This course is now closed and there will be no further intakes of students. This page exists as a record of the course structure and its past students.

Doctoral Programme in Chemical Biology

The Doctoral Programme in Chemical Biology was a 4-year graduate training programme that brought together the expertise of three world-leading organisations to train outstanding students to work at the frontiers of chemical biology research. The University of Oxford was ranked 1st in the 2016 Times Higher Education World University Rankings and is one of the world's leading research universities. GSK is a world leading, global healthcare company, which develops and manufactures pharmaceutical medicines, vaccines and consumer healthcare products. The Francis Crick Institute is a biomedical discovery institute dedicated to understanding the fundamental biology underlying health and disease. GSK works closely with researchers at The Francis Crick Institute through the GSK - Crick (LinkLabs) open science collaboration to explore new avenues of medical research and drug discovery. Chemical biology is an interdisciplinary field of science in which chemical techniques, tools, and analyses are used to study and manipulate biological systems, to address questions related to small molecule drug and probe discovery, and to investigate the pharmacology of small molecules that modulate biological targets. The projects offered to students who were admitted to this programme in 2017 were all within the theme of chemical modulation of biomolecules within living cells. The programme admitted two cohorts of students in October 2017 and October 2018 supported by funding from EPSRC and BBSRC. The majority of students admitted to the programme had an academic background in chemistry or in related fields. The programme was based in the University of Oxford's Doctoral Training Centre (DTC) (www.dtc.ox.ac.uk), which houses five interdisciplinary graduate programmes focused on research at the interface between physical and life sciences, providing extensive opportunities to interact with students from a wide range of academic backgrounds. The Training Programme During their first term students undertook an intensive interdisciplinary training programme which included training in programming and scientific computing, drug discovery and chemical biology. During this term and throughout their studies students participated in a comprehensive career development programme, which included specific training in communication and business skills, entrepreneurship skills and the commercialisation of research. Commencing in January of their first-year students will undertook two 12-week rotation projects with at least two of the partner organisations (Oxford, GSK, Crick), before identifying their main DPhil research topic. They submitted a written report on each of these rotation projects which was assessed by an expert from one of the three partner organisations. For many students these rotation projects were complementary projects that provided the foundation for a collaborative DPhil project involving both project supervisors. During their DPhil project all students had an academic supervisor at the University of Oxford and a supervisor/mentor at GSK. Some students also had a supervisor at The Francis Crick Institute. Students selected rotation projects from a portfolio of projects proposed by researchers within the partnership. These rotations provided students with the opportunity to interact closely with both their academic and industrial/institute supervisors and to gain direct experience of the working environment and facilities available in the partner

organisations. At the end of their first-year students wrote and submitted for approval a research proposal describing their proposed DPhil project, written in collaboration with their academic, industrial and institute supervisor(s). They then undertook 3 years of full-time doctoral research. Industrial Placement All students undertook a placement of no less than 12 weeks with GSK. In some cases, this placement was undertaken as one of the two rotation projects undertaken in the first year, in other cases this occurred during years 2-3. Funding Research council studentship funding administered by the University of Oxford provided a standard UK stipend (initially set at £14,553 per year) and university fees for eligible students for 4-years. This will be increased by contributions from GSK, and where relevant, the Francis Crick Institute to a minimum of £17,553 per year. Both GSK and the Francis Crick Institute provided additional funding towards cost of accommodation or travel from Oxford for students undertaking rotations with these organisations during their first year. Funding from The Francis Crick Institute for first year rotation students was £1677. The Francis Crick Institute subsequently topped up the combined Oxford and GSK stipend to the Crick level (£22K) for up to 18 months for students who carried out a jointly supervised PhD project with a Crick Group Leader as one of the supervisors.

