hundreds of articles, grant proposals, and books for *The American Statistician*, *The Annals of Statistics*, *The Astronomical Journal*, *The Astrophysical Journal*, *Bernoulli*, *Bayesian Analysis*, *Biometrics*, *Biometrika*, Engineering and Physical Sciences Research Council (UK), *IEEE Transactions on Signal Processing*, *Journal of the American Statistical Association*, *Journal of Business and Economic Statistics*, *Journal of Computational and Graphical Statistics*, *Journal of Econometrics*, *Journal of Economic Surveys*, *Journal of Multivariate Analysis*, *Journal of the Royal Statistical Society, Series A, B, and C*, *Journal of Statistical Computation and Simulation*, *Journal of Statistical Methodology*, The National Science Foundation, Neural Information Processing Systems Conferences, The NSA Mathematical Sciences Program, *Psychometrika*, *Science*, *Statistical Analysis and Data Mining*, *Statistical Science*, *Statistica Sinica*, *Technometrics*, etc.

SCHOLARLY
OFFICES AND
EXTERNAL
COMMITTEES

PhyStat Committee, Member, 2022-.

Chair (elected), Section on Bayesian Statistical Science, American Statistical Association, 2022 (Chair Elect), 2023 (Chair), 2024 (Past Chair).

Member of Advisory Board of NSF Research Training (NRT) program, *Data Science in Multi-Messenger Astrophysics* at the University of Minnesota, 2021-2025.

Member of Imperial College London Mathematics School Steering Committee, 2020-.

Member of IAA Council Nominations Committee, International Astrostatistics Association, 2020.

Chair of ASA Committee to Select JASA/TAS Reviews Editor, 2018.

Member of IMS Council Nominations Committee, Institute of Mathematical Statistics, 2018.

Member of Council of Sections Nominations Committee, American Statistical Association, 2018 – 2019.

Council of Sections Representative (elected), Section on Statistical Computing, American Statistical Association, 2018 – 2020.

Caucus of Academic Representatives, American Statistical Association, 2010 - 2012, 2017 – present.

Section on Data Science, Royal Statistical Society, Appointed Member, 2017.

Chair (elected), Section on Computation, International Society for Bayesian Analysis, 2016 – 2017 (Chair Elect), 2018 – 2019 (Chair).

Board of Directors (Publications Representative, elected), American Statistical Association, 2015 – 2017.

Member Ex-Officio of the Management Committees of Journal of Computational and Graphical Statistics, Current Index to Statistics, Journal of Agricultural, Biological, and Environmental Statistics, Technometrics, and Journal of Educational and Behavioral Statistics, 2015 – 2017.

Member of the ASA Strategic Plan Review Committee, of the ASA Founders Award Committee, and of the ASA Committee on Publications, 2015 – 2017.

ASA Committee to Select JASA/TAS Reviews Editor, 2015.

Steering Committee, Interest Group on Astrostatistics, American Statist Assoc., 2014 – 2018.

Council Member, International Astrostatistics Association, 2012 – 2017.

Program Chair (elected), Section on Computation, International Society for Bayesian Analysis, 2014 – 2015.

Chair (elected), Section on Statistical Computing, American Statistical Association, 2014 (Chair Elect), 2015 (Chair), 2016 (Past Chair).

International Society for Bayesian Analysis, Mitchell Prize Committee, 2011.

Program Chair (elected), Section on Statistical Learning and Data Mining, American Statistical Association, 2011 (Chair Elect), 2012 (Chair), 2013 (Past Chair).

Board of Directors (elected), International Society for Bayesian Analysis, 2009 – 2011.

Executive Board, Astrostatistics Committee of the International Statistical Institute, 12/09 – 08/12.

Workgroup on the Future of Electronic Publication, American Statistical Association, 04/09 – 08/09.

Program Chair (elected), Section on Bayesian Statistical Science, American Statistical Association, 2007 (Chair Elect), 2008 (Chair), 2009 (Past Chair).

Management Committee of the *Journal of Computational and Graphical Statistics*, a joint committee of the American Statistical Association, the Institute for Mathematical Statistics, and the Interface Foundation, 2007 – 2009.

Section of Bayesian Statistical Sciences of the American Statistical Association Student Paper Competition Selection Committee, Chair, 2007.

<div style="float:left">CONFERENCE
ORGANIZATION</div>

Statistical Challenges in Modern Astronomy VIII, State College, Pennsylvania, June 2023, Scientific Organizing Committee.

11th International Conference of the ERCIM WG on Computational and Methodological Statistics, Pisa, Italy, December, 2018, Scientific Program Committee.

10th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK, December, 2017, Scientific Program Committee.

RISE Workshop on the Development of Novel Statistical Tools for the Analysis of Astronomical Data, Heraklion, Greece, June 2017, Scientific Organizing Committee.

9th International Conference of the ERCIM WG on Computational and Methodological Statistics, Seville, Spain, December, 2016, Scientific Program Committee.

Phystat-Nu Fermilab, Chicago, Illinois, September 2016, Scientific Organizing Committee.

Statistical Challenges in Modern Astronomy VI, Pittsburgh, Pennsylvania, June 2016, Scientific Organizing Committee.

PhyStat-ν Workshop on Statistical Issues in Experimental Neutrino Physics, Tokyo, Japan, May 2016, Scientific Organizing Committee.

Bayesian Computing at MCMSki, Lenzerheide, Switzerland, January 2016, Scientific Organizing Committee.

8th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK, December, 2015, Scientific Program Committee.

SuSTaIn EdgeCutter One Day Workshop on Astrostatistics, London, UK, December 2014, Scientific Organizing Committee.

Twelfth World Meetings of the International Society for Bayesian Analysis, Cancun, Mexico, July 2014, Scientific Organizing Committee.

Imperial Workshop on Workhorse Computational Methods for Massive/Complex Data, Imperial College, London, UK, June 2014, Scientific Organizing Committee.

Workshop on Statistical Challenges from Large Datasets in Cosmology and Particle Physics, Banff International Research Station, Banff, Canada, March, 2013, Scientific Organizing Committee.

California-Harvard AstroStatistics Collaboration Workshop, Imperial College, London, UK, August 2012, Scientific Organizing Committee, Chair.

Imperial Centre for Inference and Cosmology Inaugural Workshop, Imperial College, London, UK, August 2012, Scientific Organizing Committee, Chair.

Workshop on Statistical Issues in Searches, SLAC, Palo Alto, California, June 2012, Scientific Organizing Committee.

2012 Joint Statistical Meetings, San Diego, California, July 2012, Program Committee.

Statistical Challenges in Modern Astronomy V, State College, Pennsylvania, June 2011, Scientific Organizing Committee.

Workshop on Computational AstroStatistics: Challenges and Methods for Massive Astronomical Data, Cambridge, Massachusetts, August 2010, Scientific Organizing Committee, Chair.

41st Symposium on the Interface: Computing Sciences and Statistics, Seattle, Washington, May 2010, Program Committee.

Twelfth International Conference on Artificial Intelligence and Statistics, Clearwater, Florida, April 2009, Conference Co-Chair.

2008 Joint Statistical Meetings, Denver, Colorado, August 2008, Program Committee.

40th Symposium on the Interface: Computing Sciences and Statistics, Durham, North Carolina, May 2008, Program Committee.

39th Symposium on the Interface: Computing Sciences and Statistics, Philadelphia, Pennsylvania, May 2007, Program Committee.

SAMSI: Program on Astrostatistics, Research Triangle Park, North Carolina, 1/06- 6/06, Planning Committee and Research Fellow.

IPAM Conference: Mathematical Challenges in Astronomical Imaging, Los Angeles, California, January 2004, Scientific Organizing Committee.

Workshop on Current Challenges in Multi-Scale Deconvolution Methods, Cambridge, Massachusetts, January 2003, Scientific Organizing Committee.

Statistical Challenges in Modern Astronomy III, State College, Pennsylvania, July 2001, Scientific Organizing Committee.

Organized Technical Sessions at The International Conference on Computational and Methodological Statistics in London (2015, 2017) and Seville, Spain (2016); International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing in Stanford, California (2016); The International Chinese Statistical Association Conference in Hong Kong (two sessions, 2013); The Joint Statistics Meetings in Baltimore, Maryland (1999), Indianapolis, Indiana (2000), New York, New York (2002), San Francisco, California (2003), Salt Lake City, Utah (2 sessions, 2007), Denver, Colorado (2 sessions, 2008), Washington DC (2009), Vancouver, British Columbia (2010), San Diego, California (2012), Boston, Massachusetts (2014) and Chicago, Illinois (2016); MCMSki IV in Chamonix Mont-Blanc, France (2014); at The Meeting of the Institute for Mathematical Statistics in Fairbanks, Alaska (2005); at Interface Symposiums in Chicago, Illinois (1999), Pasadena, California (2006), Philadelphia, Pennsylvania (2007), Durham, North Carolina (2008), Seattle, Washington (2010), and Orange, California (2013); and at The World Meetings of the International Society for Bayesian Analysis in Sardinia, Italy (2016).

Coordinates the *CHASC International Astrostatisics Center* which has organized sessions on statistical methods in astronomy at numerous astronomy meetings.

