

CURRICULUM VITAE

CLAIRE ANN MILLER (NEE FERGUSON)

EMPLOYMENT HISTORY

- (August 2011-Present) Lecturer (Grade 8) in Statistics, University of Glasgow.
- (January 2007-July 2011) Lecturer (Grade 7) in Statistics, University of Glasgow.
- (August 2009-Present) Adviser of Studies, University of Glasgow.
- (Oct 2003-Dec 2006) Teaching Assistant (as part of PhD studentship), University of Glasgow.

QUALIFICATIONS

- (Oct 2003-July 2007) PhD Statistics - 'Univariate and Multivariate Statistical Methodologies for Lake Ecosystem Modelling', University of Glasgow.
- (1999-2003) BSc Joint Honours Mathematics and Statistics, University of Glasgow, (1st Class).

RESEARCH

Environmental and Ecological Statistics including regression, time series analysis, nonparametric modelling (in particular additive modelling) and varying-coefficient models. Projects include effects of climate change and eutrophication in lake ecosystems, environmental risk, air pollution and human health, bathing water quality and nutrient levels in rivers; spatiotemporal modelling of signals from magnetoencephalography and electroencephalography.

The above projects involve the following collaborators: the Centre for Ecology & Hydrology, the Scottish Environment Protection Agency, the Environment Agency of England and Wales, the Scottish Association for Marine Science, Scottish Water, Psychology (University of Glasgow), Geography (University of Glasgow), Environmental Science (University of Stirling), Geography (University of Edinburgh and University of Dundee), Plymouth Marine Laboratory.

I am also involved in student research collaborations with Nursing and Health care and Health Assessment and Health Economics (University of Glasgow).

GRANT APPLICATIONS

Awarded

- (Oct 2012) Glasgow University Engineering & Physical Sciences Research Council (EPSRC ISG), funding extension, “Data Rich, Information Rich’ Statistical modelling and transformation of routine environmental monitoring data”, £20,000, funding from Scottish Water £13,000 (Co-Investigator)
- (June 2012) Natural Environment Research Council (NERC) Consortium grant, “Global Observatory of Lake Responses to Environmental Change (GloboLakes)”, led by The University of Stirling (Principal Investigator for Glasgow University), £397, 591 (Principal Investigator).
- (May 2012) Engineering & Physical Sciences Research Council (ISG), “Data Rich, Information Rich’ Statistical modelling and transformation of routine environmental monitoring data”, £9,533 (Co-Investigator).
- (June 2011) Risk of Shellfish Poisoning from Pseudo-nitzschia funded by Scottish Association for Marine Science, (Principal Investigator), £1440.
- (Nov 2009) Physiotherapy Research Foundation “Reliability and validity of the figure-of-eight method of measuring hand size in patients with breast cancer related lymphoedema” (Co-Investigator), £9908.
- (Mar 2009) Collaborative agreement GU & EA, “Spatiotemporal Modelling of Nitrate and Phosphorus in River Catchments for England & Wales.”, (Principal Investigator), £61,711.
- (July 2008) NERC grant (NE/G001170/1) “Statistics, environmental management, policy and regulation: developing the evidence base.” (Co-Investigator), £295,464.
- (August 2007) Awarded a Royal Society conference grant to attend and present at ISI2007, £997.
- (April 2007) NERC grant (NE/E00900X/1), “Strategies to manage toxic cyanobacterial blooms in lake remote sensing, modelling and cost benefit analysis”, successfully completed, (Co-Investigator), £12,563.

Submitted

NERC case studentship competition - “Data transformation capabilities- information and inference from spatial statistical models for the water environment” joint with SEPA(Co-Investigator).

Submitted but unsuccessful

- Erasmus Mundus grant for a joint MSc (taught), submitted jointly with Marian Scott. This application was joint with Vienna University of Technology, Austria and the University of Girona, Spain (April 2012)

- (November 2011) CEH algorithm studentship application, “Assessing the sensitivity of Loch Leven to regime shifts resulting from changes in external environmental drivers”, joint with CEH (PI for Glasgow)
- (Jan 2010) Outline bid for the NERC Environment and Human Health Scheme “The effects of acute and chronic exposure to phytoplankton toxins and human health under a changing climate: implications for regulatory policy”, 9 partner institutions (PI for Glasgow University), main project PI at University of Stirling.
- (Dec 2009) “Spatiotemporal modelling of alkalinity in WFD waterbodies for England, Wales, Scotland and Northern Ireland”, Environment Agency tender. (co-investigator).
- (Nov 2009) Application for a Kelvin Smith Scholarship, University of Glasgow jointly with a colleague in Psychology.
- (June 2008) NERC grant NE/G002533/1, “Climate Change and the Management of Cyanobacterial Blooms and Toxins (CLIMATOX).” The outline bid was successful, but we were unsuccessful at the final application stage, PI for Glasgow University, 8 partners including German and French institutions, Cranfield University was the main PI.
- (Aug 2007) Scottish Executive tender, “Evaluation and development of cryptosporidium risk assessment” (co-investigator).