LinkedIn profile of Oxford-GSK-Crick Chemical Biology CDT:
https://www.linkedin.com/in/oxford-gsk-crick-chemical-biology-cdt-0a812b247/

Oxford-GSK-Crick Chemical Biology DPhil - 2017 Cohort

Students:

Stephanie Lovell-Read

Raphael Reinbold

Grace Roper

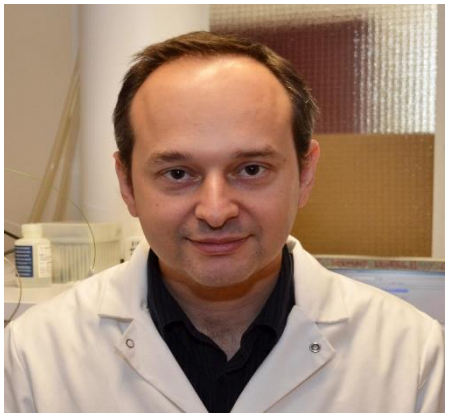
Adam Thomas

Tobias John

Lead & Additional Supervisors:

Akane Kawamura

Chris Schofield



Luiz Carvalho

Stuart Conway

Industrial Supervisors:

Jacob Bush

Jo Redmond

Vipul Patel

Pete Craggs

Oxford-GSK-Crick Chemical Biology DPhil - 2018 Cohort

Students:

Darius McArdle

Karen Heathcote

Marc Moesser

Katrina Andrews

Lead Supervisors:

Stuart Conway

Emily Flashman

Garrett Morris

Additional Supervisors:

Ester Hammond

Chris Schofield

Peter Ratcliffe

Industrial Supervisors:

