Anton H. Westveld

Canberra, ACT, AUS & Richmond, VA, USA

anton.westveld@anu.edu.au.com | https://awest3.github.io

Affiliation

Senior Lecturer (Level C) in Statistics (Australian System)   Jan 2017 - Present
Research School of Finance, Actuarial Studies and Statistics (RSFAS)
College of Business and Economics, Australian National University
Canberra, ACT, Australia
- Convenor of the ASA DataFest at ANU [2021 - Present]
- CBE representative on the CHMS Education Committee [2020 - Present]
- RSFAS Honours Program Convenor [2015 - 2019]

Affiliate Associate Professor   Aug 2023 - Present
Department of Statistical Sciences and Operations Research
Virginia Commonwealth University
Richmond, Virginia, USA

Education

Ph.D. in Statistics, University of Washington
Seattle, WA, USA

M.A. in Applied Statistics & Applied Economics, University of Michigan
Ann Arbor, MI, USA

B.A. in Economics & Political Science, University of Michigan
Ann Arbor, MI, USA

Work Experiance

Associate   Jan 2013 - Dec 2017
Statistics Laboratory @ the Bio5 Institute
and the Statistics Graduate Inter-Disciplinary Program (GIDP)
University of Arizona, Tucson, AZ, USA

Lecturer (Level B) in Statistics   Jul 2014 - Dec 2016
Research School of Finance, Actuarial Studies and Statistics
College of Business and Economics, Australian National University
Canberra, ACT, AUS

Assistant Professor of Statistics   Jan 2013 - May 2014
Faculty of ESTEM
University of Canberra
Canberra, ACT, AUS

Statistician and Regular Statistics Faculty   Sep 2011 - Nov 2012
Statistics Laboratory @ the Bio5 Institute
and the Statistics Graduate Inter-Disciplinary Program (GIDP)
University of Arizona, Tucson, AZ, USA

Assistant Professor of Statistics   Jul 2007 - Aug 2011
Department of Mathematical Sciences
University of Nevada
Las Vegas, NV, USA

Post Doctoral Fellow Jan - Jul 2007

Center for Empirical Research in the Law
Washington University
St. Louis, MO, USA

Visiting Positions

Visiting Faculty Aug 2019 - Feb 2020

Department of Statistics & Data Sciences
University of Texas
Austin, TX, USA

Visiting Faculty Jul - Aug 2019

Center for Statistics and the Social Sciences
University of Washington
Seattle, WA, USA

Visiting Faculty Dec 2017

Department of Statistics & Data Sciences
University of Texas
Austin, TX, USA

Visiting Researcher Mar 2010

Division of Mathematics, Informatics, and Statistics
CSIRO
Canberra, ACT, AUS

Visiting Researcher Jun - Jul 2008

Division of Computational Biology
Fred Hutchinson Cancer Research Center
Seattle, WA, USA

Continuing Education

Operational AI: Balancing National Security & Ethical Governance Feb - Mar 2025

Whole of Government Center of Excellence and the Law School
William & Mary
Williamsburg, VA, USA

Modern Leadership: Reflections and Tools for the Values-Based Leader May 2021

William & Mary Washington Center
Washington, DC, USA

Preparing Statisticians for Leadership: Jul 2018
How to See the Big Picture and Have More Influence
JSM
Vancouver, BC, CAN

Scientific Publications

Marin[#], S., B. Loong, and **A.H. Westveld**. "Adaptive Shrinkage with a Nonparametric Bayesian Lasso". Preprint: arXiv:2411.08262, *Journal of Computational and Graphical Statistics* (2025). `https://doi.org/10.1080/10618600.2025.2572327`.

Marin[#], S., B. Loong, and **A.H. Westveld**. "BOB: Bayesian Optimized Bootstrap with Applications to Gaussian Mixture Models". Preprint: arXiv:2311.03644, *Statistics and Computing* (2025). `https://doi.org/10.1007/s11222-025-10763-y`.

Wang#, Jiali, **A.H. Westveld**, A.H. Welsh, M. Parker, and B. Loong. "Analysis of Survey on Menstrual Disorder Among Teenagers Using Gaussian Copula Model with Graphical Lasso Prior". *PLOS ONE* 3 (2021): 1–22. https://doi.org/10.1371/journal.pone.0248340.

Lundy, M.B., C.A. Standley, and **A.H. Westveld**. "Curricular Reform in Two Medical School Tracks and the Impact on USMLE Scores". *Medical Science Educator* 27, no. 2 (2017): 201–207. https://doi.org/10.1007/s40670-016-0368-y.