PUBLICATIONS

(see separate attachment)

In Preparation

Miller, C. et al. Spatiotemporal statistical modelling of long-term change in river nutrient concentrations in England & Wales (to be submitted to Science of the Total Environment)

Haggarty, R., Miller, C., Scott, E.M. Spatially Weighted Functional Clustering of River Network Data (to be submitted to Journal of the Royal Statistical Society Series C)

Finazzi, F., Fasso, A, Scott, M. and Miller, C, A statistical approach to the study of the temporal coherence of global time series.

Ventrucci, M, Bowman, A. Miller, C, Gross, J. Quasi-periodic Spatiotemporal Models of Brain Activation in Single-Trial MEG Experiments.

Ponomarev, D., Miller, C., Govan, L. Complications and Hospitalisations following incident stroke.

Recent Conference Abstracts

(see *Publications* for refereed conference proceedings)

Miller, C, McColl J, Scott, E.M., Bowman, A. Enhancing international mobility and employability in Statistics programmes ...a degree is not enough... submitted for University Learning and Teaching conference, April 2013.

Finazzi, F., **Miller**, C. and Scott, M. A statistical approach to the study of the temporal coherence of global time series, GloboLakes workshop, December 2012.

E M Scott, D Lee, C **Ferguson**, R I Smith, Simple metrics, complex environmental systems, TIES 2009.

Ruth Haggarty, Marian Scott, Claire **Ferguson**, Extreme Value Theory Applied to the Definition of Bathing Water Discounting Limits, TIES 2009.

Lee, D., **Ferguson**, C. and Scott, E.M. Air quality indicators in health studies. CLADAG 2009.

Laurence Carvalho, Claire **Ferguson**, Iain Gunn, Helen Bennion, Bryan Spears, Carl Sayer and Linda May, Water quality of Loch Leven: responses to enrichment, restoration and climate change, Loch Leven anniversary conference, Dec 2008.

Carvalho, L., **Ferguson**, C.A., Scott, E.M., Hunter, P.D. and Tyler, A.N. 2008. Modelling and monitoring cyanobacterial blooms in freshwater lakes. Shallow Lakes Conference, Uruguay.

TEACHING, RESEARCH SUPERVISION AND ADMINISTRATION

Undergraduate and Postgraduate-taught

- Lecturing - Practical Statistics S1B (2003-2008), Statistics for Psychologists S1C (2008-2009), Regression Modelling S2Y (2007-present), 4H Data Analysis (2007-2011), IBLS3 (2010/2011), Statistical Inference (level M) (2011-present), Advanced Regression (4H) (2012-present).
- Tutorials - Second (2004-2010), third year (2007-2008, 2009-2010), M-level (2011-present), fourth year (2012-present).
- Computing practicals - First (2003-2006) and second year (2007-present), M-level (2011-present), fourth year(2012-present).
- Projects - Junior (1) (2007) and senior honours (3) (2008, 2009, 2010) and 3 in 2011, 4 in 2012, 3 in 2013.
- Projects - MSc (taught) 2012
- Exam setting and marking: S1B(2003-2008), S1C(2008-2009), S2Y(2007-present), 4H (2008, 2010, 2013), IBLS3 (2010/11), Level M (2012, 2013).

- Undergraduate summer research students: Laura Houston (funded by Carnegie Trust) (summer 2007), results were presented at the U21 undergraduate conference in Singapore in 2008. Conghai Wang (2011), funded by Scottish Association of Marine Science, Kelly Gallacher (2011)

Postgraduate

Research Students

- Ruth Haggarty, MSc student September 2007 - September 2008, successfully completed.
- Firdaus Hamzah, PhD student February 2008 - January 2012, successfully completed.
- Ruth Haggarty, PhD student October 2008 - October 2012, successfully completed.
- Kathakali Ghosh-Mukgurjee, PhD student November 2010 - ongoing.
- Kelly Gallacher, PhD student (October 2011 - ongoing)
- Amira El-Ayouti, PhD student (starting January 2013)
- Second supervisor for David O'Donnell, PhD student (2007 - 2011).

Research Assistants

PDRA to be appointed from September 2013-September 2017 for GloboLakes NERC consortium project, I am the principal investigator on this project.

Ruth Haggarty, Statistics, University of Glasgow, EPSRC IS/Scottish Water funded project (Jan-July 2013), I am a co-investigator on this project (2009-2012).

Jude Eze/Ruth Haggarty, Statistics, University of Glasgow, NERC grant (NE/G001170/1), I was a co-investigator on this project (2009-2012).

Ana-Maria Magdalena, Statistics, University of Glasgow (Environment Agency collaborative project) 2009-2010, I was the Principal Investigator for this project.

Taught Courses

- Training session for SEPA staff (tutor), April 2011 and April 2012.
- NERC sponsored course (tutor) - a week-long course "Statistics for Environmental Evaluation", repeated yearly (2007-present), University of Glasgow.
- SAGES sponsored course (tutor) - a week-long course, (2009), University of Glasgow.
- Eurolimpacs course (tutor) 5th-7th Nov 2007, University College London.