Jacob Bush

David Hirst

Lewis Brayshaw

Andrew Baxter

Activity	Output	Name	Cohort	Title	Authors	Event / Journal information	Year
	Award	Grace Roper	2017	Travel Award to RSC BMCS conference			
	Award	Grace Roper	2017	Commendation - Presentation of flash talk - Graduate Student Symposium		OC & CB Grad Students Symposium, Oxford	2021
	Award	Raphael Reinbold	2017	Lilly prize for Excellence in Organic Chemistry Research (2018/2019)			2019
	Award	Stephanie Lovell-Read	2017	Lilly Prize for Excellence in Organic Chemistry Research (2019)			2019
	Award	Adam Thomas	2017	Runner up poster award for RSC CBBG confeerence	Adam M. Thomas, Jacob T. Bush, and Stuart J. Conway	RSC CBBG Forum	2020
	Award	Tobias John	2017	Talk Prize - Studies on the Reaction of Formaldehyde with N-Termini	Tobias John	OC & CB Grad Students Symposium, Oxford	2021
	Conference attendance	Tobias John	2017	-	-	Chemical Biology 2018 EMBO Workshop	2018
	Conference attendance	Tobias John	2017	Studies on the Reactions of Formaldehyde with Protein N-termini	Tobias John, Elisabete Pires, Svenja Hester, John Walsby-Tickle, Felix Dingler, Christopher Millington, Richard Hopkinson*, Christopher Schofield* *Corresponding Authors	Biological and Medicinal Chemistry Symposium for Postgraduates	2021
	Conference Presentation	Tobias John	2017	Studies on the Reactions of Formaldehyde with N-Termini	Tobias John	RSC, CBBG Conference	2021
	Conference organising	2017 cohort	2017	ChemBiOx 2019	Grace Roper, Raphael Reinbold, Tobias John, Stephanie Lovell-Read, Adam Thomas		2019
	Conference presentation	Adam Thomas	2017	A CRISPR Method for Rapid In-cell Validation of Epigenetic Targets	Adam M. Thomas, Jacob T. Bush & Stuart J. Conway	14th BMCS Biological and Medicinal Chemistry Postgraduate Symposium	2020
	Poster, conference	Grace Roper	2017	Structure Activity Relationship Studies on a Cyclic Peptide Probe Selective for Histone Demethylases KDM4A-C	Grace Roper, Bhaskar Bhushan, Joanna Bonnici, Anthony Tumber, Richard Hopkinson, Tetsuya Kojima, Hiroaki Suga, Akane Kawamura	3rd RSC BMCS Medicinal Chemistry Symposium on Macrocycles	2019
	Poster, conference	Grace Roper	2017	Structure Activity Relationship Studies on a Cyclic Peptide Probe Selective for Histone Demethylases KDM4A-C	Grace Roper, Bhaskar Bhushan, Joanna Bonnici, Anthony Tumber, Richard Hopkinson, Tetsuya Kojima, Hiroaki Suga, Akane Kawamura	RSC Chemical Biology and Bioorganic Group Postgraduate Symposium 2019	2019
	Poster, conference	Grace Roper	2017	Development of macrocyclic peptides as affinity probes	Grace Roper1,2, Albert Isidro Llobet3, Akane Kawamura1,2 1 University of Oxford, Department of Chemistry; 2 Newcastle university, School of Natural and environmental Sciences, Chemistry; 3 Medicines Research Centre, GlaxoSmithKline	XV RSC BMCS Postgraduate Symposium	2021
	Poster, conference	Raphael Reinbold	2017	Investigation of a fluorescence-based formaldehyde quantification method reveals a lack of specificity	Raphael Reinbold, Tobias John, Paolo Spingardi, Akane Kawamura,, Christopher J. Schofield, and Richard J. Hopkinson	RSC Chemical Biology and Bioorganic Group Postgraduate Symposium 2019	2019
	Poster, conference	Raphael Reinbold	2017	Studies on Mycobacterial Isocitrate Dehydrogenases	Raphael Reinbold, Martine I. Abboud, Acely Garza-Garcia, Luiz Pedro S. de Carvalho, Christopher J. Schofield	Chemical Biology and Bio-Organic Group (CBBG) Forum	2020
	Poster, conference	Tobias John	2017	H2B N-Terminal Proline Scavenges Formaldehyde	Tobias John, Elisabete Pires, Christopher J. Schofield, and Richard J. Hopkinson	RSC CBBG Forum	2020
	Poster, conference	Adam Thomas	2017	A CRISPR Method For Rapid In-Cell Validation of Epigenetic Targets	Adam M. Thomas, Jacob T. Bush, and Stuart J. Conway	RSC BMC Postgraduate symposium	2019
