Dr. Dominic Waithe
Wolfson Imaging Centre, Weatherall Institute of Molecular Medicine, University of Oxford

Curriculum Vitae

Name: Dr. Dominic Waithe
Age: 37
Current location: Oxford
Twitter: https://twitter.com/dwaithe (https://tinyurl.com/ycnz2cx4)
Publications: ORCID publications (https://tinyurl.com/yblfm4ff)
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Scientific Career

2001-2005	B.Sc., Biotechnology. Department of Biochemistry. UCL. Tutor. Prof. John Ward Ph.D.
2003-2004	Industrial Trainee. Lead Discovery Technologies, Pfizer Ltd (Sandwich, Kent). Supervisors: Dr. Andreas Sewing Ph.D., Dr. Philip Gribbon Ph.D. Topic: adaptation of immunohistochemical assay kits into High Content Screening format
2005-2009	PhD. Research Student. Laboratory of Molecular Neuroscience. UCL. British Heart Foundation funded studentship. Supervisor: Prof. Annette C. Dolphin Ph.D., FMedSci. Topic: to investigate the trafficking of calcium channels in sympathetic neurons.
2009-2010	Post-doctoral Research Associate. Laboratory of Molecular Neuroscience. UCL. Molecular Research Council funded. Supervisor: Prof. Annette C. Dolphin Ph.D., FMedSci. Topic: to study the trafficking of the putative calcium channel subunit gamma-7.
2010-2012	Post-doctoral Research Associate. Institute of Pharmacology and Toxicology, University of Zurich. SNSF funded. Supervisor: Prof. Jean-Marc Fritschy, Ph.D. Topic: to investigate the clustering characteristics of synaptic protein gephyrin
2012-2013	MSc.Research Student. Dept. of Computer Science. University College London. Supervisor: Dr. Gabriel Brostow, Ph.D. Topic: Development of an active-learning object detection algorithm.
2013-2018	Senior Post-doctoral Research Associate. Wolfson Imaging Centre, Weatherall Institute of Molecular Medicine. John Radcliffe Hospital. Supervisor: Dr. Christian Eggeling, Ph.D. Topic: Quantitative Image analyst supporting institute through research and collaboration.
2018-	UKRI Innovation Fellow. Topic: Career Development fellowship to apply dynamic image analysis, computer vision and machine learning to microscopy acquisition and analysis.

Publications

- 41 Publications in peer-reviewed journals (http://orcid.org/0000-0003-2685-4226)
- Authored a successful grant as Named Co-Researcher (BBSRC Tools and Resources Development Fund), with Christian Eggeling as main applicant.
- Authored successful fellowship application. MRC Innovation fellowship. 3-years.

Five most important peer-reviewed publications

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- **Waithe D**., Schneider F., Chojnacki J., Shreshta D., de la Serna JB.," Optimized processing and analysis of conventional confocal microscopy generated scanning FCS data". Methods. https://doi.org/10.1016/j.ymeth.2017.09.010
- **Waithe D.**, Clausen MP., Sezgin E., Eggeling C. "FoCuS-point: software for STED fluorescence correlation and time-gated single photon counting". *Bioinformatics*, Volume 32, Issue 6, 15, Pages 958–960 (2016).
- **Waithe D**., Hailstone M., Lalwani MK., Parton R, Yang L., Patient R. Eggeling C. "3-D Density Kernel Estimation for Counting in Microscopy Image Volumes Using 3-D Image Filters and Random Decision Trees. ECCV Workshop: 244-255 2016
- **Waithe D**., Ferron L., Dolphin AC. "Stargazin-related protein 7 is associated with signalling endosomes in superior cervical ganglion neurons and modulates neurite outgrowth." Journal of Cell Science;124(Pt 12):2049-57. 2011
- **Waithe D.,** Ferron L., Page K.M., Chaggar K., Dolphin A.C. "Beta- subunits promote the expression of Ca(V)2.2 channels by reducing their proteasomal degradation." Journal of Biological Chemistry, ;286(11):9598- 611. 2011.

Workshops and Lectures

Python for Bioimage Analysis Course – Cambridge 2019
https://tinyurl.com/saeyqgf (main organiser, lecturer, demonstrator)
Neubias TS12 workshop – Porto 2019
https://tinyurl.com/qllpkch (co-organiser, lecturer, demonstrator))
Oxford Notting Bioimage Imaging CDT Image Anaysis Course – Oxford 2014-2018
https://tinyurl.com/s32bdxl (co-organiser, lecturer, demonstrator))
CGAT Linear Regression course – Oxford 2018-2020
https://tinyurl.com/tlkh6zv (lecturer, demonstrator))
MMC2019 - 30 min Introduction to Fiji/ImageJ for bioimage/microscopy analysis.
https://tinyurl.com/sxz7laq (lecturer)
FMM2020 – Machine Learning and Microscopy
https://tinyurl.com/uargts2 (invited talk)
IBIN – Leeds 2019 –Resources for 3D image analysis: Neubias and beyond
https://tinyurl.com/yxy3kjyy (invited talk)
IBIN – Crick 2019 – Resources for large-dataset image analysis: Neubias and beyond
https://tinyurl.com/s95yrnh (invited talk)

Coding examples

Neural networks and computer vision examples
(https://github.com/dwaithe/amca) Software framework for training and combining multiple deep-learning object detection networks for the automated control of microscopy.

(https://tinyurl.com/yc5cc8rr) Tutorials for learning TensorFlow a different take on the existing methods (jupyter, python, tensorflow).

Ensemble decision tree, computer vision and machine learning examples
(https://tinyurl.com/ybz3uzpu) Density estimation in 3-D (jupyter, python, scikit-learn).
(https://tinyurl.com/y7fnrs5u) QBrain software (python PyQt, matplotlib, scikit-learn).
(https://tinyurl.com/y9lfnxy2) QuantiFly software (python, PyQt, matplotlib, scikit-learn).

Scientific software DevOps examples
(https://tinyurl.com/y7yvc9xb) FoCuS-scan software (python, PyQt, matplotlib, pyInstaller).
(https://tinyurl.com/yb5a9d9e) FoCuS-point software (python, PyQt, matplotlib, cython, pyInstaller).

Data science analysis pipelines
(https://tinyurl.com/ybxf85yv) Analysis of Peroxisomes in super-resolution images (jupyter,

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python, bioformats).
(https://tinyurl.com/y74uhyln) Analysis of Peroxisome tracks (jupyter, python, bioformats).

Simulation libraries
(https://tinyurl.com/y7dcubl9) Nanosimpy simulation library (jupyter, python, cython).

Macros and scripts
(https://tinyurl.com/yaogul7r) N-D Gaussian fitting in ImageJ (Fiji, ImageJ, python).
(https://tinyurl.com/ybher3q5) Full-Width Half Maximum fitting. (Fiji, ImageJ).
(https://tinyurl.com/y7656843) Image Correlation Spectroscopy. (jupyter, python).
(https://tinyurl.com/y86qoyy5) Maxima finding algorithm (python).

Website development
(https://tinyurl.com/y7rharmp) Minimal Phonic Cues website. (HTML5).
(https://tinyurl.com/ybaq3b64) Flash animations and older web work (Flash, HTML5).