POSTDOCTORAL RESEARCHER SUPERVISING	1. Autenrieth, Maximilan (Sept 2023 –). Department of Mathematics, Imperial College London. 2. McKim, Hector (Oct 2022 –). Department of Mathematics, Imperial College London. 3. Donath, Axel (Oct 2021 –). Harvard Smithsonian Center for Astrophysics (joint with Aneta Siemiginowska and Vinay Kashyap). 4. Geringer-Sameth, Alex (Jan 2020 – Sept 2022). Department of Mathematics, Imperial College London. 5. Stenning, David (Sept 2017 – Jan 2020). Department of Mathematics, Imperial College London. 6. Lee, Hyunsook (Jan 2007 – Dec 2009). Harvard Smithsonian Center for Astrophysics (joint with Aneta Siemiginowska and Vinay Kashyap).
DOCTORAL THESIS ADVISING	*Primary or Sole PhD Supervisor for* 1. Li, J. (2027, expected), Department of Mathematics, Imperial College London. 2. Meyer, A. (2023, expected). Department of Mathematics, Imperial College London. 3. Autenrieth, M. (2023, expected). Statistics Section, Department of Mathematics, Imperial College London. 4. Yu, X. (2021). *Multistage Analysis in Astrostatistics*, DOI, Statistics Section, Department of Mathematics, Imperial College London. 5. Algeri, S. (2018). *Testing One Hypothesis Many Times*, DOI, Statistics Section, Department of Mathematics, Imperial College London (with Jan Conrad). 6. Stampoulis, V. (2018). *Bayesian Estimation of Luminosity Distributions and Model Based Classification of Astrophysical Sources*, DOI, Statistics Section, Department of Mathematics, Imperial College London. 7. Si, S. (2018). *Simple Two-stage Algorithms for fitting Hierarchies of Complex Models with Applications in Astrophysics*, DOI, Statistics Section, Department of Mathematics, Imperial College London.

8. Jiao, X. (2016). *Using Surrogate Distributions to Improve the Convergence Properties of Gibbs-type Samplers*, [DOI](), Statistics Section,Department of Mathematics, Imperial College London.

9. Stenning D. (2015). *Astrostatistical Analysis in Solar and Stellar Physics*, [download](), Department of Statistics, University of California, Irvine.

10. Zhao, S. (2014). *Causal Inference and Model Selection in Complex Settings*, [download](), Department of Statistics, University of California, Irvine.

11. Xu, J. (2014). *Accounting for Calibration Uncertainty in Detectors for High-Energy Astrophysics*, [download](), Department of Statistics, University of California, Irvine.

12. Park, T. (2006). *Inference and Efficient Computation for Highly Structured Models with Applications*, Department of Statistics, Harvard University.

13. Pedroza, C. (2002). *Bayesian Hierarchical Time Series Modeling of Mortality Rates*, Department of Statistics, Harvard University.

Secondary or Joint PhD Supervisor for

14. Sottosanti, A. (2019). *Advances in Mixture Modelling for Model-Based Clustering: Two Case Studies in Astronomy*, Department of Statistical Sciences, University of Padova (Primary supervisor: Mauro Bernardi).

15. Tak, H.. (2016). *Topics in Bayesian Hierarchical Modeling and its Monte Carlo Computations*, [download](), Department of Statistics, Harvard University (Primary supervisor: Xiao-Li Meng).

16. Jones, D. (2016). *Information: Measuring the Missing, Using the Observed, and Approximating the Complete*, [download](), Department of Statistics, Harvard University (Primary supervisor: Xiao-Li Meng).

17. Kang, H. (2005). *Markov Chain Monte Carlo Applications in Bioinformatics and Astrophysics*, Department of Statistics, Harvard University (Joint with Jun Liu).

18. Yu, Y., (2005). *Three Contributions to Statistical Computing*, Department of Statistics, Harvard University (Joint with Donald B. Rubin and Xiao-Li Meng).

19. Esch, D. (2003). *Applications and Extensions of Three Statistical Models*, Department of Statistics, Harvard University (Joint with Carl Morris).

20. Imai, K. (2003). *Statistical Analysis of Field Experiments*, Department of Government, Harvard University (Joint with Gary King).

21. Protassov, R. (2002). *An Application of Missing Data Methods: Testing for the Presence of a Spectral Line in Astronomy and Parameter Estimation of the Generalized Hyperbolic Distribution*, Department of Statistics, Harvard University (Joint with Art Dempster).

22. Tang, R. (2002). *Fitting and Evaluating Certain Two-Level Hierarchical Models*, Department of Statistics, Harvard University (Joint with Carl Morris).

PhD Project Advisor or Co-Advisor for

23. Campos, L. (2019). *Fortunes and Misadventures with Parametric Models: They Can Be Confounding, Burdensome and Unstable, Yet Insightful, Powerful and Flexible*, [download](), Department of Statistics, Harvard University (PhD Supervisor: Luke Miratrix).

24. Wang, L. (2015). *Methods in Monte Carlo Computation, Astrophysical Data Analysis and Hypothesis Testing With Multiply-Imputed Data*, [download](), Department of Statistics, Harvard University (PhD Supervisor: Xiao-Li Meng).

25. Wong, R. (2014). *On some Complex and Massive Data Problems*, Department of Statistics, University of California, Davis (PhD Supervisor: Thomas Lee),

26. Stein, N. (2013). *Combining Computer Models to Account for Mass Loss in Stellar Evolution.* Department of Statistics, Harvard University (PhD Supervisor: Xiao-Li Meng).

27. DeGennaro, S. (2009). *White Dwarfs and the Ages of Stellar Populations*, Department of Astronomy, University of Texas, Austin (PhD Supervisor: Ted von Hippel).

1. Sottosanti, A. Bernardi, M., Brazzale, A. R., Geringer-Sameth, A., Stenning, D. C., Trotta, R., and van Dyk, D. A. (2023+). Identification of High-Energy Astrophysical Point Sources via Hierarchical Bayesian Nonparametric Clustering. *Annals of Applied Statistics*, under revision. arXiv.

2. Autenrieth, M., van Dyk, D. A., Trotta, R., and Stenning D. (2023). Stratified Learning: A General-Purpose Statistical Method for Improved Learning Under Covariate Shift. *Statistical Analysis and Data Mining – The ASA Data Science Journal*, 1–16. DOI; arXiv.

3. Meyer, A. D., van Dyk, D. A., Tak, H., and Siemiginowska, A. (2023). TD-CARMA: Painless, Accurate, and Scalable Estimates of Gravitational-Lens Time Delays with Flexible CARMA Processes. *The Astrophysical Journal*, **950**, 37 (20 pages). DOI; arXiv.

4. Fan, M., Wang, J., Kashyap, V. L., Lee, T. C. M., van Dyk, D. A., and Zezas, A. (2023). Identifying Diffuse Spatial Structures in High-Energy Photon Lists. *The Astronomical Journal*, **165**, 66 (15 pages). DOI; arXiv.

5. Rahman, W.,Trotta, R., Boruah, S. S., Hudson, M. J., and van Dyk, D. A. (2022). New Constraints on Anisotropic Expansion from Supernovae Type Ia. *Monthly Notices of the Royal Astronomical Society*, **514**, 139–163. DOI; arXiv.

6. Jeong, S., Park, T, van Dyk, D. A. (2022). Bayesian Model Selection in Additive Partial Linear Models via Locally Adaptive Splines. *Journal of the Computational and Graphical Statistics*, **31**, 324–336. DOI; Spiral.

7. Moss, A., von Hippel, T., Robinson, E., El-Badry, K., Stenning, D. C., van Dyk, D. A., Fouesneau, M., Bailer-Jones, C. A. L., Jeffery, E., Sargent, J., Kloc, I., and Moticska, N. (2022). Improving White Dwarfs as Chronometers with Gaia Parallaxes and Spectroscopic Metallicities. *The Astrophysical Journal*, **929**, 26 (11 pages). DOI; arXiv.

8. Marshall, H. L, Chen, Y., Drake, J. J., Guainazzi, M., Kashyap, V. L., Meng, X.-L., Plucinsky, P. P., Ratzlaff, P., van Dyk, D. A., and Wang, X. (2021). Concordance: In-Flight Calibration of X-ray Telescopes without Absolute References. *The Astronomical Journal*, **162**, 254 (16 pages). DOI; arXiv.

9. Meyer, A. D., van Dyk, D. A., Kashyap, V. L., Campos, L. G., and Jones, D. E. (2021). eBASCS: Disentangling Overlapping Astronomical Sources II, using Spatial, Spectral, and Temporal Information. *Monthly Notices of the Royal Astronomical Society*, **506**, 6160–6180. DOI; Spiral.

10. Algeri, S. and van Dyk, D. A. (2021). Testing One Hypothesis Multiple Times. *Statistica Sinica*, **31**, 959–979. DOI; Download; arXiv.

11. Zhao, S., van Dyk, D. A., Imai, K. (2020). Propensity-Score Based Methods for Causal Inference in Observational Studies with Non-Binary Treatments. *Statistical Methods in Medical Research*, **29**, 709-727. DOI; arXiv (preliminary version).

