Research CV:  Dr Tom Ellis

Tel: 0207-594-7615
Twitter: @DrTomEllis

Current Post
Lecturer in Synthetic Biology, Department of Bioengineering, Imperial College London

Qualifications
MBioch (Molecular and Cellular Biochemistry)  Oxford University  2000
PhD (Thesis on DNA-binding ligands)  University of Cambridge  2004

Previous Posts
Postdoctoral Research Assistant, Centre for Advanced Biotechnology, Boston University  2006-2008
Postdoctoral Research Assistant, Institute of Biotechnology, University of Cambridge  2009

Journal Publications since joining ICL

Total citations since 2008: 403  h-index: 7  i10-index: 7
Journal Publications prior to ICL


Papers in Preparation


Books and Book Chapters


Publication Awards


Funding Held as PI


BBSRC Responsive Mode. “Genome Organisation for Optimising Synthetic Secondary Metabolism” Ellis T (PI). Jul 2013. £423,053 for 36 months

EPSRC Responsive Mode. “Engineered burden-based feedback for robust and optimised synthetic biology” Ellis T (PI) and Stan GB. Jan 2013. £539,000 for 42 months


BBSRC BB/J019720/1 “Engineered security systems for environmental synthetic biology” Ellis T (PI) and Stan GB. DTSL Joint Synthetic Biology Initiative. Sept 2012. £149,607 for 14 months

Industry-funded PhD project “Investigation and re-wiring of promoter regulation in Geobacilli” Ellis T (PI). Four year funding from TMO Renewables Ltd. and Dept of Bioengineering. Oct 2011. £45,000
Funding Held as Co-I


EPSRC IKC “SynbiCITE - an Imperial College led Innovation and Knowledge Centre (IKC) in Synthetic Biology” Co-I at ICL, with Imperial (leading), Essex, Newcastle, Glasgow, Bristol, Edinburgh, Cambridge etc. £6.24M

Funding Applications Awaiting Decision

BBSRC Equipment Call. “High throughput platforms for cellular reprogramming and analysis from microbial populations to single cells and molecules”. Co-I at ICL with Geoff Baldwin (ICL) leading. £527,747

BBSRC Tools and Resources Call. “Evaluation of CIDEA expression as a method to increase lipid production in microorganisms”. Co-I at ICL with Peter Nixon (ICL) leading. £163,108

Funding Completed

Wellcome Trust iGEM Scheme: “Imperial College London iGEM Project 2011”. Secured stipends for six students at £1900 each to cover 10 weeks work over summer. Total awarded: £11400

Research Competitions

iGEM 2011. “Auxin” Imperial College London (main supervisor). European Champions and overall 2nd place from over 170 teams. Winners of 3 major awards.
iGEM 2010. “Parasight” Imperial College London (supervisor). Top 5 finalist from 125. Winners of 3 major awards. Project further funded by Bill and Melinda Gates Foundation.
iGEM 2009. “E.Chromi” University of Cambridge (supervisor). Grand Prize winner from 120 entrants

Research Group Posters Presented At Conferences

* Not including 15 Ellis Lab posters at SB5.0 and SB6.0 and 6 Ellis Lab posters at Sc2.0 annual meetings

Casini A, Macdonald JT, Baldwin GS and Ellis T (2013). R2oDNA Designer: Computational design of biologically neutral synthetic DNA sequences. IWBDA 2013, Imperial College London, July 2013


Blount B (selected for a talk) and Ellis T. Rational Diversification of a Promoter Providing Fine-Tuned Expression and Orthogonal Regulation for Synthetic Biology. British Yeast Group Meeting 2013


Blount B and Ellis T. Engineering a penicillin biosynthesis pathway into yeast to elucidate the effects of 3D positioning in the genome on transcription. Synthetic Biology of Antibiotic Production, Sant Feliu de Guixols, Spain, October 2011

Invited Talks

Society for Exp. Biology AGM, Manchester: July 2014
Frontiers in BioSustainability, Korea: Oct 2013
SB6.0 Conference, Imperial College: July 2013
GARNet 2013 Workshop, Nottingham: May 2013
University of Kent Fungal Group: Dec 2012
New Phytopathologist Workshop, Bristol: June 2012
1st International Sc2.0 Meeting, Beijing: Apr 2012
FERA themed workshop, York: Sep 2011
2nd BIOFAB meeting, Stanford USA, July 2011
Synthetic Biology, NTU, Singapore: May 2011
IOSSB Symposium, Imperial College: Nov 2010
SynBioStandards Network, Edinburgh: Sept 2010

SEB Syn Bio Symposium, London: Jan 2014
2nd Annual Sc2.0 meeting, London: July 2013
UK-Korea SynBio Workshop, BIS London: July 2013
British Yeast Group Meet, Nottingham: Mar 2013
The CRICK Institute, London: Sep 2012
EnGENEious Conference, Oxford: June 2012
Thematic Research School, Evry, France: May 20
17th IBC IUPAB Conference, Beijing: Nov 2011
IEEE EMBC Conference, Boston, USA: Sep 2011
Synthetic Biology Workshop, LSE: June 2011
Synthetic Bio Conference, Evry, France, Dec 2010
Topical Day in Bioinfo, SCK.CEN Belgium, Nov 2010
Advances in Synthetic Biology, London, April 2009

