Lyuba V. Bozhilova

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🖥 https://lbozhilova.github.io/

Education

2015–20 **Doctor of Philosophy**, *University of Oxford*.
Systems Approaches to Biomedical Science CDT
Department of Statistics

2011–15 **MMath Mathematics and Statistics**, *University of Oxford*.
Worcester College

Employment

since 09/23 **Senior postdoctoral researcher**, *University of Oxford*, Nuffield Department of Women's & Reproductive Health.
Maternity data analysis & fetal risk assessment.

09/21–08/23 **Bioinformatician**, *University of Cambridge*, MRC Mitochondrial Biology Unit and Department of Clinical Neurosciences.
Method development and analysis of mtDNA heteroplasmy dynamics.

01/21–08/21 **Departmental lecturer**, *University of Oxford*, Department of Statistics.
Network analysis. TB modelling. MSc student teaching and supervision.

08/20–12/20 **Research associate**, *Relation Therapeutics*, Bioinformatics.
Data science. Robustness in knowledge graph analysis.

07/19–09/19 **Research intern**, *BenevolentAI*, Biomedical Informatics.
Generation and analysis of tissue-specific networks.

Scholarly work

Peer-reviewed publications

[1] Glynos, A., **Bozhilova, L. V.**, Frison, M., Burr, S., Stewart, J. B., & Chinnery, P. F. (2023). High-throughput single-cell analysis reveals progressive mitochondrial DNA mosaicism throughout life. *Science Advances*.

[2] Burr, S. P., Klimm, F., Glynos, A., Prater, M., Sendon, P., Nash, P., Powell, C. A., Simard M.–L., Bonekamp, N. A., Charl, J., Diaz, H., **Bozhilova, L. V.**, Nie, Y., Zhang, H., Frison, M., Falkenberg, M., Jones, N., Minczuk, M., Stewart, J. B., & Chinnery, P. F. (2023). Cell lineage-specific mitochondrial resilience during mammalian organogenesis. *Cell*.

[3] Kremer, L. S.*, **Bozhilova, L. V.***, Rubalcava-Gracia, D., Filograna, R., Upadhyay, M., Koolmeister, C., Chinnery, P.F. & Larsson, N.G. (2022). A role for BCL2L13 and autophagy in germline purifying selection of mtDNA. *PLoS Genetics*.
* These authors contributed equally.

[4] Pardo–Diaz, J., **Bozhilova, L. V.**, Beguerisse–Diaz, M., Poole, P. S., Deane, C. M. & Reinert, G. (2021) Robust gene coexpression networks using signed distance correlation. *Bioinformatics*.

[5] **Bozhilova, L. V.**, Pardo–Diaz, J., Reinert, G., & Deane, C. M. (2020). COGENT: evaluating the consistency of gene co-expression networks. *Bioinformatics.*.
Software: `https://github.com/lbozhilova/COGENT`.

[6] **Bozhilova, L. V.**, Whitmore, A. V., Wray, J., Reinert, G., & Deane, C. M. (2019). Measuring rank robustness in scored protein interaction networks. *BMC Bioinformatics*, 20(1), 1-14.

Preprints

[1] **Bozhilova, L. V.**, Grindrod, P., Reinert, G., & Temcinas, T. (2022). Principles and Consequences of Evolutionary 'Omic Development: a Topological Perspective. *researchgate.net*.
Authors listed in alphabetical order.

Doctoral thesis

title	Confidence in protein interaction networks.
supervisors	Professor Gesine Reinert, Professor Charlotte Deane.
examiners	Professor Heather Harrington, Professor Nick Jones.

Undergraduate (MMath) dissertation

title	Uniform spanning trees.
supervisors	Louigi Addario–Berry.