12. Algeri, S. and van Dyk, D. A. (2020). Testing One Hypothesis Multiple Times: The Multidimensional Case. *Journal of Computational and Graphical Statistics*, **29**, 358–371. DOI; arXiv.

13. Chen, Y., Meng, X.-L., Wang, X., van Dyk, D. A., Marshall, H., and Kashyap, V. L. (2019). Calibration Concordance for Astronomical Instruments via Multiplicative Shrinkage. *Journal of the American Statistical Association*, **114**, 1018–1037. DOI; arXiv.

14. Stampoulis, V., van Dyk, D. A., Kashyap, V. L., and Zezas, A. (2019). Multidimensional Data-Driven Classification of Emission-Line Galaxies. *Monthly Notices of the Royal Astronomical Society*, **485**, 1085–1102. DOI; arXiv.

15. Hill, R., Shariff, H., Trotta, R., Ali-Khan, S., Jiao, X., Liu, Y., Moon, S.-K., Parker, W., Paulus, M., van Dyk, D. A., and Lucy, L. B. (2018). Projected Distances to Host Galaxy Reduce SNIa Dispersion. *Monthly Notices of the Royal Astronomical Society*, **481**, 2766–2777. DOI; arXiv.

16. Yu, X., Del Zanna, G., Stenning, D. C., Cisewski-Kehe, J., Kashyap, V. L., Stein, N., van Dyk, D. A., Warren, H. P., Weber, M. A. (2018). Incorporating Uncertainties in Atomic Data Into the Analysis of Solar and Stellar Observations: A Case Study in Fe XIII. *The Astrophysical Journal*, **866**, 146 (20 pages). DOI; arXiv.

17. Tak, H., Meng, X.-L., and van Dyk, D. A. (2018). A Repelling-Attracting Metropolis Algorithm for Multimodality. *Journal of Computational and Graphical Statistics*, **27**, 479–490. DOI; arXiv.

18. Si, S., van Dyk, D. A., von Hippel, T., Robinson, E., Jeffery, E., and Stenning D. (2018). Bayesian Hierarchical Modelling of Initial–Final Mass Relations Across Star Clusters. *Monthly Notices of the Royal Astronomical Society*, **480**, 1300–1321. DOI; arXiv.

19. Revsbech, E. A., Trotta, R., and van Dyk, D. A. (2018). STACCATO: A Novel Solution to Supernova Photometric Classification with Biased Training Samples. *Monthly Notices of the Royal Astronomical Society*, **473**, 3969–3986. DOI; Download; arXiv.

20. Tak, H., Mandel, K., van Dyk, D. A. Kashyap, V. L., Meng, X.-L., and Siemiginowska, A. (2017). Bayesian Estimates of Astronomical Time Delays Between Gravitationally Lensed Stochastic Light Curves. *Annals of Applied Statistics*, **11**, 1309–1348. DOI; Download; arXiv.

21. Si, S., van Dyk, D. A., von Hippel, T., Robinson, E., Webster, A., and Stenning, D. (2017). A Hierarchical Model for the Ages of Galactic Halo White Dwarfs. *Monthly Notices of the Royal Astronomical Society*, **468**, 4374 – 4388. DOI; Download; arXiv.

22. Wagner-Kaiser, R., Sarajedini, A., von Hippel, T., Stenning, D. C., van Dyk, D. A., Jeffery, E., Robinson, E., Stein, N., Anderson, J., and Jefferys, W.H. (2017). The ACS Survey of Galactic Globular Clusters XIV: Bayesian Single-Population Analysis of 69 Globular Clusters. *Monthly Notices of the Royal Astronomical Society*, **468**, 1038–1055. DOI; arXiv.

23. McKeough, K., Siemiginowska, A., Cheung, C. C., Stawarz, L., Kashyap, V. L., Stein, N., Stampoulis, V., van Dyk, D. A., Wardle, J. F. C., Lee, N. P., Harris, D. E., Schwartz, D. A., Donato, D., Maraschi, L., and Tavecchio, F. (2016). Detecting Relativistic X-ray Jets in High-Redshift Quasars. *The Astrophysical Journal*, **833**, 123 (21 pages). DOI; Download; arXiv.

24. Algeri, S., van Dyk, D. A., Conrad, J., and Anderson, B. (2016). On Methods for Correcting for the Look-Elsewhere Effect in Searches for New Physics. *Journal of Instrumentation*, **11**, P12010. DOI; Download; arXiv.

25. Wagner-Kaiser, R., Stenning, D., Sarajedini, A., von Hippel, T., van Dyk, D. A., Robinson, E., Stein, N. M., and Jefferys, W.H. (2016). Bayesian Analysis of Two Stellar Populations in Galactic Globular Clusters III: Analysis of 30 Clusters. *Monthly Notices of the Royal Astronomical Society*, **463**, 3768–3782. DOI; Download; arXiv.

26. Shariff, H., Dhawan, S., Jiao, X., Leibundgut, B., Trotta, R., and van Dyk, D. A. (2016). Standardizing Type Ia Supernovae Using Near Infrared Rebrightening Timing. *Monthly Notices of the Royal Astronomical Society*, **463**, 4311–4316. DOI; Download; arXiv.

27. Wong, R. K. W., Kashyap, V. L., Lee, T. C. M., and van Dyk, D. A. (2016). Detecting Abrupt Changes in the Spectra of High-Energy Astrophysical Sources. *Annals of Applied Statistics*, **10**, 1107–1134. DOI; Download; arXiv.

28. Jeffery, E. J., von Hippel, T., van Dyk, D. A., Stein, N. M., Robinson, E., and Jefferys, W. H. (2016). A Bayesian Analysis of the Ages of Four Open Clusters. *The Astrophysical Journal*, **828**, 79 (13 pages). DOI; Download; arXiv.

29. Stenning, D., Wagner-Kaiser, R., Robinson, E., van Dyk, D. A., von Hippel, T., Sarajedini, A., and Stein, N. M. (2016). Bayesian Analysis of Two Stellar Populations in Galactic Globular Clusters I: Statistical and Computational Methods. *The Astrophysical Journal*, **826**, 41 (16 pages). DOI; Download; arXiv.

30. Stein, N. M., van Dyk, D. A., and Kashyap, V. L. (2016). Preprocessing Solar Images while Preserving their Latent Structure. *Statistics and Its Interface*, **826**, 535–551. DOI; Download; arXiv.

31. Shariff, H., Jiao, X., Trotta, R., and van Dyk, D. A. (2016). BAHAMAS: New SNIa Analysis Reveals Inconsistencies with Standard Cosmology. *The Astrophysical Journal*, **827**, 1 (25 pages). DOI; Download; arXiv.

32. Wagner-Kaiser, R., Stenning, D., Robinson, E., von Hippel, T., Sarajedini, A., van Dyk, D. A., Stein, N. M., and Jefferys, W.H. (2016). Bayesian Analysis of Two Stellar Populations in Galactic Globular Clusters II: NGC 5024, NGC 5272, and NGC 6352. *The Astrophysical Journal*, **826**, 42 (21 pages). DOI; Download; arXiv.

33. Algeri, S., Conrad, J., and van Dyk, D. A. (2016). Comparing Non-Nested Models in the Search for New Physics. *Monthly Notices of the Royal Astronomical Society: Letters*, **458** **(1)**, L84–L88. DOI; arXiv.

34. Stein, N. M., van Dyk, D. A., Kashyap, V. L., and Siemiginowska, A. (2015). Detecting Unspecified Structure in Low-Count Images. *The Astrophysical Journal*, **813**, 66 (15 pages). DOI; Download; arXiv.

35. Jones, D. E., Kashyap, V. L., and van Dyk, D. A. (2015). Disentangling Overlapping Astronomical Sources using Spatial and Spectral Information. *The Astrophysical Journal*, **808**, 137 (24 pages). DOI; Download; arXiv.

36. Liao, K., Treu, T., Marshall, P., Fassnacht, C. D., Rumbaugh, N., Dobler, G., Aghamousa, A., Bonvin, V., Courbin, F., Hojjati, A., Jackson, N., Kashyap, V., Kumar, S. R., Linder, E., Mandel, K., Meng, X.-L., Meylan, G., Moustakas, L. A., Prabhu, T. P., Romero-Wolf, A., Shafieloo, A., Siemiginowska, A., Stalin, C. S., Tak, H., Tewes, M., and van Dyk, D. A. (2015). Strong Lens Time Delay Challenge: II. Results of TDC1. *The Astrophysical Journal*, **800**, 11 (23 pages). DOI; Download; arXiv.

37. van Dyk, D. A. and Jiao, X. (2015). Metropolis Hastings within Partially Collapsed Gibbs Samplers. *Journal of Computational and Graphical Statistics*, **24**, 301–327. DOI; Download; arXiv.

38. Xu, J., van Dyk, D. A., Kashyap, V. L., Siemiginowska, A., Connors, A., Drake, J. J., Meng, X. L., Ratzlaff, P., and Yu, Y. (2014). A Fully Bayesian Method to Jointly Fit Calibration and X-ray Spectral Models. *The Astrophysical Journal*, **794**, 97 (21 pages). DOI; Download.