Chiu, G.S., and **A.H. Westveld**. "A Statistical Social Network Model for Consumption Data in Trophic Food Webs". Preprint: https://arxiv.org/abs/1006.4432arXiv:1006.4432, *Statistical Methodology (Special issue on Modern Statistical Methods in Ecology)* 17 (2014): 139–160. https://doi.org/10.1016/j.stamet.2013.09.001.

Hurwitz, B.L., **A.H. Westveld**, J.R. Brum, and M.B. Sullivan. "Modeling Ecological Drivers in Marine Viral Communities Using Comparative Metagenomics and Network Analyses". *Proceedings of the National Academy of Sciences of the USA* 111, no. 29 (2014): 10714–10719. https://doi.org/10.1073/pnas.1319778111.

A.H. Westveld and P.D. Hoff. "Modeling of the Learning Process in Centipede Games". Preprint: arXiv:1003.2253, *Stat* 2, no. 1 (2013): 242–254. https://doi.org/10.1002/sta4.32.

Taylor, A., et al. "The Use of Metformin is Associated with Decreased Lumbar Radiculopathy Pain". *Journal of Pain Research* 2013, no. 6 (2013): 755–763. https://doi.org/10.2147/JPR.S52205.

A.H. Westveld and P.D. Hoff. "A Mixed Effects Model for Longitudinal Relational and Network Data, with Applications to International Trade and Conflict". Preprint: arXiv:1009.1436, *Annals of Applied Statistics* 5, no. 2A (2011): 843–872. https://doi.org/10.1214/10-AOAS403.

Chiu, G.S., and **A.H. Westveld**. "A Unifying Approach for Food Webs, Phylogeny, Social Networks, and Statistics". *Proceedings of the National Academy of Sciences of the USA* 108, no. 38 (2011): 15881–15886. https://doi.org/10.1073/pnas.1015359108.

Chiu, Grace S., Peter Guttorp, **Westveld, Anton H.**, Shahedul A. Khan, and Jun Liang. "Latent health factor index: a statistical modeling approach for ecological health assessment". *Environmetrics* 22, no. 3 (2011): 243–255. https://doi.org/https://doi.org/10.1002/env.1055.

Gneiting, T., A.E. Raftery, **A.H. Westveld**, and T. Goldman. "Calibrated Probabilistic Forecasting Using Ensemble Model Output Statistics and Minimum CRPS Estimation". *Monthly Weather Review* 133, no. 3 (2005): 1098–1118. https://doi.org/10.1175/MWR2904.1.

# denotes a student that I supervise in some way.

Working Papers

Chiu, Grace S., et al. "Model-based Calibration of Gear-Specific Fish Abundance Survey Data as a Change-of-Support Problem". *arXiv Statistics Methodology* (2025). **Submitted**, https://doi.org/10.48550/arXiv.2505.05767.

Wolff#, Malcolm, Adrian Dobra, **Anton H. Westveld**, and Grace S. Chiu. "Modeling Human Spatial Mobility Patterns with the Lévy Flight Cluster Model". *arXiv Statistics Methodology* (2025). **Under Revision**, https://doi.org/10.48550/arXiv.2509.00298.

Kuh#, F.S., G.S. Chiu, and **A.H. Westveld**. "Latent Causal Socioeconomic Health Index". *arXiv Statistics Methodology* (2023). **Under Revision**, https://arxiv.org/abs/2009.12217.

Kuh[#], F.S., G.S. Chiu, and **A.H. Westveld**. "Modeling National Latent Socioeconomic Health and Examination of Policy Effects via Causal Inference". *arXiv Statistics Applications* (2019). https://arxiv.org/abs/arXiv:1911.00512.

Wang[#], J., **A.H. Westveld**, B. Loong, and A.H. Welsh. "An Imputation model by Dirichlet Process Mixture of Elliptical Copulas for Data of Mixed Type". *arXiv Statistics Methodology* (2019). https://arxiv.org/abs/1910.05473.

Wang[#], J., **A.H. Westveld**, B. Loong, and A.H. Welsh. "A Copula-based Imputation Model for Missing Data of Mixed Type in Multilevel Data Sets". *arXiv Statistics Methodology* (2017). https://arxiv.org/abs/1702.08148.

Conference Papers

C.H. Chien[#], A. Haller, and **A.H. Westveld**. "Firm Business Networks". *International Workshops on Contextualized Knowledge Graphs, and Semantic Statistics co-located with 17th International Semantic Web Conference* (2018). http://ceur-ws.org/Vol-2317/.