Research supervision

06/21–09/21	Mike Fan, *MSc in Statistical Science*, Similarities and differences in protein interaction networks based on yeast two-hybrid versus tandem affinity purification data. Co-supervised with Professor Gesine Reinert.
06/21–09/21	Siqi Wu, *MSc in Statistical Science*, Investigating Lit, Gray and Dark trading venues using stock volume correlation networks. Co-supervised with Professor Gesine Reinert. Collaboration with the Royal Bank of Canada.
04/18–06/18	Francesca Romana Crucinio, *OxWaSP CDT rotation project*, Community detection in uncertain networks.. Co-supervised with Professor Charlotte Deane and Professor Gesine Reinert.

Teaching experience

Downing College, University of Cambridge

2023	**Revision supervisor**, Natural Sciences Tripos: Part III Systems Biology.

Department of Statistics, University of Oxford

2021	**Class tutor, class host**, MSc in Statistical Science.
2016–19	**Tutor, TA**, Probability and Statistics for Network Analysis. Simulation and Statistical Programming.

Mansfield College, University of Oxford

2018–19   **Tutor**, Probability and Statistics for Network Analysis. Probability. Differential Equations.

Oxford Internet Institute, University of Oxford

2018–19   **Teaching assistant**, Statistical Analysis of Networks.

St Edmund's Hall, University of Oxford

2017   **Tutor**, Probability and Statistics for Network Analysis.

d'Overbroeck's College

2014   **Teaching assistant**, *Undergraduate Ambassador Scheme*. Mathematics and statistics.

Conferences and talks

10/22   Talk, MRC BSU Open Science Workshop, Cambridge

10/22   Talk, OPIG 20th Anniversary Symposium, Oxford

10/22   Poster and short talk, MRC MBU Symposium, Cambridge

05/22   Short talk, Data Champions Forum, Cambridge

05/22   ggplot2 data visualisation workshop, MRC MBU, Cambridge

02/22   Seminar talk, MRC MBU Postdoctoral Society, Cambridge

07/19   Poster and Ignite talk, ISMB/ECCB 2019, Basel

10/18   Seminar talk, Networks seminar, Mathematical Institute, Oxford

09/18   Short talk, COSTNET18, Warsaw

10/17   Poster, COSTNET17, Palma

03/17   Poster, SEMSTAT: Statistical Network Science, Eindhoven

03/17   Poster, 2nd QBIOX Colloquium, Oxford

Administrative roles and voluntary work

02/23–08/23   **WIDE Committee (Chair)**, *MRC Mitochnodrial Biology Unit, University of Cambridge*. Wellbeing, Inclusion, Diversity and Equality. Co-organising the MRC MBU near-peer mentoring scheme. Member of the committee since 09/21.

03/22–08/23   **Data Champion**, *University of Cambridge*. Providing research data management (RDM) support and guidance. Promoting good RDM practice.

10/21–08/23   **Public Engagement Committee**, *MRC Mitochnodrial Biology Unit, University of Cambridge*.

10/21–02/23   **Postdoctoral Society Committee**, *MRC Mitochnodrial Biology Unit, University of Cambridge*. Communications officer. Co-organising joint seminar series with the Cambridge Institute for Medical Research.

03/21–08/21   **Teaching Committee**, *Department of Statistics, University of Oxford*.

02/21–08/21 **EquiStats**, *Department of Statistics, University of Oxford*.
Organising equity and diversity discussion events within the department.

Outreach

07/23 Family Day, Newnham College, University of Cambridge
03/23 Meet the Scientists, Beaulieu School & MRC MBU
11/22 Meet the Scientists, Cambridge Regional College & MRC MBU
10/22 Big Biology Day, Hills Road Sixth Form College
2018–19 Oxford Maths Festival
10/18 Graduate open day, Department of Statistics, University of Oxford
07/15 Undergraduate open day, Mathematical Institute, University of Oxford

Awards

2022–23 Postdoctoral affiliate, Newnham College, Cambridge
2015–19 Full studentship for EU students, EPSRC
2013 Scholarship for academic excellence, Worcester College, Oxford

Languages

Bulgarian **Native**
English **Fluent**
German **Basic**