

# Anna Quaglieri (PhD)

BIOINFORMATICS DATA SCIENTIST

Mass Dynamics

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## Education

### PhD Student, WEHI Bioinformatics, Speed Lab

Feb16-Sept19

- PhD thesis: "Using transcriptomics to study relapse in acute myeloid leukaemia" [↗](#). The research focused on building a statistical framework to improve the understanding of the relapse mechanisms in particular subtypes of Acute Myeloid Leukemia.

### Master Degree in Statistics, Universities of Bologna and Melbourne

Sep12-Jul14

### Master Thesis, WEHI Bioinformatics, Bahlo Lab

Sep12-Jul14

- Title: "Genome-Wide association study in presence of relatedness – Application to an eye disorder". Preparation and analysis of SNP-Chip data from patients with a rare genetic eye disease, known as MacTel. Goal to perform a pilot GWAS for a larger study that was conducted for Scerri TS et al, 2017, Nature Genetics [↗](#)

### Internship in Biostatistics, S.Orsola-Malpighi Hospital, Bologna

Jul12-Sept12

- Part of Master degree. The work involved data collection, cleaning, statistical modeling and led to the publication Farioli A et al (2014) [↗](#) which was awarded the ISICO Paper Prize in 2014

### Undergraduate Degree in Statistics, Universities of Bologna and Glasgow

Sep09-Jul12

- Title of Statistics Senior Honours project in Glasgow supervised by Professor Marian Scott (University of Glasgow): "Cancer in dogs and quality of life impact". Data analysed using generalised additive models and mixed effect models for longitudinal data.

## Employment

### Bioinformatics Data Scientist at Mass Dynamics, Melbourne

May21-Current

- Guide Product team decisions with regards to statistical and bioinformatics techniques;
- Support users with methods and platform consultation so that they can achieve their outcome;
- Develop the scientific methods and software assets of the platform. Developed R Package MassExpression [↗](#) to support processing of label-free quantitative data.
- Participate and present at scientific conferences and contribute to scientific manuscript writing (Contributed to Bloom J et al (2021) [↗](#))

### Data Scientist Consultant at Eliiza, Melbourne

Nov19-May21

- Developed a Python workflow to pre-process and identify burnt areas from satellite images
- Led the development of a Python library to automate information extraction from documents. Now this is a product of the company Thea [↗](#).
- Built classification models used and deployed into client's production environment

### Tutor in Stastics at University of Melbourne

Mar18-May18

- "Critical thinking with data (UNIB10006)" and "Data and decision making (MAST90072)"

### Bioinformatics Research Assistant, WEHI, Majewski Lab

Oct2019-Jan2019

- Completion of PhD projects published in two papers: Courtney D Nardo et al (2020) [↗](#) where I performed statistical analysis of the RNA-Seq data and Quaglieri et al, (2019), BMC Bioinformatics [↗](#) where I was the first author and performed all the analyses.

### Bioinformatics Research Assistant, WEHI, Speed and Bahlo Labs

Sep13-Mar16

- Speed lab: Worked as the main statistician in epigenetics projects (Under publication) and collaborated in the creation of an R package for GC bias correction of ChIP-Seq data where the task was to upgrade existing R functions (unpublished work).

### Bioinformatics Research Assistant, WEHI, Bahlo Labs

Sep13-Mar16

- Bahlo lab: Statistician in the team which discovered the first genetic clues for Macular Telangiectasia Type 2 disease through Genome-Wide Association study (Bahlo lab) (Scerri TS et al 2017, Nature Genetics) [↗](#).

## Leadership Roles

### R-Ladies Melbourne (President and Co-organiser)

Oct16-Ongoing

- The group (Meetup page: [www.meetup.com/R-Ladies-Melbourne/](http://www.meetup.com/R-Ladies-Melbourne/), founded in 2016, is the first R Programming community for women and supporters in Australia. President of the group in 2017/2018 where we organised 12 events (workshops, seminars and networking nights) doubling in members; defined the structure to become a not-for-profit association; provided funding for women to attend the useR! conference; gained a new sponsor Nous Group and renewed sponsorship from CSL. Helped running and organising events since 2016.

### Parkville Toastmasters (Vice President Memberships)

2022-Ongoing

- As Vice President Membership (VPM) I'm in charge of running inductions with new members to introduce them to the club and how Toastmasters work; setting up new members into the system; organising mentorship between new and established members.

## Bioconductor Code of Conduct (Secretary)

2021-Ongoing

- The CoC committee is responsible to file incidents and lead to a conflict resolution which will depend on the gravity of the incident. I share the same role as any other member in supporting conflict resolution and as secretary I set up meetings dates with committee members and organise minutes.