School Events

- (2009, 2010) Masterclasses in Statistics at Stirling and Glasgow University.
- (2009, 2010) Lecturer for Science Festival Statistics event, University of Glasgow.
- (2008, 2009) Lecturer for taster week Statistics sessions to schools, University of Glasgow.
- (2005) Practical taker for two schools workshop sessions on Statistics, Dept. of Statistics, University of Glasgow (Schools Faculty Lecture Event).

Administrative Duties

- Convenor of Statistics Learning and Teaching Committee (2010-present).
- Glasgow lead for GloboLakes project, September 2012-September 2017
- Project manager for Environment Agency project (2009-2010), University of Glasgow.
- Lead organiser for the conference IWSM2010, hosted by Dept. of Statistics, University of Glasgow in July 2010.
- Undergraduate Adviser of Studies to 45-50 students (2009-present), University of Glasgow.
- Elected member of the Executive Committee of the Statistical Modelling Society (Dec 2010-present). Re-elected in December 2012.
- Elected Secretary of the Statistical Modelling Society (Dec 2010-present). Re-elected in December 2012.
- Programme co-ordinator for MSci in Statistics with work placement degree (Jan 2012-present)
- Mentor for University teacher (Oct 2011-Sept 2012)
- Appointment panel for Senior University teacher (May 2012)
- Appointment panel for Graduate Teaching Assistants (August 2011 and August 2012)
- Member of the School learning and teaching committee (2010-present), attending college learning and teaching committee when required.
- Member of the School MyCampus working group (2012-present)
- MyCampus plan builder/maintenance for Statistics (2012-present)
- Course coordinator for 4H Data Analysis course (2009-2011), University of Glasgow.
- Course coordinator for IBLS3 course (2010/11), University of Glasgow.
- Organiser for Applicant: visit afternoons, information evenings and information days and open days. Organiser for taster weeks, science festival and schools faculty lecture event (2008-2010), University of Glasgow.

- Member of Statistics department teaching committee (2007-2010), University of Glasgow.
- Member of School of Mathematics and Statistics teaching committee (2010-present), University of Glasgow.
- Member of Statistics department, FIMS and Science recruitment committees (2008-2010), University of Glasgow.
- Statistics department representative at supermarket sessions for International students (2009-2010), University of Glasgow.
- Member of Statistics department committee responsible for merging the S1B and S1C courses (2007-2008), University of Glasgow.
- Member of the Statistics S2 review team (2008-2009), University of Glasgow.
- Member of the Scientific Committee for IWSM2009, Cornell University, Ithaca, New York and IWSM2011, Valencia, Spain.
- (March 2006) Organiser (deputy chair of local committee) for Research Students Conference 2006, University of Glasgow.

THESIS EXAMINING

Karina Paterson MSc Statistics Dec 2008 (Internal), University of Glasgow.

Francisco Rincon MSc Statistics Dec 2009 (Internal), University of Glasgow.

Steven Morrison MSc Statistics Jan 2011 (Internal), University of Glasgow.

Olalekan Obisean MPhil Statistics Sept 2011 (External), University College London

Andisheh Bakhsi MSc Statistics Jan 2012 (Internal), University of Glasgow

Greg Halbert MSc Statistics Oct 2012 (Internal), University of Glasgow.

INVITED LECTURES

- (May 2012) Mathematical Biology lunchtime talk, University of Glasgow.
- (Sept 2011) Invited plenary speaker at Spatial 2, Italy. The International Environmetrics Society regional conference, September 2011.
- (7th-9th April 2010) Statistical Aspects of Environmental Risk Workshop, SAMSI, North Carolina. Talk title “Lake Ecosystems: Quality, Risk and Change”.
- (3rd June 2010) Royal Statistical Society Young Statisticians Meeting. Talk title “Lake Ecosystems: Quality, Risk and Change”.

AWARDS AND PRIZES

- (July 2009) The International Environmetrics Society 2009 conference - best poster prize.
- PhD 2005/2006 - best student presentation at the Research Students Conference, Cambridge. Best student presentation at the International Workshop on Statistical Modelling, Sydney, Australia.
- PhD 2005 - Sir Godfrey Collins Travelling Scholarship, University of Glasgow.

PAPER REVIEWING

I have reviewed papers for the following journals since January 2007:

Biostatistics, Environmetrics, Advances in Statistical Analysis, International Statistical Review, Applied Ecology, Freshwater Biology, Marine Ecology Progress Series, Global Climate Change, Environmental Management, Clinical Rehabilitation, Global Change Biology, Environmental Modelling and Assessment, Science of the Total Environment, Water, International Workshop on Statistical Modelling 2009, International Workshop on Statistical Modelling 2011.

PROFESSIONAL MEMBERSHIPS

- Elected Member of the Statistical Modelling Society executive committee over two terms (2011-2012,2013-2014),
- Elected secretary of the Statistical Modelling Society (2011-2014).
- Fellow of the Royal Statistical Society.
- Member of the Statistical Modelling Society.
- Member of The International Environmetrics Society (TIES).