	Poster, conference	Adam Thomas	2017	A CRISPR Method For Rapid In-Cell Validation of Epigenetic Targets	Adam M. Thomas, Jacob T. Bush, and Stuart J. Conway	RSC CBBG Forum	2020
	Poster, conference	Adam Thomas	2017	A CRISPR Method for Rapid In-cell Validation of Epigenetic Targets	Adam M. Thomas, Jacob T. Bush & Stuart J. Conway	RSC Organic Poster Symposium	2020
	Poster, conference	Karen Heathcote	2018	Target Incorporation of Non-Canonical Amino Acids into Histones and Cyclic Peptides	Karen Heathcote, Oliver Coleman, Cassandra Kennedy, Akane Kawamura	OxCheBio 2019, Oxford	2019
	Poster, conference	Karen Heathcote	2018	Investigating the Role of Cysteamine Dioxygenase (ADO) in Oxygen Sensing	Karen Heathcote, Thomas Keeley, Norma Masson, Jacob Bush, Peter Ratcliffe, Emily Flashman	RSC CBBG Postgraduate Symposium	2020
	Public engagement	Grace Roper	2017	Epigenetics: how do identical twins differ?	Kawamura Group	Oxford Science + Ideas festival	2019
	Public engagement	Raphael Reinbold	2017	The Oxford Hands-On Science (OxHOS) roadshow		Oxford Hands-On Science (OxHOS) Summer Roadshow	2019
	Public engagement	Tobias John	2017	Code Club (https://codeclub.org/en/)		Teaching school children how to code	2018/2019
	Public engagement	Stephanie Lovell-Read	2017	How playing 'spot the difference' can help us kill TB (Assembly Presentation)		Westminster Academy, STEM Week Assembly	2020
	Public engagement	Stephanie Lovell-Read	2017	Roots to Seeds Exhibition, Weston Library - Photography Credit	N/A	Roots to Seeds Exhibition, Weston Library, Oxford	2021
	Public engagement	Adam Thomas	2017	CRUK Open Doors (Oxford Chemistry)			2019
	Public engagement	Adam Thomas	2017	UNIQ Summer School	N/A	UNIQ Summer School	2020
	Public engagement	Katrina Andrews	2018	CRUK Open Doors (Oxford Chemistry)			2019
	Public engagement	Darius McArdle	2018	CRUK Open Doors (Oxford Chemistry)			2019
	Publication (commentary)	Stephanie Lovell-Read	2017	Salmonella, meet mycobacteria	SR Lovell-Read, LPS de Carvalho	J Exp Med (2019) Apr 1: 216(4); 721-722	2019
	Publications (article)	Grace Roper	2017	Light-driven post-translational installation of reactive protein side chains	Brian Josephson, Charlie Fehl, Patrick G Isenegger, Simon Nadal, Tom H Wright, Adeline W J Poh, Ben J Bower, Andrew M Giltrap, Lifu Chen, Christopher Batchelor-McAuley, Grace Roper, Oluwatobi Arisa, Jeroen B I Sap, Akane Kawamura, Andrew J Baldwin, Shabaz Mohammed, Richard G Compton, Veronique Gouverneur, Benjamin G Davis	https://www.nature.com/articles/s41586-020-2733-7	2020
	Publications (Review Chapter)	Grace Roper	2017	Cyclic Peptides as Chemical Probes	L. Serrano, G. Roper and A. Kawamura	https://pubs.rsc.org/en/content/chapter/bk9781788015899-00100/978-1-78801-589-9	2020
	Publications (Review)	Grace Roper	2017	Structural diversity in de novo cyclic peptide ligands from genetically encoded library technologies	Tom E. McAllister, Oliver D. Coleman, Grace Roper, Akane Kawamura	https://onlinelibrary.wiley.com/doi/full/10.1002/pep2.24204	2020
	Publications (article)	Raphael Reinbold	2017	Formaldehyde quantification using ampicillin is not selective	Raphael Reinbold, Tobias John, Paolo Spingardi, Akane Kawamura, Amber L. Thompson, Christopher J. Schofield & Richard J. Hopkinson	Sci Rep 9, 18289 (2019)	2019
	Publications (article)	Raphael Reinbold	2017	Metampicillin is a cyclic aminal produced by reaction of ampicillin with formaldehyde	Raphael Reinbold, Tobias John, Paolo Spingardi, Akane Kawamura, Christopher J. Schofield & Richard J. Hopkinson	Sci Rep 10, 17955 (2020)	2020
	Publications (article)	Tobias John	2017	Formaldehyde quantification using ampicillin is not selective	Raphael Reinbold, Tobias John, Paolo Spingardi, Akane Kawamura, Amber L. Thompson, Christopher J. Schofield & Richard J. Hopkinson	Sci Rep 9, 18289 (2019)	2019