Research Impact and Outreach

Guest Speaker at University of Westminster Faculty Seminar Series, London (Nov 2013)
Invited Speaker at 2013 ‘Pint of Science’ Festival in London, Oxford and Cambridge (May 2013)
Invited Speaker at 2013 SGM and Society of Biology’s ‘Brilliant Breakthrough’ Day for Teachers (Jan 2013)
Guest Speaker for the prestigious Trinity College Cambridge, Science Society (Nov 2012)
Academic Champion for the Synthetic Life undergraduate Grand Challenge, Exeter University (Nov 2012)
Invited Speaker and Runner-up at the Royal Institution’s Synthetic Biology Smackdown Event (Oct 2012)
Selected Article for the Leverhulme Trust Newsletter Print Edition (Aug 2012)
Interviewed for GEN magazine article: “Synthetic Biology Defined by Interdisciplinarity” (May 2012)
Imperial Science Festival: PhD student Ben Reeve demonstrating our synthetic biology work (May 2012)
Interviewed in I,Science magazine article: “Engineering Life” (Mar 2012)
Ellis et al. Integrative Biology paper is the most read paper in the journal for 2011 (Dec 2011)
Exhibited research at Natural History Museum, London at EU-wide Science Uncovered Event (Sept 2011)
Interview for Nature magazine “Synthetic genomes: The next step for the synthetic genome” (May 2011)
Interviewed for Nature Methods article “Microarrays, megasynthesis” (May 2011)
Collaborated with RCA MA student Nicola Morgan on bacterial-patterned fashion (Jan to May 2011)
Interviewed for conceptual art work “Public Misunderstandings of Science” (March 2011). Part of the Laboratory Life series organised by Lighthouse/The Arts Catalyst, staged part of Brighton Science Festival.
Invited Speaker for the Natural History Museum, Nature Live! Night Event (May 2010)
“E.Chromi” Cambridge iGEM 2009 (supervisor) was nominated for Design of the Year 2010 at British Design Awards and exhibited at MOMA, New York. Project was also a winner at the 2011 Bio-Fiction film festival.
Further Roles and Responsibilities

Panel Member for the ERASynBio 1st call: Dec 2013 – EU FP7 Synthetic Biology ERA-NET scheme
Member of UK Synthetic Biology Delegation to Boston: Sept 2013 – FCO UK-US Synthetic Biology Campaign
The 2nd Annual Sc2.0 meeting, Imperial College London: July 2013 – Chair of meeting and main organiser
The SB6.0 Conference, Imperial College London: July 2013 – Executive programming committee member
SynBioBeta UK meeting on UK biotech start-ups. July 2013 – Member of programming team
Synthetic Biology: Containment and Release, Kings College London: April 2013 – Co-organiser and chair
Bioengineering Department REF Impact Committee member: 2011-2012
Bioengineering Department Undergraduate and MSc Tutoring (12 students): since Oct 2011
Bioengineering Department Seminar Series organisation (with Guy-Bart Stan): Sep 2013 to Aug 2011
Supervision of 5 work experience students from Eton College: July 2012
Supervision of 2 Korean high-school students from KSA KAIST: July 2010
Construction of the website for Centre for Synthetic Biology and Innovation: May-June 2010

Membership of Professional Bodies and Societies

Invited Edition Editor and member of the Editorial Board for ACS Synthetic Biology (since Mar 2013)
Scientific Advisory Board member for Addgene.org: the world’s largest plasmid provider (since 2012)
BioBricks Foundation SB6.0 Executive Programming Teaming (2012-2013)
iGEM European Judging Committee member (2011)
Member of the Institution of Engineering and Technology (IET) (since 2009)
Christ’s College, University of Cambridge (since 2000)
Wadham College, Oxford University (since 1996)

Imperial Personal Development Courses Attended

Communicating Knowledge, 09-JUN-10 and 17-JUN-10 Introduction to teaching and learning, 15-SEP-11
Using Feedback to Enhance Student Learning, 03-JUN-10 EPSRC Study Day Workshop, 20-SEP-10
Introduction to Personal Tutoring at Imperial, 19-JAN-12 Month One Safety Training, 21-JAN-10
Introduction to Supervising PhD Students at Imperial, 14-DEC-11 Laboratory Teaching, 06-MAY-10
Assessing Student Learning in Science and Engineering, 23-MAR-10 Imperial Insights, 28-JAN-10
Recruitment and Selection for Academic & Research Staff, 18-JUN-10 InfoEd Training, 29-APR-10
Health and Safety Responsibilities for Academic Supervisors, 30-NOV-12

