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

2020	*Identifying key questions in the ecology and evolution of cancer* Dujon A, …, **Noble R**, …, Thomas F, Ujvari B	**Evol. Appl.**
Accepted	*The logic of containing tumors* Viossat Y, **Noble R**	**bioRxiv** 10.1101/2020.01.22.915355
2020	*When, why and how clonal diversity predicts survival* **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
2017	*A framework for how environment contributes to cancer risk* Hochberg ME, **Noble R**	**Ecology Letters** 20, 117-34
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*	**eLife**

	implications for the immuno-epidemiology of malaria **Noble R***, Christodoulou Z*, Pinches R, Kyes S, Recker M, Newbold CI (* equal contributions)	2013.2:e01074
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
2012	*A statistically rigorous method for determining antigenic switching networks* **Noble R**, Recker M	**PLoS ONE** 7, e39335

Submitted for publication

Submitted	*Determinants of successful IFNα therapy in myeloproliferative neoplasms* Mosca M*, Hermange G*, Tisserand A*, **Noble R***, …, Plo I (* equal contributions)	
Submitted	*Drug-induced resistance evolution necessitates less aggressive treatment* Kuosmanen T, Cairns J, **Noble R**, Beerenwinkel N, Mononen T, Mustonen V	**bioRxiv** 10.1101/ 2020.10.07.330134
Submitted	*Spatial structure governs the mode of tumour evolution* **Noble R**, Burri D, Le Sueur C, Lemant J, Viossat Y, Kather JN, Beerenwinkel N	**bioRxiv** 10.1101/ 586735

Software

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

Teaching

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

Lecturing and tutoring (City, University of London)
Mathematical processes for finance (BSc)

2017-2020 **Supervision (ETH Zurich)**
Second year MSc thesis, Alexander Stein (next step: in progress)
Second year MSc thesis, Jeanne Lemant (next step: research scientist at Swiss TPH)
Second year MSc thesis, Dominik Burri (next step: PhD at University of Basel)
Research internship (eight months), Cécile Le Sueur (next step: PhD at EMBL)

Lecturing and tutoring assistance (ETH Zurich)
Evolutionary dynamics (MSc three terms)

2016 **Supervision (ISEM)**
First year MEME MSc project, John Burley (next step: PhD at Brown University)

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

$150K 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: American Naturalist, 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

Co-organizer: “Cancer Adaptive Therapy Models” workshop (2020)

Co-organizer: “Aging & cancer through the lens of evolution” symposium (ESEB conference 2019)

Co-organizer: “How does spatial structure affect tumour evolution?” symposium (MBE conference 2017)

Other employment

Dec 2008- Sep 2009 **International HIV/AIDS Alliance**
Communications

Aug 2004- Dec 2008 **AVERT (HIV/AIDS charity)**
Science/heath communication and web development

Invited departmental seminars

Sept 2020 *Characterizing and forecasting tumour evolution*
Cancer Research UK Cambridge Institute (virtual, hosted by Florian Markowetz)

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 2019 *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

Oct 2020 *Characterizing and forecasting tumour evolution*
International Symposium on Mathematical and Computational Oncology (virtual)

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 ESMTB & 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

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

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