	Publications (article)	Tobias John	2017	Allosteric inhibition of the SARS-CoV-2 main protease – insights from mass spectrometry based assays	Tarick J. El-Baba, Corinne A. Lutomski, Anastasia Kantsadi, Tika Malla, Tobias John, Jani R. Bolla, Christopher J. Schofield, Nicole Zitzmann, Ioannis Vakonakis, Carol V. Robinson	https://onlinelibrary.wiley.com/doi/10.1002/anie.202010316	2020
	Publications (article)	Tobias John	2017	Metampicillin is a cyclic aminal produced by reaction of ampicillin with formaldehyde	Raphael Reinbold, Tobias John, Paolo Spingardi, Akane Kawamura, Christopher J. Schofield & Richard J. Hopkinson	Sci Rep 10, 17955 (2020)	2020
	Publications (article)	Tobias John	2017	COVID Moonshot: Open Science Discovery of SARS-CoV-2 Main Protease Inhibitors by Combining Crowdsourcing, High-Throughput Experiments, Computational Simulations, and Machine Learning	Full list of authors: https://tinyurl.com/y3r7redd	bioRxiv https://mcusercontent.com/344622d41c8d48a4f90ab0e6e/files/c609b831-37cd-420c-a3db-6c1b57698b99/Moonshot_Paper.pdf	2020
	Publications (article)	Tobias John	2017	Roles of metal ions in catalysis and allosteric inhibition of wildtype and oncogenic variants of human Isocitrate Dehydrogenase (IDH) 1, under review	Liu, S, Abboud, M., John, T., Mikhailov, V., Hvinden, I., Walsby-Tickle, J., Petinatti, I., Cadoux-Hudson, T., McCullagh, J., &Schofield, C.J.		
	Publications (article)	Tobias John	2017	N-Terminal Prolines Scavenge Formaldehyde	Tobias Johna, Elisabete Piresa, Svenja S. Hesterc, Eidarus Salaha, Christopher J. Schofielda, and Richard J. Hopkinsonb		TBC
	Publications (article)	Tobias John	2017	Inhibition of Asparagine Biosynthesis by Biologically Relevant Aldehydes – Implications for Diabetes, Leukemia and Alcoholism	Tobias Johna, John Walsby-Ticklea, Felix Dinglerb, Christopher Millingtonb, Svenja S. Hesterd, Christopher J. Schofielda and Richard J. Hopkinsonc		tbc
	Publications (article)	Adam Thomas	2017	Optimised oligonucleotide substrates to assay XPF-ERCC1 nuclease activity for the discovery of DNA repair inhibitors	Adam M. Thomas, Sanja Brolih, Joanna F. McGouran, Afaf H. El-Sagheer, Denis Ptchelkine, Morgan Jones Neil Q. McDonald, Peter J. McHugh and Tom Brown	Chem. Commun., 2019,55, 11671-11674	2019
	Publications (article)	Marc Moesser	2018	JMJD6 Is a Druggable Oxygenase That Regulates AR-V7 Expression in Prostate Cancer	Alec Paschalis, Jonathan Welti, Antje J. Neeb, Wei Yuan, Ines Figueiredo, Rita Pereira, Ana Ferreira, Ruth Riisnaes, Daniel Nava Rodrigues, Juan M. Jiménez-Vacas, Soojin Kim, Takuma Uo, Patrizio Di Micco, Anthony Tumber, Md. Saiful Islam, Marc A. Moesser, Martine Abboud, Akane Kawamura, Bora Gurel, Rossitza Christova, Veronica S. Gil, Lorenzo Buroni, Mateus Crespo, Susana Miranda, Maryou B. Lambros, Suzanne Carreira, Nina Tunariu, Andrea Alimonti; , SU2C/PCF International Prostate Cancer Dream Team, Bissan Al-Lazikani, Christopher J. Schofield, Stephen R. Plymate, Adam Sharp and Johann S. de Bono	https://cancerres.aacrjournals.org/content/81/4/1087.short	2021
	Publications (Review)	Karen Heathcote	2018	Emerging roles for thiol dioxygenases as oxygen sensors	Dona M. Gunawardana, Karen C. Heathcote, Emily Flashman	https://febs.onlinelibrary.wiley.com/doi/full/10.1111/febs.16147	2021
	Publications (Article)	Karen Heathcote	2018	Towards a new treatment for hypoxic tumours	Karen C Heathcote	https://www.chem.ox.ac.uk/files/periodic-issue9-online-compressedpdf	2021
	Thesis Submitted	Tobias John	2017	Studies on the Reactions of Formaldehyde with Protein N-Termini and Related Biomolecules			2021
	Patent Application	Tobias John	2017	Asparagine and cysteine as therapeutic agents for diabetes, glutathione synthetase deficiency, alcohol flush and hangover	Tobias John, Chris Schofield		

Publications
Posters
Awards
Engagement
Conference Attendance / Organisation