Chiu, G.S., and **A.H. Westveld**. "Physical Statistics or Statistical Physics? A Brief Overview of Bayesian Melding". ISBN: 978-0-9872143-3-1, *In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand* (2013): 2506–2512. https://www.mssanz.org.au/modsim2013/A7/chiu.pdf.

Jensen, N.M., A.D. Martin, and **A.H. Westveld**. "Foreign Direct Investment: A Longitudinal Social Network Approach". *Political Networks Conference* (2011). http://opensiuc.lib.siu.edu/pnconfs_2010/51/.

Myroshnychenko[#], M.V., and **A.H. Westveld**. "Analysis of Morris Water Maze Data with Bayesian Statistical Methods". Poster associated with the paper [joint with Dr. Jefferson Kinney]. *UNLV McNair Scholars Institute Annual Report 2011-2012, University of Nevada Las Vegas* (2011): 65–71. https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1002&context=mcnair_journal.

Quinn, K.M., and **A.H. Westveld**. "Bayesian Inference for Semi-parametric Quantal Response Equilibrium Models". *JSM Proceedings, Section on Bayesian Statistical Science* (2009). https://github.com/awest3/awest3.github.io/blob/main/docs/extraFiles/SpqreJsmProc09.pdf.

A.H. Westveld and P.D. Hoff. "Statistical Methodology for Longitudinal Social Network Data". *APSA Proceedings* (2005). https://convention2.allacademic.com/one/apsa/apsa05/.

Letnes, B., and **A.H. Westveld**. "Transnational Corporations, Economic Development and Human Rights: On the Importance of Assets and Institutions". *APSA Proceedings* (2005). https://convention2.allacademic.com/one/apsa/apsa05/.

Technical & Client Reports

Chien[#], Chien-Hung, A.H. Welsh, and **A.H. Westveld**. "Australian Business Networks". *ABS Research Paper* (2019). https://www.abs.gov.au/ausstats/abs@.nsf/mf/1351.0.55.063.

Chiu, G.S., S. Treier, A.H. Westveld, and N. Erskine. "Progress Report on 'Evidence-based inference for network relations using latent space network modelling: Case studies from the Australian political landscape". *Report prepared for ANU College of Arts and Social Sciences* (2019).

Macatangay, K., **A.H. Westveld**, and B. Kunkel. "Intervening for Success". *Report prepared for Clark County District Attorney, Family Support Division and the U.S. Department of Health and Human Services* (2012).

Competitive Grants & Other Funding

Consulting, at Virginia Institute of Marine Science (William & Mary). 2022
- Statistical Consultant (Bayesian methodology) - U.S. Greater Amberjack Research Program.

Instructor at the Australian Institute of Health and Welfare. 2019
- One day statistics and data science with R workshop.

International Collaborator of the SFI Centre for Research Training. 2019
Foundations of Data Science

Co-PI of ANU RSFAS & RSSS cross-college grant. 2018
- Evidence-based inference for network relations using latent space network modelling: Case studies from the Australian political landscape.
- In collaboration with the other PIs: Dr. Shawn Treier and Dr. Grace Chiu.

Co-PI for sustainable farming practices from the Ian Potter Foundation. 2018
- In collaboration with Professor David Lindenmayer (PI) et al., including Associate Professor Emma Schultz, Dr. Grace Chiu (CBE Co-PIs).

Co-PI for sustainable farming practices pilot project - 1 year grant. 2016
- In collaboration with Professor David Lindenmayer (PI) et al., including Associate Professor Emma Schultz, Dr. Grace Chiu (CBE Co-PIs).

Co-PI for IBISWorld philanthropic grant. 2016-2018
- IBISWorld, Melbourne, Australia - 3 year grant; Part of this grant was used to create the IBISWorld Ph.D. Scholarship awarded to Ms. F. Swen Kuh, who is jointly advised by myself and Dr. Grace Chiu (PI).

Sub-grant PI for Clark County District Attorney's Office Family Support Division, Nevada, USA. 2009-2012
- Child Support Policies via Randomized Experiments (Evidenced Based Policy) funded from the US Department of Health & Human Services.

Sub-grant PI of NSERC Discovery Grant. 2009
- Statistical modelling of health indices for aquatic ecosystems.

