

EDUCATION

University of St Andrews

St Andrews, UK

Ph.D. in Statistics, Advisors: Prof. Andy Lynch, Dr. Giorgos Minas

2019–Current

- Research area: Statistical analysis and modelling biomedical/clinical data

University of Birmingham

Birmingham, UK

M.S in Toxicology, Merit

2017–2018

- Thesis: “Metabolomic profiling of heart tissues to compare the metabolic consequences of different cardioplegia solutions during ischaemia and ischaemia-reperfusion”

Shenyang Pharmaceutical University

Shenyang, CN

B.S. in Pharmacy, Weighted average score: 81/100

2012–2017

- Titled “The outstanding graduate”

PUBLICATIONS

1. **Guo, N.**, Minas, G., Synowsky, S.A., Dunne, M.R., Ahmed, H., McShane, R., Bhardwaj, A., Donlon, N.E., Lorton, C., O’Sullivan, J. and Reynolds, J.V., 2022. Identification of plasma proteins associated with oesophageal cancer chemotherapeutic treatment outcomes using SWATH-MS. *Journal of Proteomics*, 266, p.104684.
2. Li, L., Chen, J., Qin, G., Qi, Y., Chen, Y., Li, M., Zhang, Q., Cheng, Y., **Guo, N.**, Moutari, S. and Moore, J.E., 2023. Tear Film Lipid Layer Changes Following Combined Effect of Heated Eye Mask with Intense Pulsed Light Therapy for Evaporative Dry Eye: A Randomized Control Study. *Photobiomodulation, Photomedicine, and Laser Surgery*, 41(8), pp.435-444.
3. Chen, J., Qin, G., Li, L., Qi, Y., Xia, Y., Zhang, Q., Wu, Y., You, Y., Yang, L., **Guo, N.** and Moutari, S., 2023. The combined impact of intense pulsed light combined and 3% diquafosol ophthalmic solution on evaporative dry eye: a randomized control study. *Ophthalmology and Therapy*, pp.1-13.

GROUP PROJECTS & WORKSHOPS

ICMS and MAC-MIGS Modelling Camp

May 2022

Project: Mathematical modelling of carbon capture by adsorption

- Collaborated with other five fellows to analyse the mathematical model of the CO₂ adsorption process; solved and presented both linear and non-linear analytical solutions.
- Contributed by conducting simulation studies to test the effects of variables, data visualisation and presenting.

Correlation One

Aug 2020 - Oct 2020

Data Science for All/Women Summit

- Conducted a model-based feature importance analysis on survey data recognised the three most important social-economic factors that affect people’s opinions on the COVID-19 vaccine.
- Guided the team with missing data imputation and normalisation for data from 26,000 surveys using Python, guaranteed the successful implementation of machine learning algorithms.

Unilever Safety & Environment Assurance Centre

April 2018

Project: Using ChemFate PBPK model to assess the risks and toxicity of Perfluorooctanesulfonates (PFOS)

TALKS & POSTER

- **2023 Maths Division Presentation:** *“Evaluation the performance and effects of Immunoaffinity-based Columns for Human Plasma Depletion to Facilitate SWATH Proteomics”*
- **2022 Maths Division Presentation:** *“Analysis of Omics Data in Cancers”*
- **2021 StAMBio seminar** *“A Multivariate Model-based Approach for Treatment Response Prediction in Oesophageal Adenocarcinoma (OAC)”*
- **2019 SMMB** *“Comparison of Clustering/Classification Methods”*
- **2018 Poster** *“The effects of three cardioplegia solutions on myocardial metabolism during ischaemia-reperfusion in a Langendorff murine model”*

WORK EXPERIENCE

University of St Andrews

Teaching undergraduate tutorials and workshops

2019-2023

- **Tutorial**
- MT1002 Mathematics (teaching 10 groups during 2019 - 2022)
- **Computing session & Workshop**
- MT3510 Introduction to Mathematical Computing
- MT2504 Combinatorics and Probability
- MT2503 Multivariate Calculus
- MT2000 Computing workshop
- MT1007 Statistics in Practice
- **Marking**
- MT2503 Python computing projects - around 100
- **Mentoring**
- Piscopia Mentorship Scheme - 2 undergraduates

Parexel

Drug safety associate

2019

- Identified issues and safety concerns with drugs by analysing hospital or healthcare professional records.
- Generated drug safety reports (approximately 300 cases/month) according to regulatory requirements and standards.
- Conducted quality review for data entered in Oracle Argus Database, ensured 100% accuracy of medical terms usage, causality etc.

He Eye Specialist Hospital

Intern in Clinical Molecular Genetics Lab

2018

- Conducted multiple sequence alignment, and evolutionary analysis of patients' gene data for homologs discovery regarding eye function
- Tracked the genotype-phenotype correlations and assisted doctors in the diagnosis and treatment of diseases.

EXTRACURRICULAR ACTIVITIES

- **CSSA Project & Event committee member (2019-2020), Student Union member (2012-2017)** Planned and managed various social, cultural, and educational events with attendees ranging from 20 to 100.
- **Entrepreneurship** founded an online jewellery shop in 2018, responsible for all aspects of the business – product design, marketing, customer service etc., achieved 2,000 Yuan sales in the first week.