## useR! Conferences organising committee

2018/2019 Brisbane/Toulouse

- UseR! Is one of the most important annual international R conferences. Main task to review abstracts and scholarship applications. In Brisbane also organised the logistics of R-Ladies Melbourne travel scholarships to support national participants.

## Workers Club Lions Australian Football Club (Treasurer and Captain)

2017-2021

- Treasurer: The role involves looking after incoming funds to the club which come from selling merchandise at the Workers Club and fundraising events. Captain: On field captain of the football team.

## Mentor at BrainSTEMM

2018.0

- Co-mentored a group of four high school girls from Gippsland for a three months period. Students for exposed to what it means to do research in science; learnt coding and basic principles of statistics for the first time; presented their final work in an inspiring video and organised a coding day where they became coding instructors for their classmates.

# Public speaking

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## Conference: American Society of Mass Spectrometry Conference Selected Poster

Jun23

- Exploring protein expression across multiple experiments using Mass Dynamics.

## Invited speaker at Glycoscience: Clinical Glycoproteomics and Machine Learning

Apr23

- Mass Dynamics: The New Science of Collaboration (Event page: [🔗](#))

## Conference: Lorne Proteomics 2023 Selected Poster

Feb23

- Mass Dynamics 2.0: The New Science of Collaboration

## Department of Molecular Life Sciences, University of Zürich

Aug22

- Introductory talk to Mass Spectrometry-based Proteomics while visiting Mark Robinson laboratory in the Department of Molecular Life Sciences, University of Zürich.

## Conference: American Society of Mass Spectrometry Conference

Jun22

- Selected talk at ASMS (American Society of Mass Spectrometry) 2022 talk on automated benchmarking. Title: Automated benchmarking enables continuous confidence in scientific software development.

## Invited speaker at data science career events (Australia)

2021-2022

- Invited speaker at the Victorian branch of the Statistical Society of Australia (SSA VIC) Industry Showcase Night (2021)
- Invited speaker at the Women in Machine Learning and Data Science (WiMLDS) Career Transitions in ML and AI meetup in Melbourne (2021)
- Invited speaker at the SSA VIC Early Career Panel (2022)

## Invited speaker at data science career events (R-Ladies Baltimore)

Nov21

- Panel Discussion on Careers in Data Science (Event page: [shorturl.at/akvDG](https://shorturl.at/akvDG))

## Speaker at R-Ladies Melbourne

Aug2021

- Title: A remote glimpse into the useR! 2021 conference (Recording: [🔗](#))

## Virtual Brown Bag by Eliiza

Sep20

- Title: "Automating Data Extraction from documents" (Recording: [🔗](#))

## PhD completion seminar (WEHI)

Aug19

- Title: Using the transcriptome to study therapy response in leukaemia (Recording: [🔗](#))

## Invited talk at the Monash Bioinformatics weekly seminar

Apr18

- Title: A suite of Bioinformatics tools to call and explore somatic mutations over time from RNA-Seq (Slides: [🔗](#))

## Speaker at R-Ladies Melbourne monthly meetup

Feb18

- Title: Producing publication ready document in R Markdown (Slides: [🔗](#))

## Conference: ABACBS Selected talk

Dec18

- Title: Correcting unwanted variation in RNA-seq data derived from a multicentre study of Leukemia (Slides [🔗](#))

## Conference: Bioconductor Asia conference Invited Speaker

2017/2018

- Invited talk to represent R-Ladies Melbourne (Slides: [🔗](#))

## Conference: Royal Statistical Society Selected Talk, Cardiff

Sep18

- Short talk: "Correcting unwanted variation in RNA sequencing data from a multi-centre study of leukaemia (Slides [🔗](#))

## Conference: useR! 2018 Selected Workshop Presenter, Brisbane

Jul18

- Looking to clean your data? Learn how to Remove Unwanted Variation with R (tutorial video [🔗](#)) and Introduction to textual analysis of social media data with R, using the idytext approach (tutorial video [🔗](#))

## Conference: COMBINE Invited instructor, Melbourne

2017

- Workshop title: “Introduction to Bioconductor”. Invited to prepare and lead part of the one-day workshop. Material at <https://github.com/COMBINE-Australia/2017-05-19-bioconductor-melbourne>.