PI of the New Researchers' US Federal Stimulus Award. 2008

PI of the Nevada System of Higher Education, NSF EPSCoR RING TRUE. 2007 - 2008

Courses Taught, Convened[+], & Developed[*]

Statistical Learning[+*] 2015 - 2017, 2021 - Present
ANU STAT 3040/4040/7040 [undergraduate, honours, graduate -
some years graduate and undergraduate were not jointly taught]

Statistical Inference[+] 2014 - 2020, 2024 - Present
ANU STAT3013/4027/8027 [undergraduate, honours, graduate]

Statistics for Data Analysis A & B[+*] 2021
ANU Micro-credential Course [professional]

Regression Modelling + Introduction to GLMs$^+$ 2020
ANU STAT 2008/2014/6014 [undergraduate and graduate]

Regression Modelling$^+$ 2018 [944 students enrolled]
ANU STAT 2008/6038 [undergraduate and graduate]

Managing the Research Process^{+*}   2016 - 2018
ANU STAT 4010 [honours]

Introduction to Mathematical Statistics$^+$ 2014
ANU STAT2001/6039 [undergraduate and graduate]

Econometrics$^+$ 2014
UC 6541/6551 [undergraduate and graduate]

Problem Evaluation and Resolution$^+$ 2013 - 2014
UC 8730 [undergraduate]

Introduction to Business Statistics$^+$ 2013
UC 5123/6275 [undergraduate and graduate]

Aided in developing a course on **network data*** 2012
for the School of Information: Science, Technology, and Arts (SISTA)
UA [undergraduate]

Applied Statistics for the Biological Sciences$^+$ 2008 - 2010
UNLV STAT 391 [undergraduate]

Experimental Design and Analysis$^+$ 2008 - 2010
UNLV STAT 713 [graduate]

Bayesian Data Analysis^{+*}   2009
UNLV STAT 753 [graduate]

Independent study for **Bayesian Data Analysis**$^{+*}$ 2008 - 2011
UNLV STAT 753 [graduate]

Regression Analysis II^{+*} (GLMs, LMMs, GLMMs)   2010 - 2011
UNLV STAT 762 [graduate]

Statistical Decision Theory$^+$ 2008
UNLV Stat 765 [graduate]

Multivariate Analysis$^+$ 2007
UNLV Stat 764 [graduate]

Note: Australian National University (ANU), University of Arizona (UA), University of Canberra (UC), University of Nevada, Las Vegas (UNLV)

Research Advising and Mentoring

Santiago Marin Ardila, Ph.D. student in Statistics, RSFAS, ANU.   2023 - Present
- Project: Bayesian Posterior Approximation and Non-Parametrics   Co-Pri Adv

Chris Malone, Master's in Statistics, RSAF, ANU.   2021 - 2022
- Project: Bayesian Inference of Eradication of Incipient Tephritid Fruit Fly   Co-Pri Adv

- LinkedIn: https://www.linkedin.com/in/cm-ds/

Malcolm Wolff, Ph.D. student in Statistics, Univ. of Washington, Seattle.   2021 - Present
- Project: Statistical Modelling of Human Movement, Social Activity Spaces,   Co-Adv

and Networks

- LinkedIn: https://www.linkedin.com/in/malcolm-wolff-82b1586a/

Fui Swen Kuh, IBISWorld Ph.D. Scholar in Statistics, RSFAS, ANU. 2016 - 2022
Co-Pri Adv

- Project: A Holistic Bayesian Framework for Modelling Latent
  Socio-Economic Health

- Winner of the Inaugural Poster competition of the ASA Social Statistics Section - JSM 2018

- LinkedIn: https://www.linkedin.com/in/swenkuh/

Joseph Chien, Ph.D in Statistics, Mathematical Sciences Institute, ANU. 2016 - 2021
Assoc Adv

- Project: Using Administrative Data to Gain Insights into
  Microdrivers of Productivity

- LinkedIn: https://www.linkedin.com/in/joseph-chien-hung-chien-6a5184a9/

Jiali Wang, Ph.D in Statistics, RSFAS, ANU. 2015 - 2018
Co-Pri Adv

- Project: Recent Developments of Copula-Based Models to Handle
  Missing Data of Mixed-Type in Multivariate Analysis

- Recipient of the 2018 Dennis Trewin Prize presented by the Statistical Society of Australia - Canberra Branch.