39. van Dyk, D. A. (2014). The Role of Statistics in the Discovery of a Higgs Boson. *Annual Review of Statistics and Its Application*, **1**, 41–59. (DOI: 10.1146/annurev-statistics-062713-085841). DOI; Download.

40. O'Malley, E. M., von Hippel, T., and van Dyk, D. A. (2013). A Bayesian Approach to Deriving Ages of Individual Field White Dwarfs. *The Astrophysical Journal*, **775**, 1 (11 pages). DOI; Download; arXiv.

41. Stenning, D. C., Lee, T. C. M, van Dyk, D. A., Kashyap, V. L., Sandell, J., and Young, C. A. (2013). Morphological Feature Extraction for Statistical Learning with Applications to Solar Images Data. *Statistical Analysis and Data Mining*, **6**, 329–345. DOI; Download.

42. Stein, N. M., van Dyk, D. A., von Hippel, T. , DeGennaro, S., Jeffrey, E. J., and Jefferys, W. H. (2013). Combining Computer Models to Account for Mass Loss in Stellar Evolution. *Statistical Analysis and Data Mining*, **6**, 34–52. DOI; Download.

43. Yu, Y., Kashyap, V. L, van Dyk, D. A., and Young, A. (2012). A Bayesian Analysis of the Correlations Among Sunspot Cycles. *Solar Physics*, **281(2)**, 847–862. DOI; Download; arXiv.

44. Olson, C. B., Kim, J. S., Scarcella, R., Kramer, J., Pearson, M., van Dyk, D. A., Collins, P., and Land, R. E. (2012). Enhancing the Interpretive Reading and Analytical Writing of Mainstreamed English Learners in Secondary School: Results From a Randomized Field Trial Using a Cognitive Strategies Approach. *American Educational Research Journal*, **49**, 323–355. DOI; Download.

45. Lee, H., Kashyap, V. L., van Dyk, D. A., Connors, A., Drake, J. J., Izem, R., Meng, X. L., Min, S., Park, T., Ratzlaff, P., Siemiginowska, A., and Zezas, A. (2011). Accounting for Calibration Uncertainties in X-ray Analysis: Effective Areas in Spectral Fitting. *The Astrophysical Journal*, **731**, 126–144. DOI; Download; arXiv.

46. Jeffery, E., von Hippel, T., DeGennaro, S., van Dyk, D. A., Stein, N., and Jefferys, W. H. (2011). The White Dwarf Age of NGC 2477. *Astrophysical Journal*, **730**, 35–44. DOI; Download; arXiv.

47. Kim, J., Olson, C., Kramer, J., Pearson, M., van Dyk, D. A., Collins, P., Land, R., and Scarcella, R. (2011). A Randomized Experiment of a Cognitive Strategies Approach to Text-Based Analytical Writing for Mainstreamed Latino English Language Learners in Grades 6-12. *Journal of Research on Educational Effectiveness*, **4**, 231–263. DOI; Download.

48. Kashyap, V. L., van Dyk, D. A., Connors, A., Freeman, P. E., Siemiginowska, A., Xu, J., and Zezas, A. (2010). On Computing Upper Limits to Source Intensities. *Astrophysical Journal*, **719**, 900–914. DOI; Download; arXiv.

49. van Dyk, D. A. and Meng, X. L. (2010). Cross-Fertilizing Strategies for Better EM Mountain Climbing and DA Field Exploration: A Graphical Guide Book. *Statistical Science*, **25**, 429–449. DOI; Download; arXiv.

50. van Dyk, D. A. (2010). Marginal Markov Chain Monte Carlo Methods. *Statistica Sinica*, **20**, 1423–1454. Download.

51. Park, T. and van Dyk, D. A. (2009). Partially Collapsed Gibbs Samplers: Illustrations and Applications. *Journal of Computational and Graphical Statistics*, **18**, 283–305. DOI; Download.

52. van Dyk, D. A., DeGennaro, S., Stein, N., Jefferys, W. H., and von Hippel, T. (2009). Statistical Analysis of Stellar Evolution. *The Annals of Applied Statistics*, **3**, 117–143. DOI; Download; Supplement; arXiv.

53. DeGennaro, S., von Hippel, T., Jefferys, W. H., Stein, N., van Dyk, D. A., and Jeffery, E. (2009). Inverting Color-Magnitude Diagrams to Access Precise Star Cluster Parameters: A New White Dwarf Age for the Hyades. *The Astrophysical Journal*, **696**, 12–23. DOI; Download.

54. Park, T., van Dyk, D. A., and Siemiginowska, A. (2008). Searching for Narrow Emission Lines in X-ray Spectra: Computation and Methods. *The Astrophysical Journal*, **688**, 807–825. DOI; Download.

55. van Dyk, D. A. and Park, T. (2008). Partially Collapsed Gibbs Samplers: Theory and Methods. *Journal of the American Statistical Association*, **103**, 790–796. DOI; Download.

56. Gelman, A., van Dyk, D. A., Huang, Z., and Boscardin, W. J. (2008). Using redundant parameterizations to fit hierarchical models. *The Journal of Computational and Graphical Statistics*, **17**, 95–122. DOI; Download.

57. Park, T., Kashyap, V. L., Siemiginowska, A., van Dyk, D. A., Zezas, A. Heinke, C. and Wargelin, B. J. (2006). Bayesian Analysis of Hardness Ratios: Modeling and Computations. *The Astrophysical Journal*, **652**, 610–628. DOI; Download; arXiv.

58. van Dyk, D. A., Connors, A., Esch, D. N., Freeman, P., Kang, H., Karovska, M., Kashyap, V., Siemiginowska, A., and Zezas, A. (2006). Deconvolution in High Energy Astrophysics: Science, Instrumentation, and Methods (with discussion). *Bayesian Analysis*, **1**, 189–236. DOI; Download; Rejoinder.

59. Imai, K. and van Dyk, D. A. (2005). MNP: R Package for Fitting the Multinomial Probit Model. *Journal of Statistical Software*, **14**, Issue 5. Download.

60. Imai, K. and van Dyk, D. A. (2005). A Bayesian Analysis of the Multinomial Probit Model Using Marginal Augmentation. *Journal of Econometrics*, **124,** 311–334. DOI; Download.

61. Imai, K. and van Dyk, D. A. (2004). Causal Inference with General Treatment Regimes: Generalizing the Propensity Score. *Journal of the American Statistical Association*, **99**, 854–866. DOI; Download.

62. van Dyk, D. A. and Kang, H. (2004). Highly Structured Hierarchical Models for Spectral Analysis in High Energy Astrophysics. Invited paper for special astrostatistics issue of *Statistical Science*, **19,** 275–293. DOI; Download.

63. Esch, D. N., Connors, A., Karovska, M., and van Dyk, D. A. (2004). An Image Reconstruction Technique with Error Estimates. *The Astrophysical Journal*, **610**, 1213–1227. DOI; Download.

64. Javaras, K. N. and van Dyk, D. A. (2003). Multiple Imputation for Incomplete Data with Semicontinuous Variables. *Journal of the American Statistical Association*, **98**, 703–715. DOI; Download.

65. van Dyk, D. A. and Tang, R. (2003). The One-Step-Late PXEM Algorithm. *Statistics and Computing*, **13**, 137–152. Download.

66. Protassov, R., van Dyk, D. A., Connors, A., Kashyap, V. L., and Siemiginowska, A. (2002). Statistics: Handle with Care, Detecting Multiple Model Components with the Likelihood Ratio Test. *The Astrophysical Journal*, **571**, 545–559. DOI; Download; arXiv.

67. van Dyk, D. A., Connors, A., Kashyap, V. L., and Siemiginowska, A.(2001). Analysis of Energy Spectrum with Low Photon Counts via Bayesian Posterior Simulation. *The Astrophysical Journal*, **548**, 224–243. DOI; Download; arXiv.

68. van Dyk, D. A. and Meng, X. L. (2001). The Art of Data Augmentation (with discussion). *The Journal of Computational and Graphical Statistics*, **10**, 1–81. DOI; Download; Rejoinder.

69. Foully, J.-L. and van Dyk, D. A. (2000). The PX-EM Algorithm for Fast Stable Fitting of Henderson's Mixed Model. *Genetics, Selection Evolution*, **32**, 143-163. DOI; Download.