## Conference: COMBINE Selected Poster and Talk

2016

- Poster Title and Short Talk: Finding Optimal Coverage to sequence RNA (Slides: [↗](#))

## Publications

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- A.J. Kueh; M.I. Bergamasco; **A. Quaglieri**; B. Phipson; C. S. N. Li-Wai-Suen; I.M. Lönnstedt; Y. Hu 2; Z. Feng; C. Woodruff; R.E. May; S. Wilcox; A.L. Garnham; M.P. Snyder; G.K. Smyth; T.P. Speed; T. Thomas; A.K. Voss 7 (2023) “Stem cell plasticity, acetylation of H3K14, and de novo gene activation rely on KAT7”. Cell Reports. DOI: 10.1016/j.celrep.2022.111980 [↗](#)
- **A. Quaglieri**; J. Bloom; A. Triantafyllidis; B. Green; M.R. Condina; P. Burton Ngov; G. Infusini; A. Webb (2022) “Mass Dynamics 2.0: An improved modular web-based platform for accelerated proteomics insight generation and decision making”. BioRxiv. DOI: <https://doi.org/10.1101/2022.12.12.517480> [↗](#)
- J. Bloom; **A. Quaglieri**; A. Triantafyllidis; P. Burton Ngov; G. Infusini; A. Webb (2021) “Mass Dynamics 1.0: A Streamlined, Web-Based Environment for Analyzing, Sharing, and Integrating Label-Free Data”. Journal of Proteome Research. DOI: 10.1021/acs.jproteome.1c00683 [↗](#)
- **A. Quaglieri**; C. Flensburg; T.P. Speed; Ian J Majewski (2020). “Finding a suitable library size to call variants in RNA-Seq”. BMC Bioinformatics 21, 553. DOI: <https://doi.org/10.1186/s12859-020-03860-4> [↗](#)
- C. D. DiNardo; I. S. Tiong; **A. Quaglieri**; S. MacRaid; S. Loghavi; F. C. Brown; R. Thijssen; G. Pomilio; A. Ivey; J. M. Salmon et al. (2020) “Molecular Patterns of Response and Treatment Failure after Frontline Venetoclax Combinations in Older Patients with AML”. Blood 135 (11): 791-801. DOI: 10.1182/blood.2019003988 [↗](#)
- **Anna Quaglieri** (2019) PhD Thesis: “Using transcriptomics to study relapse in acute myeloid leukaemia”, Published at University of Melbourne [↗](#)
- TS Scerri; **A. Quaglieri**; C. Cai; J JZernant; N. Matsunami; L. Baird; L. Scheppeke; R. Bonelli; LA Yannuzzi; M. Friedlander; MacTel Project Consortium; C.A. Egan; M. Fruttiger; M. Leppert; R. Allikmets; M. Bahlo (2017) “Genome-wide analysis identifies common variants associated with macular telangiectasia type 2” Nature Genetics 49(4):559-567. DOI: 10.1038/ng.3799 [↗](#)
- A. Farioli; S. Mattioli; **A. Quaglieri**; S. Curti; F.S. Violante; D. Coggon (2014) “Musculoskeletal pain in Europe: the role of personal, occupational, and social risk factors.” Scandinavian Journal of Work, Environment & Health 40(1):36-46. DOI: 10.5271/sjweh.3381 [↗](#)

## Public Outreach

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- 2017 **Research Video – “A genetic treasure map: new research into MacTel”**: Short Movie: <https://bit.ly/2CWnu2H>. This short movie tells the story of our WEHI team’s discovery of the genetic causes of MacTel published in Thomas S et al., Nature Genetics, 2017.
- 2018 **R-Ladies blog posts**: Summary and learnings after being the main organiser of the group in 2018: <https://r-ladiesmelbourne-team.netlify.app/> and <https://rladiesmelb2018.netlify.app/>.

## Awards and scholarships

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- 2018 **Poster Prize - COMBINE Conference**: Poster title: Correcting for unwanted heterogeneity in RNA sequencing data derived from a multicentre study of leukemia.
- 2016/2017 **Travel Grants – Bioconductor Asia Conference**: Both years invited to present about R-Ladies Melbourne achievements.
- 2016 **Travel Grant – ABACBS Bioinformatics conference**: Presented poster short Talk: Finding Optimal Coverage to sequence RNA (Slides: [shorturl.at/dlorS](http://shorturl.at/dlorS))
- 2016 **Poster Prize and Speaker prize – ABACBS and COMBINE Conferences**: Poster and short talk title: Finding a suitable library size to call mutations from RNA Sequencing.
- 2016 **AMSI Scholarship**: Winter school in Biological and Environmental Mathematical Modelling, Brisbane
- 2014 **ISICO Paper Prize**: Price from the Italian Scientific Institute of the Spinal Cord – 2014 for Farioli A et al, 2014.
- 2011/2013 **Scholarships - University of Bologna**: Funding to study at the University of Glasgow (2011); at the University of Melbourne and WEHI (2013)