Robert J. Noble

robjohnnoble.github.io
scholar.google.com/citations?user=lDDprHkAAAAJ

Academic employment

July 2020- Department of Mathematics, **City, University of London**
Lecturer

May 2018- Department of Evolutionary Biology and Environmental Studies, **University of Zurich**
June 2020 Postdoctoral researcher (20% contract) advised by **Hanna Kokko**

Feb 2017- Department of Biosystems Science and Engineering, **ETH Zurich**
June 2020 Postdoctoral researcher (80% contract from May 2018) advised by **Niko Beerenwinkel**

Jan 2014- Institut des Sciences de l'Evolution de Montpellier (**ISEM**)
Jan 2017 Postdoctoral researcher advised by **Michael Hochberg**

Education

Oct 2009- Department of Zoology, **University of Oxford**
Jan 2014 DPhil: *Antigenic variation and its evolution in* P. falciparum *malaria*
Supervisors: **Sunetra Gupta** and **Mario Recker**

Oct 1999- University of York
Jul 2003 Master of Mathematics (First Class)

Publications as first or co-first author

2020	*When, why and how clonal diversity predicts future tumour growth* **Noble R***, Burley JT*, Le Sueur C, Hochberg ME (* equal contributions)	**Evol. Appl.** eva.13057
2017	*Spatial competition constrains resistance to targeted cancer therapy* Bacevic K*, **Noble R***, Soffar A, Ammar OW, Boszonyik B, Prieto S, Vincent C, Hochberg ME, Krasinska L, Fisher D (* equal contributions)	**Nature Commun.** 8, 1995
2017	*Antibiotic stress selects against cooperation in the pathogenic bacterium* Pseudomonas aeruginosa Vasse M*, **Noble R***, Akhmetzhanov AR, Torres-Barceló C, Gurney J, Simon Benateau, Gougat-Barbera C, Kaltz O, Hochberg ME (* equal contributions)	**PNAS** 114, 546-51
2016	*Overestimating the role of environment in cancers* **Noble R**, Kaltz O, Nunney L, Hochberg ME	**Cancer Prev. Res.** 9, 773-6
2015	*Peto's paradox and human cancers* **Noble R**, Kaltz O, Hochberg ME	**Phil. Trans. B** 370, 20150104
2013	*The antigenic switching network of* Plasmodium falciparum *and its implications for the immuno-epidemiology of malaria* **Noble R***, Christodoulou Z*, Pinches R, Kyes S, Recker M, Newbold CI (* equal contributions)	**eLife** 2013.2:e01074
2012	*A statistically rigorous method for determining antigenic switching networks* **Noble R**, Recker M	**PLoS ONE** 7, e39335

Other publications

2017	*A framework for how environment contributes to cancer risk* Hochberg ME, **Noble R**	**Ecology Letters** 20, 117-34

2012	*Erasing the Epigenetic Memory and Beginning to Switch—The Onset of Antigenic Switching of* var *Genes in* Plasmodium falciparum Fastman Y, **Noble R**, Recker M, Dzikowski R	**PLoS ONE** 7, e34168

Submitted for publication

In review	*The logic of containing tumors* Viossat Y, **Noble R**	**bioRxiv** 10.1101/2020.01.22.915355
In revision	*Spatial structure governs the mode of tumour evolution* **Noble R**, Burri D, Kather JN, Beerenwinkel N	**bioRxiv** 10.1101/586735

Software

2017	*ggmuller: Create Muller Plots of Evolutionary Dynamics* **Noble R**	**CRAN**
2019	*demon: Deme-based oncology model* **Noble R**	**GitHub**

Teaching

2020- **Supervision (City, University of London)**
PhD, Veselin Manojlovic

2017-2019 **Supervision (ETH Zurich)**
Second year MSc thesis, Alexander Stein
Second year MSc thesis, Jeanne Lemant
Second year MSc thesis, Dominik Burri
Research internship (eight months), Cécile Le Sueur
First year MSc lab rotation project, Dominik Burri

Lecturing and tutoring (ETH Zurich)
Evolutionary dynamics (MSc; three terms; group tutorials, setting and marking exercises, and a self-authored two-hour lecture)

2016 **Supervision (ISEM)**
First year MEME MSc project, John Burley

2010-2013 **Supervision (University of Oxford)**
Second year BSc project, Charlotte Ward

Tutoring (University of Oxford)
Quantitative Methods (BSc; two terms)

Demonstrating (University of Oxford) Quantitative Methods (BSc; three terms); Epidemiology (BSc; two terms); Epidemiological Models (MSc; one term)

Funding

€140K personal funding for 2020-2023 from the NCI, via the Arizona Cancer Evolution Center

Co-awardee of Fondation Mathématique Jacques Hadamard grant *Optimization of a new type of cancer therapy* (€5K to support international collaboration in 2019-2020)

Biotechnology and Biological Sciences Research Council PhD fellowship 2009-2013

Travel grants: Lorentz Center 2017; Moffitt Cancer Center 2015; ECMTB 2011

Professional activities

Elected Advisory Committee member of the International Society for Evolution, Ecology and Cancer 2018-21

Reviewer: Cancer Research, Evolutionary Applications, F1000Research, Journal of Theoretical Biology, Nature Communications, Nature Ecology & Evolution, npj Genomic Medicine, PLoS Computational Biology, PNAS, Proceedings of the Royal Society B, Royal Society Open Science, Scientific Reports