70. van Dyk, D. A. (2000). Fitting Mixed-Effects Models Using Efficient EM-type Algorithms. *The Journal of Computational and Graphical Statistics*, **9**, 78–98. [DOI;](#) [Download.](#)

71. van Dyk, D. A. (2000). Nesting EM Algorithms for Computational Efficiency. *Statistica Sinica*, **10**, 203–225. [Download.](#)

72. Meng, X. L. and van Dyk, D. A. (1999). Seeking Efficient Data Augmentation Schemes Via Conditional and Marginal Augmentation. *Biometrika*, **86**, 301–320. [DOI;](#) [Download.](#)

73. Meng, X. L. and van Dyk, D. A. (1998). Fast EM Implementations for Mixed-Effects Models. *Journal of the Royal Statistical Society, Series B*, **60**, 559–578. [DOI;](#) [Download.](#)

74. Meng, X. L. and van Dyk, D. A. (1997). The EM Algorithm — An Old Folk Song Sung to a Fast New Tune (with discussion). *Journal of the Royal Statistical Society, Series B*, **59**, 511–540. [DOI;](#) [Download.](#)

75. van Dyk, D. A. and Meng, X. L. (1997). On the Orderings and Groupings of Conditional Maximizations Within ECM-Type Algorithms. *The Journal of Computational and Graphical Statistics*, **6**, 202–223. [DOI;](#) [Download.](#)

76. van Dyk, D. A., Meng X. L., and Rubin, D. B. (1995). Maximum Likelihood Estimation via the ECM Algorithm: Computing the Asymptotic Variance. *Statistica Sinica*, **5**, 55–75. [Download.](#)

REFEREED PUBLICATIONS IN CONFERENCE PROCEEDINGS AND EDITED VOLUMES

77. Kasyap, V. L., van Dyk, D. A., McKeough, K., Primini, F., Jerius, D, Gowrishankar, A., Siemiginowska, A., and Zezas, A. (2017). X-raying the Evolution of SN 1987a. In the *Proceedings of the International Astronomical Union: SN 1987A 30 Years Later* (Editors: M. Renaud, A. Marcowith, G. Dobner, A. K. Ray, and A. M. Bykov), Vol 12, Issue S331, 284–289. [DOI.](#)

78. Jiao, X., van Dyk, D. A., Trotta, R., and Shariff, H. (2016). The Efficiency of Next-Generation Gibbs-Type Samplers: An Illustration Using a Hierarchical Model in Cosmology. In the *New Developments in Statistical Modeling, Inference and Application: Selected Papers from the 2014 ICSA/KISS Joint Applied Statistics Symposium in Portland, OR* (Editors: Z. Jin, M. Liu, and X. Luo), 167-184. [DOI;](#) [Download.](#)

79. Stenning, D., van Dyk, D. A., Yu, Y., Kashyap, V. (2015). A Bayesian Analysis of the Solar Cycle Using Multiple Proxy Variables. In *Current Trends in Bayesian Methodology with Applications* (Editors: S. K. Upadhyay, U. Singh, D. K. Dey, and A. Loganathan), Chapman Hall/CRC Press, 585–608. (ISBN 9781482235111).

80. Stenning, D., Kashyap, V., Lee, T. C. M., van Dyk, D. A., and Young, C. A. (2012). Morphological Image Analysis and Its Application to Sunspot Classification (with discussion). In *Statistical Challenges in Modern Astronomy V* (Editors: E. D. Feigelson and G. J. Babu), Springer, New York, 329–342.

81. Stein, N., Kashyap, V., Meng, X. L., and van Dyk, D. A. (2012). H-Means Image Segmentation to Identify Solar Thermal Features. In the *Proceedings of the 19th IEEE International Conference on Image Processing, ICIP 2012* (Editor: E. Saber), 1597 - 1600.

82. van Dyk, D. A. (2011). Setting Limits, Computing Intervals, and Detection. In *Proceedings of Phystat 2011* (Editors: H. Prosper and L. Lyons), CERN Yellow Report, 149–157.

83. van Dyk, D. A. and Park, T. (2011). Partially Collapsed Gibbs Sampling & Path-Adaptive Metropolis-Hastings in High-Energy Astrophysics. In *Handbook of Markov Chain Monte Carlo* (Editors: S. Brooks, A. Gelman, G. Jones and X.-L. Meng), Chapman & Hall/CRC Press, 383–399.

84. Connors, A. and van Dyk, D. A. (2007). How To Win With Non-Gaussian Data: Poisson Goodness-of-Fit. In *Statistical Challenges in Modern Astronomy IV* (Editors: G. J. Babu and E. D. Feigelson), Astronomical Society of the Pacific, San Francisco, Vol. CS371, 101–117.

85. van Dyk, D. A. and Park, T., (2004). Efficient EM-Type Algorithms for Fitting Spectral Lines in High Energy Astrophysics. In *Applied Bayesian Modeling and Causal Inference from Incomplete-Data Perspectives: An Essential Journey with Donald Rubin's Statistical Family* (Editors: A. Gelman and X. L. Meng), Wiley & Sons, New York, 285–296.

86. van Dyk, D. A. (2004). Highly-Structured Statistical Models in High Energy Astrophysics. In *Proceedings of the Conference on Statistical Problems in Particle Physics, Astrophysics,*

and Cosmology (Editors: L. Lyons, R. Mount, and R. Reitmeyer), SLAC Technical Publications Department, Menlo Park, CA, 114–121.

87. van Dyk, D. A. (2003). Hierarchical Models, Data Augmentation, and Markov Chain Monte Carlo with discussion. In *Statistical Challenges in Modern Astronomy III* (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 41–56.

88. van Dyk, D. A. and Hans, C. M. (2002). Accounting for Absorption Lines in Images Obtained with the Chandra X-ray Observatory. In *Spatial Cluster Modelling* (Editors: D. Denison and A. Lawson), CRC Press, London, 175–198.

EDITED VOLUMES AND SPECIAL ISSUES

89. Meng, X. L., and van Dyk, D. A. (Guest Editors, 2010) Special Issue to Commemorate the Thirtieth Anniversary of the EM Algorithm. *Statistical Science*, 2010.

90. van Dyk, D. A. and Welling, M. (Editors, 2009). Proceedings of the Twelfth International Conference on Artificial Intelligence and Statistics. *Journal of Machine Learning Research Workshop and Conference Proceedings*, Volume 5: AISTATS 2009.

INVITED PUBLICATIONS IN EDITED VOLUMES & ENCYCLOPEDIAS

91. Stenning, D. C. and van Dyk, D. A. (2018). Bayesian Statistical Methods for Astronomy Part I: Foundations. In Statistics for Astrophysics: Bayesian Methodology (Editors: Didier Fraix-Burnet, Stéphane Girard, Julyan Arbel, Jean-Baptiste Marquette), EDP Sciences, France, pages 11–27.

92. Stenning, D. C. and van Dyk, D. A. (2018). Bayesian Statistical Methods for Astronomy Part II: Markov Chain Monte Carlo. In Statistics for Astrophysics: Bayesian Methodology (Editors: Didier Fraix-Burnet, Stéphane Girard, Julyan Arbel, Jean-Baptiste Marquette), EDP Sciences, France, pages 29–58.

93. Stenning, D. C. and van Dyk, D. A. (2018). Bayesian Statistical Methods for Astronomy Part III: Model Building. In Statistics for Astrophysics: Bayesian Methodology (Editors: Didier Fraix-Burnet, Stéphane Girard, Julyan Arbel, Jean-Baptiste Marquette), EDP Sciences, France, pages 59–75.

94. Glickman, M. E. and van Dyk, D. A. (2007). Basic Bayesian Methods. In Methods in Molecular Biology: Elementary Biostatistics (Editor: Walter T. Ambrosius), Humana Press, Totowa, New Jersey, 319–338.

95. van Dyk, D. A. and Meng, X. L. (2000). The EM Algorithm. Invited entry in *The Encyclopedia of Mathematics*, Kluwer Academic Publishers, Dordrecht.

PUBLICLY AVAILABLE STATISTICAL SOFTWARE

96. Revsbech, E. A., Trotta, R., and van Dyk, D. A. (2017). `STACCATO`: Synthetically Augmented Light Curve Classification code for SN classification.
URL: `https://github.com/rtrotta/STACCATO`

97. Wang, X., Chen, Y., van Dyk, D. A., Meng, X. L., Marshall, H., and Kashyap. V. (2017). `Cal-Concordance`: Calibration Concordance for Astronomical Instruments.
URL: `https://github.com/astrostat/Concordance`

98. Tak, H., Mandel, K., van Dyk, D. A. Kashyap, V. L., Meng, X.-L., and Siemiginowska, A. (2016). `timedelay`: R package for Time Delay Estimation in Stochastic Time Series of Gravitationally Lensed Quasars.
URL: `https://cran.r-project.org/web/packages/timedelay/index.html`

99. Wong, R. K. W., Kashyap, V. L., Lee, T. C. M., and van Dyk, D. A. (2015). `Automark`: Automatic Marking of Marked Poisson Process in Astronomical High-Dimensional Datasets.
URL: `https://github.com/astrostat/Automark` and `http://ascl.net/1602.001`

100. Jones, D. E., Kashyap, V. L., and van Dyk, D. A. (2015, last updated 2016). `BASCS`: Bayesian Separation of Close Sources. URL: `https://github.com/astrostat/BASCS` and `http://ascl.net/1601.017`

101. von Hippel, T., Robinson, E., Jeffery, E., Wagner-Kaiser, R., DeGennaro, S., Stein, N., Stenning, D., Jeffrey, W., van Dyk, D. (2014, last updated 2016). `BASE-9`: Bayesian Analysis for Stellar Evolution with 9 Parameters. [manual on arXiv](). URL: `https://github.com/argiopetech/b` and
`http://http://ascl.net/code/v/1470`

