LENA MORRILL

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PERSONAL INFORMATION

Date of birth	November 11, 1993
Place of birth	Barcelona, Spain
Nationality	Spanish and British

WORK AND EDUCATION

Computational Biologist in Single Cell Genomics (Postdoctoral)   **University of Oxford**
Full-time postdoc at the Sims group at WIMM, November 2022 –   *Oxford, United Kingdom*

PhD student in Mathematical Genomics and Medicine   **University of Cambridge**
Full-time student, October 2017 – April 2022   *Cambridge, United Kingdom*

Student in the Markowetz Lab working on compositional data analyses of exposures to mutational signatures.

During my training year I attended the following courses: Bayesian Modelling and Computation, Cancer Evolution, Markov Chains, Modern Statistical Methods, Percolation and Random Walks on Graphs, Statistical Learning in Practice, and I carried out two small research projects:

- Internship at the Department of Genetics at the University of Cambridge under the supervision of Dr. A. Scally. Thesis named 'Creating a model for the emergence of mutations in early development'.

- Internship at the Cancer Research UK Cambridge Institute under the supervision of Dr. M. Miller. Thesis named 'Deconvolution of bulk gene expression data in cancer samples using gene sets'.

Research Assistant/ Bioinformatician   **Stem Cell Institute**
December 2016 – June 2017   *Cambridge, United Kingdom*

MPhil in Computational Biology   **University of Cambridge**
Full-time Student, October 2015 – August 2016   *Cambridge, United Kingdom*
Grade: 75/100, Distinction

Modules: Approximate Bayesian Computation, Computational Neuroscience, Functional Genomics, Genome Informatics, Genome Sequence Analysis, Population Genetics, Scientific Programming, Structural Biology, Systems Biology.

Internship at the Department of Genetics at the University of Cambridge under the supervision of Dr. A. Scally. Thesis named 'Mutation Rates and Cell Growth in the Germline'.

BSc in Biology   **Universitat Autònoma de Barcelona**
Full-time student, September 2011 – July 2015   *Barcelona, Spain*
Grade: 8.45/10

Thesis named 'Cholera and Tuberculosis Now and Then'.

Exchange Programme (BSc in Biology)   **McGill University**
Exchange Student, September – December 2014   *Montréal, Canada*
One-term exchange period as part of my BSc. The top grade is A.

Modules: Ecological Dynamics (A-), Mathematical Models in Biology (A), Neural basis of behaviour (B), Perspectives of Science (A).

PUBLICATIONS AND REVIWING

- Smith, Philip, Thomas Bradley, **Lena Morrill Gavarró**, Teodora Goranova, Darren Ennis, Hasan Mirza, Dilrini De Silva et al. "The genomic landscape of recurrent ovarian high grade serous carcinoma: the BriTROC-1 study." *medRxiv* (2022).

- Sauer, Carolin M., James A. Hall, Dominique-Laurent Couturier, Thomas Bradley, Anna M. Piskorz, Jacob Griffiths, Ashley Sawle **et al.** "Molecular landscape and functional characterization of centrosome amplification in ovarian cancer." *bioRxiv* (2022).

- Maria Vias ∼ **Lena Morrill Gavarró**, Carolin M. Sauer, Debbie Sanders, Anna M. Piskorz, Dominique-Laurent Couturier, Stéphane Ballereau et al. "High-grade serous ovarian carcinoma organoids as models of chromosomal instability." *bioRxiv* (2022).

- Drews, Ruben M., Barbara Hernando, Maxime Tarabichi, Kerstin Haase, Tom Lesluyes, Philip S. Smith, **Lena Morrill Gavarró** et al. "A pan-cancer compendium of chromosomal instability." *Nature* 606, no. 7916 (2022): 976-983.

- Cheng, Zhao, Hasan Mirza, Darren P. Ennis, Philip Smith, **Lena Morrill Gavarró**, Chishimba Sokota, Gaia Giannone et al. "The genomic landscape of early-stage ovarian high grade serous carcinoma." *Clinical cancer research: an official journal of the American Association for Cancer Research* 28, no. 13 (2022): 2911.

- Jiménez-Sánchez, Alejandro, Paulina Cybulska, Katherine LaVigne Mager, Simon Koplev, Oliver Cast, Dominique-Laurent Couturier, Danish Memon **et al.** "Unraveling tumor–immune heterogeneity in advanced ovarian cancer uncovers immunogenic effect of chemotherapy." *Nature genetics* 52, no. 6 (2020): 582-593.