Symposia: Co-organizer of "How does spatial structure affect tumour evolution?" (MBE conference 2017); co-organizer of "Aging & cancer through the lens of evolution" (ESEB conference 2019)

Other employment

Dec 2008- Sep 2009 **International HIV/AIDS Alliance, Preece House, Hove, BN3 1RE**
Communications

Aug 2004- Dec 2008 **AVERT, 4 Brighton Road, Horsham, West Sussex, RH13 5BA**
Science/heath communication and web development

Invited departmental seminars

Jun 2020 *Characterizing and forecasting tumour evolution*
Virtual Seminar on Modeling Biocomplexity (hosted by Andreas Deutsch)

May 2020 *Characterizing and forecasting tumour evolution*
Moffitt Cancer Center (virtual, hosted by David Basanta)

Jan 2020 *Cancer: evolution, ecology and bad luck*
University of Bath (hosted by Ben Ashby)

Dec 2020 *The logic of containing tumours*
University of Oxford (hosted by Eamonn Gaffney)

Sep 2019 *Cancer: evolution, ecology and bad luck*
University of Southampton (hosted by Lindy Holden-Dye)

Feb 2019 *Characterising the evolutionary modes of cancer and normal tissue*
TU Dresden (hosted by Andreas Deutsch)

Mar 2018 *Characterising the evolutionary modes of cancer and normal tissue*
University of Basel (hosted by Richard Neher)

Feb 2018 *The mode and predictability of intra-tumour evolution*
Wellcome Sanger Institute (hosted by Iñigo Martincorena)

Dec 2017 *The mode and predictability of intra-tumour evolution*
Boston University (hosted by Kirill Korolev)

Nov 2017 *Spatial constraints on intratumour evolution*
Harvard University (hosted by Martin Novak)

May 2017 *Models for understanding tumour evolution and improving cancer therapy*
University of Edinburgh (hosted by Bartlomiej Waclaw)

Mar 2017 *Evolution, ecology, and cancer risk: from naked mole rats to modern humans*
Chalmers University (hosted by Philip Gerlee)

Sep 2016 *Cancer: evolution, ecology and bad luck*
Harvard University (hosted by Martin Novak)

Feb 2015 *Data-based modelling of tumour evolution*
Moffitt Cancer Center (hosted by Robert Gatenby)

Conference talks

Aug 2020 *The logic of containing tumours*
Invited talk at the Society for Mathematical Biology virtual conference

Aug 2019 *Spatial competition constrains resistance to targeted cancer therapy*
International Society for Evolution, Medicine & Public Health conference, Zurich

Jul 2019 *Spatial structure governs the mode of tumour evolution*
Intelligent Systems for Molecular Biology / European Conference on Comp. Biology, Basel

Jun 2019 *Spatial structure governs the mode of tumour evolution*
Modelling Ecology & Evolution Zurich seminar, Zurich

Sep 2018 *Characterising the evolutionary modes of cancer and normal tissue*
Evolutionary Models of Structured Populations workshop, Plön

Dec 2017 *Spatial competition constrains resistance to targeted cancer therapy*
International Society for Evolution, Ecology and Cancer Conference, Tempe

Oct 2017 *Impact of tissue architecture on the nature and predictability of tumour evolution*
Satellite Symposium to the Louis-Jeantet Symposium, Geneva

Sep 2017 *Impact of tissue architecture on the nature and predictability of tumour evolution*
Basel Computational Biology Conference, Basel

Jul 2017 *Impact of tissue architecture on the nature and predictability of tumour evolution*
Intelligent Systems for Molecular Biology / European Conference on Comp. Biology, Prague

Apr 2017 *Evolutionary ecology of senescence and cancer risk: from naked mole rats to modern humans*
Modelling Biological Evolution conference, Leicester

Nov 2016 *Controlling drug resistance with adaptive therapy*
Invited talk at the second Modeling Tumour Evolution conference, Bielefeld

Sep 2016 *Cancer: evolution, ecology and bad luck*
Invited talk at the first Modelling Tumour Evolution conference, Bielefeld

Jul 2016 *Cancer risk: evolution, ecology and bad luck*
Joint Meeting of European Society for Mathematical and Theoretical Biology & Society for Mathematical Biology, Nottingham

Dec 2015 *Peto's paradox and human cancers*
Third International Biannual Evolution and Cancer Conference, San Francisco

Sep 2015 *Modelling ecological interactions of cancer clones*
Cancer Evolution Through Space and Time workshop, Plön

Jun 2015 *Peto's paradox and human cancers*
Invited talk at the Institute of Cancer Research, London

Apr 2015 *Eco-evolutionary models of tumour heterogeneity*
Invited talk at the Modelling Biological Evolution conference, Leicester

Mar 2015 *Modelling the evolution of tumour heterogeneity*
Invited talk at the Evolution and Cancer Conference, Montpellier

Nov 2014 *Data-based modelling of tumour evolution*.
Joint Meeting: Institute of Cancer Research & French Consortium on Cancer Evolution, London

June 2011 *Using iterative methods to determine an antigenic switching network in* Plasmodium falciparum
European Conference on Mathematical and Theoretical Biology, Krakow

May 2011 *Determining the switch pathway of the* var *gene repertoire of* Plasmodium falciparum
Biology and Pathology of the Malaria Parasite, Heidelberg