102. Kramer, J., van Dyk, D. A., Connors, A., Kashyap, V., Refsdal, B., and Siemiginowska, A. (2009, last updated 2016). `pyBLoCXS`: Bayesian MCMC Analysis of Low-Count Spectra. URL: `http://hea-www.harvard.edu/AstroStat/pyBLoCXS/`, `https://github.com/astrostat/pyblocxs`, and `http://ascl.net/1204.002`

103. Connors, A., Esch, D., Kashyap, V., Stein, N., Siemiginowska, A., and van Dyk, D. A. (2009, last updated 2017). `LIRA`: Low-counts Image Reconstruction and Analysis (formally known as EMC2). URL: `https://github.com/astrostat/LIRA` and `http://ascl.net/1601.007`

104. Park, T., van Dyk, D. A. and Kashyap, V. (2005, last updated 2013). `BEHR`: Bayesian Estimation of Hardness Ratios. URL: `hea-www.harvard.edu/AstroStat/BEHR/index.html` and `http://ascl.net/1306.006`

105. Imai, K. and van Dyk, D. A. (2004, last updated 2017). `MNP`: R Package for Fitting the Multinomial Probit Model. URL: `http://imai.princeton.edu/software/MNP.html`, `https://cran.r-project.org/web/packages/MNP/index.html`, and `https://github.com/kosukeimai/MNP`

CONTRIBUTED AND INVITED DISCUSSIONS AND REJOINDERS

106. van Dyk, D. A. (2012). Invited discussion of "Cosmological Bayesian Model Selection: Recent Advances and Open Challenges" by R. Trotta. *Statistical Challenges in Modern Astronomy V* (Editors: E. D. Feigelson and G. J. Babu), Springer, New York, 141–146.

107. Shahbaba, B., Yu, Y., and van Dyk, D. A. (2011). Invited comment on "Data Augmentation for Support Vector Machines" by Polson and Scott. *Bayesian Analysis*. **6,** 31–36.

108. van Dyk, D. A. (2010). Invited comment on "Galaxy Formation: A Bayesian Uncertainty Analysis" by Vernon, Goldstein, and Bower. *Bayesian Analysis*. **5,** 691–696.

109. van Dyk, D. A. and Kang, H. (2006). Rejoinder to "Deconvolution in High Energy Astrophysics: Science, Instrumentation, and Methods". *Bayesian Analysis*, **1**, 241–248.

110. van Dyk, D. A. (2003). Invited comment on "Bayesian Adaptive Exploration" by T. J. Loredo and D. F. Chernoff. In *Statistical Challenges in Modern Astronomy III* (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 70.

111. van Dyk, D. A. (2003). Invited comment on "The Sloan Digital Sky Survey" by M. A. Strauss. In *Statistical Challenges in Modern Astronomy III* (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 124–126.

112. van Dyk, D. A. (2002). Invited comment on "Setting Confidence Intervals on Bounded Parameters" by M. Mandelkern. *Statistical Science*, **17,** 149–172.

113. Zaslavsky, A. and van Dyk, D. A. (2002). Comment on "A Note on the Estimation of the Multinomial Logit Model with Random Effects" by Z. Chen and L. Kuo. *The American Statistician*, **56,** 80–81.

114. van Dyk, D. A. and Meng, X. L. (2001). Rejoinder to "The Art of Data Augmentation". *The Journal of Computational and Graphical Statistics*, **10**, 98–111.

115. van Dyk, D. A. (1999). Comment on "Quantifying Surprise in the Data and Model Verification" by M. J. Bayarri and J. O. Berger. In *Bayesian Statistics 6* (Editors: J. M. Bernardo, J. O. Berger, A. P. Dawid, and A. F. M. Smith), Oxford University Press, Oxford, 53–82.

116. van Dyk, D. A. (1999). Comment on "Simulated Sintering: Markov Chain Monte Carlo With Spaces of Varying Dimension" by J. S. Liu and C. Sabatti. In *Bayesian Statistics 6* (Editors: J. M. Bernardo, J. O. Berger, A. P. Dawid, and A. F. M. Smith), Oxford University Press, Oxford, 389–413.

117. Meng, X. L. and van Dyk, D. A. (1997). Rejoinder to "The EM Algorithm — An Old Folk Song Sung to a Fast New Tune". *Journal of the Royal Statistical Society, Series B*, **59**, 559–567.

SELECTED CONFERENCE PROCEEDINGS AND OTHER PUBLICATIONS

118. Jiao, X. and van Dyk, D. A. (2015). A Corrected and More Efficient Suite of MCMC Samplers for the Multinomal Probit Model. [arXiv.]

119. von Hippel, T., van Dyk, D. A., Si, S., Montgomery, M., O'Malley, E., Robinson, E., Stenning, D., Stein, N, Jeffery Kraczek, E., Jeffreys, W. H., and Webster, A. (2015). Deriving the Ages of Field White Dwarfs. In *Proceedings of the 19th European Workshop*

on White Dwarfs, (Ed: P. Dufour), Astronomical Society of the Pacific, ASP Conference Series, **493**, 107–111. (ISBN: 978-1-58381-870-1).

120. von Hippel, T., van Dyk, D. A., Stenning, D., Robinson, E., Jeffery, E., Stein, N., Jefferys, W. H., and OMalley, E. (2014). The Power of Principled Bayesian Methods in the Study of Stellar Evolution. In the *EES 2013: The Age of Stars* (Editors: P. Hennebelle and C. Charbonnel), EAS Publications Series, **65**, 267–287. (DOI: 10.1051/eas/1465007). <u>arXiv</u>.

121. Babu, G. J., Feigelson, E., Loredo, T., Scargle, J., van Dyk, D. A. (2012). Panel Discussion: The Future of Astrostatistics. In *Statistical Challenges in Modern Astronomy V* (Editors: E. D. Feigelson and G. J. Babu), Springer, New York, 449–466.

122. Siemiginowska, A., Kashyap, V., Refsdal, B., van Dyk, D., Connors, A., and Park, T. (2011). `pyBLoCXS`: Bayesian Low-Counts X-ray Spectral Analysis in Sherpa. In *Astronomical Data Analysis Software and Systems XX* (Editors: I. N. Evans, A. Accomazzi, D. J. Mink, and A. H. Rots), **442**, 439–442.

123. Levine, R. A., Tierney, L., Wickham, H., Sampson, E., Cook, D., and van Dyk, D. A. (2010). Editorial: Publishing Animations, 3D Visualizations, and Movies in *JCGS. Journal of Computational and Graphical Statistics*, **19**, 1-2.

124. van Dyk, D. A. (2008). Editorial. *Journal of Computational and Graphical Statistics*, **17**, 296.

125. Kashyap, V., Lee, H., Siemiginowska, A., MacDowell, J., Rots, A., Drake, J., Ratzlaff, P., Zezas, A., Izem, R., Connors, A., van Dyk, D., and Park, T. (2008). How to Handle Calibration Uncertainties in High-Energy Astrophysics. In *Observatory Operations: Strategies, Processes, and Systems II* (Editors: R. J. Brissenden and D. R. Silva), SPIE, Vol. 7016, 70160P, 8 pages.

126. Park, T., van Dyk, D. A., and Siemiginowska, A. (2007). Fitting Narrow Spectral Lines in High-Energy Astrophysics Using Incompatible Gibbs Samplers. In *Statistical Challenges in Modern Astronomy IV* (Editors: G. J. Babu and E. D. Feigelson), Astronomical Society of the Pacific, San Francisco, Vol. CS371, 437–438.

127. Jefferys, W. H., von Hippel, T., Scott, J., Stein, N., Winget, D. E., DeGennaro, S., Dam, A., Jeffery, E., and van Dyk, D. A. (2007). Inverting Color-Magnitude Diagrams to Access Precise Star Cluster Parameters: A Bayesian Approach. In *Statistical Challenges in Modern Astronomy IV* (Editors: G. J. Babu and E. D. Feigelson), Astronomical Society of the Pacific, San Francisco, Vol. CS371, 435–436.

128. Kang, H., van Dyk, D. A., Kashyap, V., and Connors, A. (2005). Incorporating Atomic Data Errors in Stellar DEM Reconstruction. In *X-ray Diagnostics of Astrophysical Plasmas: Theory, Experiment, and Observation* (Editor R. K. Smith), American Institute of Physics, Vol. 774, 373–375.

129. Hans, C. M. and van Dyk, D. A. (2003). Accounting for Absorption Lines in High Energy Spectra. In *Statistical Challenges in Modern Astronomy III* (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 429–430.

130. Kang, H., van Dyk, D. A., Yu, Y., Siemiginowska, A., Connors, A., and Kashyap, V. L. (2003). New MCMC Methods to Address Pile-up in the Chandra X-ray Observatory In *Statistical Challenges in Modern Astronomy III* (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 449–450.

131. Sourlas, N., van Dyk, D. A., Kashyap, V., Drake, J., and Pease, D. (2003). Bayesian Spectral Analysis of "MAD" Stars. In *Statistical Challenges in Modern Astronomy III*, (Editors: G. J. Babu and E. D. Feigelson), Springer, New York, 489–490.