- LinkedIn: https://www.linkedin.com/in/jiali-wang-89244513b/

Mark Dawkins, Honours in Statistics (H1), RSFAS, ANU. 2017
Co-Pri Adv

- Project: Melded Bayesian Inference for Stochastic Theoretical Models
  with Applications in Agent Based Modelling

- LinkedIn: https://www.linkedin.com/in/mark-dawkins-479762122/

Jaron Lee, Honours in Statistics (H1), RSFAS, ANU. 2016
Pri Adv

- Project: A Variational Bayes Approach to Clustered Latent
  Preference Models for Directed Network Data

- Recipient of an ANU University Medal

- LinkedIn: https://www.linkedin.com/in/jaron-jr-lee/

Fui Swen Kuh, ANU Summer Research Scholar 2015
from the Department of Statistics, University of Auckland. Pri Co-Adv

- Project: Social Network Analysis on Food Web and Dispute Data

- LinkedIn: https://www.linkedin.com/in/swenkuh/

Seoyoon Cho, CSIRO Industrial Trainee 2014
from the Department of Statistics, Korea University. Co-Adv

- Project: Modeling Network Data Using PyStan

- Received Ph.D. in Biostatistics from University of North Carolina

Hyangki Lee, CSIRO Industrial Trainee 2014
from the Department of Statistics, Korea University. Co-Adv

- Project: Modeling Network Data Using PyStan

Yaroslav Mukhin, M.S. in Statistics, University of Nevada, Las Vegas. 2010 - 2012
Mentor

- Project: Inference for the Solow Growth Model: A Bayesian Melding Approach
- Received Ph.D. in Economics from Massachusetts Institute of Technology
- LinkedIn: https://www.linkedin.com/in/yaroslav-mukhin-6b7890229/

Maxym Myroshnychenko, NSF Biomathematics Scholar and   2010 - 2012
UNLV McNair Scholar, University of Nevada, Las Vegas.   Pri Adv
- Project: Analysis of Morris Water Maze Data with Bayesian Statistical Methods
- Received Ph.D. in Neuroscience from Indiana University Bloomington
- LinkedIn: https://www.linkedin.com/in/maxym-myroshnychenko-b79b2b51/

Internship (Consulting) Advising & Mentoring

Rory Williams, ANU College of Business and Economics Internship Program.   2021
- Joint internship through Australian Department of Social Services   Pri Adv

James Kondilios, ANU College of Science Internship Program.   2019
- Joint internship through Airservices Australia   Pri Adv

Jizhi Li, ANU College of Science Internship Program.   2017
- Joint internship through the National Disability Insurance Agency, Australia   Pri Adv

Yiran Yao, ANU College of Science Internship Program.   2017
- Joint internship through the National Disability Insurance Agency, Australia   Pri Adv

Selected Professional Activities & Awards

Associate Editor for the Journal of the American Statistical Association.   2019 - Present

Associate Editor for the quarterly bulletin   2016 - Present
of the International Society for Bayesian Analysis.

Instructor for the statistics/data science workshop for   2019
the National Youth Science Foundation of Australia.

Best Poster Award. Young Statisticians' Meeting (satellite meeting of the ISI), Dublin, IRL.   2011
- Title: Dirichlet Processes for Quantal Response Equilibrium Models - Examination of Pegged Exchange Rate Policies

Best Poster Award. Political Networks Conference, Cambridge, MA, USA.   2011
- Title: A Bayesian Mixed Effects Model for Longitudinal Social Network Data

Student Paper Award. Joint Statistical Meeting, Salt Lake City, UT, USA.   2007
ASA Section on Bayesian Statistical Science
- Title: A Bayesian Mixed Effects Model for Longitudinal Social Network Data

Recent Seminars

Invited. Professor Adrian Raftery's ABCDE Conference, University of Washington,   2024
Seattle, WA, USA.
- Modelling National Latent Socioeconomic Health and Examination of Policy Effects

Invited. Virginia Chapter of the ASA Conference, Charlottesville, VA, USA.   2024
- Bayesian Optimized Bootstrap (BOB) for Uncertainty Quantification in Gaussian Mixture Models

Invited. The International Environmetrics Society, Adelaide, AUS.   2024

- A Bayesian Melding Approach for Stochastic Agent-Based Models

Invited. Virginia State University, Petersburg, VA, USA. 2023
- A Bayesian Melding Approach for Stochastic Agent-Based Models

Invited. Virginia Commonwealth University, Richmond, VA, USA. 2023
- A Bayesian Melding Approach for Stochastic Agent-Based Models

Professional Societies

American Statistical Association	2002 - Present
American Political Science Association	2002 - Present
Statistical Society of Australia	2010 - Present
International Society for Bayesian Analysis	2017 - Present