- Broutier, Laura, Gianmarco Mastrogiovanni, Monique Verstegen, Hayley E. Francies, **Lena Morrill Gavarró**, Charles R. Bradshaw, George E. Allen et al. "Human primary liver cancer–derived organoid cultures for disease modeling and drug screening." *Nature medicine* 23, no. 12 (2017): 1424-1435.

Reviewer for several top journals including Nature communications and PLOS Computational Biology.

CONFERENCE PRESENTATIONS OR POSTERS

- CFE-CMStatistics 2021. Presentation: *Differential abundance of mutational signatures using compositional models.* King's College London (virtual). December 2021.

- eSCAMPS 2021 – Revolutionizing Global Health with Big Data. Presentation: *Differential abundance of mutational signatures with a Dirichlet-Multinomial Model.* September 2021.

- EACR Goodbye Flat Biology: Next Generation Cancer Models. Poster presentation: *High grade serous ovarian cancer organoids recapitulate clinically relevant features of chromosomal instability.* October 2021.

- EACR Bioinformatics in Cancer. Poster presentation: *Detecting global changes in mutational processes with dirichlet-multinomial mixed models.* May 2021.

TEACHING AND SUPERVISING

Individual supervisions for the MPhil in Computational Biology, Michaelmas and Lent Term 2021-2022.

Supervisor of the Master's thesis of a student of the MPhil in Computational Biology, May-August 2021.

Assistant in the course of Cancer Evolution of the MPhil in Computational Biology, 2019-2021.

Supervisor in Bioinformatics to Part II Computer Science students at the University of Cambridge, Lent Term 2018, Michaelmas Term 2019, Lent Term 2019 (18 students in total).

Teaching assistant in three one-hour R computer lab sessions to the students in the MPhil in Computational Biology at the University of Cambridge, Michaelmas Term 2017.

TECHNICAL SKILLS

Computer Languages	Proficient in Python
	Proficient in R
	Well acquainted with the unix command line interface and shell scripts
	Knowledge of C and C++
Statistical inference	Proficient in Template Model Builder implementation of mixed-effects models
	Proficient in Bayesian model implementation with Stan
Workflow management	Proficient using snakemake
Bioinformatics tools	Very familiar with Bioconductor, assembling and alignment pipelines (Velvet, BWA, Tuxedo), Differential Expression Analysis (`DESeq2`, `DEXSeq`)
	Downstream analyses such as GSEA, mutation annotation, `GenomicRanges` analyses of copy number
Visualisation	`ggplot`, `visNetwork`, `shinyr`
Other	Well acquainted with LaTeX, github, vim

ADDITIONAL TRAINING

Analysis of single cell RNA-seq data. Virtual, 17, 24 June and and 1 July 2022.

Oxford Machine Learning Summer School (OXML). Virtual, 9-20 August, 2021.

WGC Advanced Course: Computational Systems Biology for Complex Human Disease: From static to dynamic representations of disease mechanisms. Sanger Institute (Virtual), 7-11 December 2020.

Computational Genomics Summer Institute (CGSI). Los Angeles, 15-19 July 2019.

R object-oriented programming and package development. Cambridge, 6 July 2018

AWARDS AND SCHOLARSHIPS

- **Wellcome Trust PhD Scholarship** (October 2017)
  Studentship that covers the cost of the PhD in Mathematical Genomics and Medicine

- **Distinction from Lucy Cavendish College** (December 2016)
  Award to selected students from Lucy Cavendish college who had passed their degree with First Class or Distinction

- **Medical Research Council (MRC)** (July 2015)
  Studentship that covers the tuition fees for the MPhil in Computational Biology

- **MOBINT** (November 2014)
  Scholarship to study in Canada awarded by the Catalan Government

- **Beca del Programa Propi UAB** (June 2014)
  Scholarship to study in Canada awarded by my home university

- **Distinction in University Entry Exams** (July 2011)
  Recognised in ceremony by the Catalan Government

- **Programa Joves i Ciència de Catalunya Caixa** (2009-2011)
  Scholarship from Catalunya Caixa

  - August 2011: Abric Romaní (Archeological work at a Neanderthal dwelling site).

  - August 2010: Astrophysics and Space Mission Design. Written work: *Measuring the Orientation of Galaxies*, with Alba Ramon.

OTHER

Data Champion at the University of Cambridge	2021 –
Engage For Change Programme	October 2020 - February 2021
Exchange officer of Clare College MCR	May 2018-May 2019
Fellow of the Cambridge Philosophical Society	December 2015
Shipmaster (Títol de Patró de Navegació Bàsica)	December 2013
Driving Licence	July 2012