132. van Dyk, D. A. and Meng, X. L. (2000). Algorithms Based on Data Augmentation: A Graphical Representation and Comparison. In *Computing Science and Statistics: Proceedings of the 31st Symposium on the Interface* (Editors: K. Berk and M. Pourahmadi), vol. 31, 230–239. Interface Foundation of North America, Fairfax Station, VA.

133. Meng, X. L. and van Dyk, D. A. (1996). Minimum Information Ratio and Relative Augmentation Function. *The Proceedings of the Statistical Computing Section of the American Statistical Association*, 73–78.

134. Meng, X. L. and van Dyk, D. A. (1995). Augmenting Data Wisely to Speed Up the EM Algorithm. *The Proceedings of the Statistical Computing Section of the American Statistical Association*, 160–165.

135. van Dyk, D. A. (1995). *Construction, Implementation, and Theory of Algorithms Based on Data Augmentation and Model Reduction.* Ph.D. Thesis, University of Chicago, Department of Statistics.
136. van Dyk, D. A. and Meng, X. L. (1994). Permuting CM Steps within the ECM Algorithm. *The Proceedings of the Statistical Computing Section of the American Statistical Association*, 130–135.

SHORT COURSES

1. School of Statistics for Astrophysics 2017: Bayesian Methodology, Autrans, France, October 2017, *Bayesian Astrostatistics*.
2. VII International Pontecorvo Neutrino Summer School, Prague, Czech Republic, August 2017, *Model Selection*.
3. Arcetri Astrophysical Observatory, Florence, Italy, September 2014, *Bayesian Astrostatistics*.
4. Statistical Challenges in Modern Astronomy V, State College, Pennsylvania, June 2011, with Alan Heavens and Tom Loredo, *Markov Chain Monte Carlo*.

PANEL DISCUSSIONS (INVITED)

5. Phystat-NU Fermilab 2016, Chicago, Illinois, September 2016, *Discussion of Statistical Methods in Neutrino Physics*.
6. Seventh Solar Information Processing Workshop, La Roche en Ardenne, Belgium, August 2014, *The future of SIP and a cross-disciplinary solar/heliophysics data analysis community*.
7. "Data Scientist: The Sexiest Job of the 21st Century?", University of Bournemouth, June 2014, *Is Data Science the transforming and growth driving force across all sectors of economy? Is a Data Scientist the sexiest job of the 21st century?*
8. Tenth Meeting of New Researchers in Statistics and Probability, Salt Lake City, Utah, July 2007, *Editor's Panel*.

INVITED PRESENTATIONS AND COLLOQUIA

9. IMS International Conference on Statistics and Data Science, Lisbon, Portugal, December, 2023.
10. 15th International Conference of the ERCIM WG on Computational and Methodological Statistics, Berlin, Germany, December 2023.
11. Astrostatistics in Canada and Beyond, Banff International Research Station, Canada, October, 2023.
12. The Joint Statistical Meetings, Toronto, Ontario, August 2023.
13. Systematic Effects and Nuisance Parameters in Particle Physics Data Analyses, Banff International Research Station, Canada, April, 2023.
14. The Joint Statistical Meetings, Washington DC, August 2022.
15. Department of Mathematics, Statistics Seminar, EPFL, Switzerland, March 2022.
16. Phystat-Systematics, Virtual, November 2021.
17. Chandra Data Science, Virtual, August 2021.
18. The Joint Statistical Meetings, Virtual, August 2021.
19. 50th Scientific Meeting of the Italian Statistical Society, Pisa, Italy, June 2020, cancelled.
20. 12th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK, December 2019 (Keynote Lecture).
21. Department of Statistics, Los Alamos National Labs, New Mexico, September 2019.
22. The Joint Statistical Meetings, Denver, Colorado, August 2019.
23. Workshop on Machine Learning in Astronomy, Lancaster University, May 2019.
24. DIRAC Institute, University of Washington, April 2019.
25. PHYSTAT-nu 2019, CERN, Geneva, Switzerland, January 2019.
26. 11th International Conference of the ERCIM WG on Computational and Methodological Statistics, Pisa, Italy, December 2018.
27. Multi-dimensional Characterization of Distant Worlds (conference), University of Michigan, October 2018.
28. Workshop on Statistical Methods in Physics, University of Padova, September 2018.
29. The Joint Statistical Meetings, Vancouver, British Columbia, August 2018.
30. Department of Physics, University of Crete, April 2018.

31. Department of Statistical Sciences, University of Padova, February 2018.
32. DM-Stat: Statistical Challenges in the Search for Dark Matter, Banff International Research Station, Canada, February, 2018.
33. 16th Meeting of the High Energy Astrophysics Division (of the American Astronomical Society), Sun Valley, Idaho, August 2017.
34. The Joint Statistical Meetings, Baltimore, Maryland, August 2017 (2 presentations).
36. First RISE-Astrostatistics Collaboration Meeting, Heraklion, Greece, June 2017.
37. Advances in Data Science, Manchester, UK, May 2017.
38. Department of Statistics & Data Science, University of Texas at Austin, March 2017.
39. Statistical Science Group, Exeter University, March 2017.
40. Department of Statistics, Los Alamos National Labs, New Mexico, January 2017
41. 9th International Conference of the ERCIM WG on Computational and Methodological Statistics, Seville, Spain, December 2016.
42. Department of Physics, University of Sheffield, November 2016.
43. Phystat-NU Fermilab 2016, Chicago, Illinois, September 2016.
44. The Joint Statistical Meetings, Chicago, Illinois, August 2016.
45. Neutrino 2016, London, England, July 2016 (Plenary Lecture) .
46. 13th World Meetings of the International Society for Bayesian Analysis, Sardinia, Italy, June 2016.
47. PhyStat-ν Workshop on Statistical Issues in Experimental Neutrino Physics, Tokyo, Japan, May 2016.
48. Statistics Group, Department of Mathematics, University of Bristol, May 2016.
49. Harvard-Smithsonian Astrophysical Observatory, Cambridge, Massachusetts, April 2016.
50. Astrophysics Seminar, Imperial College London, March 2016.
51. The Joint Statistical Meetings, Seattle, Washington, August 2015.
52. ICMS Conference on Statistical Modelling of Big Data, Edinburgh, Scotland, May 2015.
53. Astrophysics Seminar, University of Birmingham, April 2015.
54. Harvard-Smithsonian Astrophysical Observatory, Cambridge, Massachusetts, April 2015.
55. Department of Statistics, Chinese University Hong Kong, April 2015.
56. Department of Statistics, Los Alamos National Labs, New Mexico, March 2015.
57. CRISM Seminar, Department of Statistics, University of Warwick, November 2014.
58. Department of Statistics, University of Leeds, October 2014.
59. Imperial-Huawei Workshop on Big Data, Imperial College London, September 2014.
60. Yonsei University, Seoul, Korea, September 2014.
61. Seventh Solar Information Processing Workshop, La Roche en Ardenne, Belgium, August 2014 (2 talks).
63. The Joint Statistical Meetings, Boston, Massachusetts, August 2014 (2 talks).
65. Imperial Workshop on Workhorse Computational Methods for Massive/Complex Data, London, June 2014.
66. 2014 ICSA and KISS Joint Applied Statistics Symposium, Portland, Oregon June 2014.
67. "Data Scientist: The Sexiest Job of the 21st Century?", Univ of Bournemouth, June 2014.
68. Statistical Challenges in 21st Century Cosmology (an IAU Symposia), Lisbon, Portugal, May 2014.
69. Conference for Applied Statistics for Ireland, Belfast, May 2014. (Keynote Lecture).
70. Harvard Smithsonian Astrophysical Observatory, Cambridge, Massachusetts, March 2014.
71. Imperial College Big Data Workshop, London, England, February, 2014.
72. The Ninth ICSA International Conference, Hong Kong, December 2013.
73. Statistics Group, University of Kent, December 2013.
74. Applied Statistics 2013, Ribno, Slovenia, September 2013. (Keynote Lecture).
75. The 59th World Statistics Congress, Hong Kong, August 2013 (2 talks).
77. The 2013 Essex Summer School in Social Science Data Analysis, August 2013.
78. UK Young Statisticians Meeting, London, England, July 2013. (Keynote Plenary Lecture).
79. Statistics Group, University of Nottingham, May 2013.
80. The Eighth IACHEC Meeting, Theddingworth, England, March 2013.
81. CosmoStat2013: Workshop on Statistical Challenges from Large Data Sets in Cosmology and Particle Physics, Banff International Research Station, Canada, March, 2013.
82. CERN, February 2013.

83. Department of Statistics, University of Oxford, February 2013.
84. Department of Statistics, London School of Economics, January 2013.
85. ISBA Regional Meeting & International Workshop on Bayesian Theory and Applications, Varanasi, India, January 2013.
86. Eighth International Triennial Calcutta Symposium on Probability and Statistics, Calcutta, India, December 2012.
87. School of Mathematics and Statistics, University of Glasgow, December 2012.
88. The Joint Statistical Meetings, San Diego, CA, August 2012.
89. SLAC Workshop: Statistical Issues in Searches, Palo Alto, California, June 2012.
90. Southampton Statistical Research Institute, University of Southampton, May 2012.
91. ICMS Workshop on Advances in Markov Chain Monte Carlo: Theory, Methodology, and Applications, Edinburgh, Scotland, April, 2012.
92. Royal Society Meeting on Signal Processing and Physical Science, Kavli Royal Society International Centre, Buckinghamshire, England, March 2012.
93. Workshop on Challenges and Advances in High Dimensional and High Complexity Monte Carlo Computation and Theory, Banff International Research Station, Canada, March, 2012.
94. Statistics Section, Imperial College London, March 2012.
95. Department of Statistics, University of California, Los Angeles, February 2012.
96. Department of Astrophysics, University of New South Wales, January 2012.
97. Dept of Mathematical Sciences, University of Technology, Sydney, Australia, January 2012.
98. Department of Statistics, Chinese University of Hong Kong, January 2012.
99. Workshop on Current Challenges in Statistical Learning, Banff International Research Station, Canada, December 2011.
100. Department of Statistics, University College London, November 2011.
101. Statistics Group, Department of Mathematics, University of Bristol, November 2011.
102. Workshop on Statistical Methods for Astronomy and Astrophysics, University of California, Davis, October 2011.
103. Statistical Challenges in Modern Astronomy V, Penn State Univ, June 2011 (2 talks).
105. Seminar on Astrostatistics, Departments of Statistics and Astronomy, University of California, Berkeley, April 2011
106. Information Theory and Applications Workshop, San Diego, California, February 2011.
107. PHYSTAT 2011, European Organization for Nuclear Research (CERN), January 2011.
108. Royal Astronomical Society, An RAS Specialist Discussion Meeting, "Novel Methods for the Exploitation of Large Astronomical and Cosmological Data Sets", London, England, November 2010.
109. Department of Biostatistics, University of California, Los Angeles, November 2010.
110. Workshop on Statistical Issues Relevant to Significance of Discovery Claims, Banff International Research Station, Canada, July, 2010 (2 talks).
112. Seminar für Statistik, Department of Mathematics, Eldgenössische Technische Hochshule Zürich, May 2010.
113. Department of Statistics, University of California, Riverside, May 2010.
114. Department of Statistics, Chinese University of Hong Kong, March 2010.
115. Department of Information and Systems Management, Hong Kong University of Science and Technology, March 2010.
116. Department of Statistics, University of Hong Kong, February 2010.
117. Department of Statistics, Carnegie Mellon University, November 2009.
118. The Joint Statistical Meetings, Washington, DC, August 2009.
119. The Biometric Society WNAR Meetings, Portland Oregon, June 2009.
120. Department of Statistics, Ohio State University, May 2009 (2 talks).
122. Department of Statistics, Columbia University, May 2009.
123. Center for Statistics and the Social Sciences, University of Washington, April 2009.
124. World Conference of the International Association for Statistical Computing, Yokohama, Japan, December, 2008.
125. The Joint Statistical Meetings, Denver, Colorado, August 2008.

126. Calibration and Validation of Complex Computer Models: Bayesian Approaches, Bayesian Solutions, Satellite Workshop to the Ninth International Society for Bayesian Analysis World Meeting, Sydney, Australia, July 2008.
127. The Seventh World Congress in Probability and Statistics, Singapore, July 2008.
128. Tenth High Energy Astrophysics Division Meetings, Los Angeles, California, March 2008.
129. Statistics Group, The RAND Corporation, Santa Monica, California,March 2008.
130. Department of Statistics, University of Illinois, March 2008.
131. Department of Mathematics, California State University, Bakersfield, November, 2007.
132. 50th Anniversary Celebration & Symposium [of the Department of Statistics, Harvard University], Cambridge, Massachusetts, October 2007.
133. Department of Statistics and Probability, Michigan State University, October 2007.
134. DIMACS Workshop on Markov Chain Monte Carlo: Synthesizing Theory and Practice, Piscataway, New Jersey, June 2007.
135. CACR Workshop on Interdisciplinary Strategic Issues in e-Science and Cyber-Infrastructure, Pasadena, California, June 2007.
136. Department of Applied Math and Statistics, Univ of California, Santa Cruz, May 2007.
137. Third Workshop on Monte Carlo Methods, Cambridge, Massachusetts, May 2007.
138. Department of Statistics, National University of Singapore, April 2007.
139. Department of Statistics, Chinese University of Hong Kong, April 2007.
140. First GLAST Symposium, Palo Alto, California, February 2007.
141. Department of Mathematics, California State University, Bakersfield, October, 2006.
142. Workshop on Statistical inference Problems in High Energy Physics and Astronomy, Banff International Research Station, Canada, July, 2006.
143. Statistical Challenges in Modern Astronomy IV, State College, Pennsylvania, June 2006.
144. Department of Statistics, Duke University, February 2006.
145. Department of Statistics, University of Chicago, January 2006.
146. Department of Statistics, University of California, Berkeley, November 2005.
147. Empirical Evaluation of Labour Market Programmes, Institute of Employment Research, Nuremberg, Germany, June 2005.
148. CHASC Astrostatistics Center, Department of Statistics, Harvard University, May, 2005.
149. 5th SIAM International Conference on Data Mining, Newport Beach, Calif, April 2005.
150. Reed Institute for Decision Science, Claremont McKenna College, February, 2005.
151. Department of Mathematical Sciences, Worcester Polytechnic Institute, November 2004.
152. Astronomical Data Analysis Software & Systems XIV, Pasadena California, October 2004.
153. Meeting of the High Energy Astrophysics Division of the American Astronomical Society, New Orleans, Louisiana, September, 2004.
154. The Joint Statistical Meetings, Toronto, Ontario, August 2004.
155. Sixth International Chinese Statistical Association Conference, Singapore, August 2004.
156. Seventh World Meeting of the International Society for Bayesian Analysis, Viña del Mar, Chile, May 2004.
157. Department of Statistics, Los Alamos National Labs, New Mexico, May 2004.
158. Division of Biostatistics, University of California, San Diego, April 2004.
159. IPAM Conference: Challenges in Astronomical Imaging, Los Angeles, Calif, January 2004.
160. Statistics Group, The RAND Corporation, Santa Monica, California, January 2004.
161. Department of Cognitive Science, University of California, Irvine, November 2003
162. Department of Astronomy, University of California, Los Angeles, November 2003.
163. Department of Biostatistics, University of California, Los Angeles, November 2003.
164. Department of Statistics, University of Toronto, October 2003.
165. Department of Health Care Policy, Boston University, October 2003.
166. Case Studies in Bayesian Statistics Workshop 7, Pittsburgh,Pennsylvania, September 2003.
167. SLAC Conference on Statistics Problems in Particle Physics, Astrophysics, and Cosmology, Menlo Park, California, September 2003.
168. Department of Statistics, Columbia University, October 2002.
169. Cape Cod Workshop on Monte Carlo Methods, Hyannis, Massachusetts, September 2002.
170. Department of Statistics, University of California, Los Angeles, April 2002.
171. Department of Statistics, Colorado State University, April 2002.
172. First SIAM Conference on Imaging Science, Boston, Massachusetts, March 2002.

173. Department of Biostatistics, Harvard School of Public Health, October 2001.
174. 5th International Chinese Statistical Association Conf, Hong Kong, August 2001 (2 talks).
176. Statistical Challenges in Modern Astronomy III, State College, Pennsylvania, July 2001.
177. Southern Regional Council on Statistics Research Conf, St Augustine, Florida, June 2001.
178. Department of Statistics, University of Missouri at Columbia, May 2001.
179. Department of Statistics, Wharton School, University of Pennsylvania, April 2001.
180. Meetings of the International Indian Statistical Assoc., New Delhi, India, January 2001.
181. Department of Mathematics, Massachusetts Institute of Technology, December 2000.
182. Department of Government, Harvard University, December 2000.
183. Great Lakes Symposium on Statistical Issues in Health Care, Kalamazoo, Michigan, October 2000.
184. Department of Statistics, Los Alamos National Labs, New Mexico, September 2000.
185. Interface 2000, New Orleans, LA, April 2000.
186. Department of Mathematics, University of Massachusetts at Amherst, March 2000.
187. Center for Statistical Sciences, Brown University, September 1999.
188. Interface '99, Schaumburg, Illinois, June 1999.
189. Department of Statistics, Pennsylvania State University, December 1998.
190. School of Statistics, University of Minnesota, May 1998.
191. Department of Biostatistics, Harvard School of Public Health, April 1998.
192. Department of Statistics, Harvard University, February 1997.
193. The Royal Statistical Society, London, England, December, 1996.
194. Department of Mathematics, Boston University, October 1996.
195. Department of Mathematics, Western Michigan University, November 1995.
196. Department of Statistics, Michigan State University, October 1995.
197. Interface '95, Pittsburgh, Pennsylvania, June 1995.
198. Great Lakes Symposium on Statistical Issues in Health Care, Kalamazoo, Mich, June 1995.

MEMBERSHIPS
The American Statistical Association
The Institute of Mathematical Statistics
The Royal Statistical Society
The International Society for Bayesian Analysis
The International Chinese Statistical Association
The Korean International Statistical Society