Observation of my lecturing, 23-JAN-12 (Overby) and 25-JAN-12 (Bull)
Observation of senior lecturers, 1-MAR-12 (Boutelle) and 8-MAR-12 (Krams)
Teaching

Total ICL contact hours per year: 51 (60 hours for 2012/2013)

1. Biomedical Engineering course-convener for ICL undergraduate Synthetic Biology course

Duties: 2 hours of lectures. Co-supervise a further 29 hours of practicals, classes and workshops. Mark four items of coursework for 42 students. Set/mark two different exams. SOLE score total as individual lecturer:

- 2013: Very Good 18, Good 8, Satisfactory 2, Poor 1, Very Poor 0
- 2012: Very Good 20, Good 31, Satisfactory 17, Poor 0, Very Poor 0
- 2011: Very Good 34, Good 24, Satisfactory 23, Poor 14, Very Poor 1

Innovations: Biomedical Engineering content reduced to a single module. Split the lectured material into foundational knowledge and case studies, with the latter all based on iGEM project examples that made publication. Introduced separate exams for Life Sci and Biomedical Engineering students, which led to improved grades for both cohorts of students and improved feedback scores.

2. Course-convener for ICL Biomedical Engineering Year 2 Wet-lab Skills course

Duties: 18 hours of practical and class supervision (45% of course load). Also arrange labs, prepare some materials, organise course GTAs, prepare handbook and Blackboard material. Note: 28 hours in 2013

Innovations: Added a bioinformatics practical, replaced pharmacology practical with a neuro practical. Added a prize competition to the molecular biology practical which led to dramatically improved results.

3. Lecturer and project supervisor for ICL MRes in Systems and Synthetic Biology course

Duties: 2 hours of lectures and project supervision. Examining essays, project plans and completed projects. Supervising and co-supervising 1 or 2 project students per year (8 month projects).

Innovations: Added a 1 hour class on the PhD application process in 2011 which led to more than 50% of students leaving the 2011/2012 course with offers of PhD positions.

4. Guest lecturer on other courses at Imperial and elsewhere

Duties: 3 hours of lectures for 3 different courses.

Since 2013: 1 hour lecture for Topics in Bioengineering Year 1 (Warren MacDonald, Bioengineering)
Since 2013: 1 hour lecture for Pathology MRes Course (ICL)
Since 2011: 1 hour lecture for Part III Systems Biology (Cambridge)

5. PhD and MPhil Examination Duties

Steven Kane University of Edinburgh External Examiner Dec 2013
Judy Savitskaya University of Cambridge External Examiner Sep 2013
Mark Walsh University of Manchester External Examiner Dec 2012
Camille Delebecque University of Paris Descartes External Examiner Nov 2012
Orr Yarkoni Newcastle University External Examiner Dec 2011
Current Lab Members as Lead Supervisor

- **Ben Blount, PDRA** from Oct 2010, 4 years funding from BBSRC (SUGER)
- **Ollie Wright, PDRA** from Sep 2012, 1.2 years funding from DSTL/BBSRC
- **Francesca Ceroni, PDRA** from Jan 2013, 3.5 years funding from EPSRC
- **Ali Raza Awan, PDRA** from Jul 2013, 3 years funding from BBSRC
- **Rustem Khusainov, PDRA** from Nov 2013, 1 year funding from EPSRC (CSynBI)
- **Rhys Algar, PhD candidate** from Oct 2010, 3 years funding from CSynBI (now expired)
  
  **NB:** Rhys Algar is due to submit thesis within Oct 2013 and take viva exam before the end of 2013

- **Elena Martinez-Klimova, PhD candidate** from Jan 2011, 4 years funding from Mexican government
- **Ben Reeve, PhD candidate** from Oct 2011, 4 years funding from TMO Ltd/BioEng Dept
- **Dejana Jovicevic, PhD candidate** from Apr 2012, self-funded
- **Tim Weenink, PhD candidate** from Oct 2012, 3 years funding from BioEng Department
- **Georgious Pothoulakis, PhD candidate** from Oct 2012, 3 years funding from Leverhulme Trust
- **Marta Garcia-Bellmunt, RA Technician** from Apr 2013, 3 years funding from BBSRC and EPSRC

Current Project Students

- **Isuru Goonatilake** from Oct 2013, BioEng MEng project student
- **Mihails Delmans** from Oct 2013, BioEng BEng project student
- **Michael Florea** from Oct 2013, Biotechnology term-time UROP student
- **Bianca de Blasi, Sophie Morse, Yutong Wu, Jocelyne Holdbrook and Henrik Hagemann** from Oct 2013, BioEng MEng group project students

New Lab Members to Hire from October 2013

- **Bioinformatician, RA Technician** SUGER Project Dec 2013 – Dec 2016
- **Microbiologist, RA Technician** SUGER Project May 2014 – May 2017

Current Lab Members as Co-Supervisor:

- **Alex Webb, PDRA (Freemont)** from May 2012, 1.3 years funding from Gates Foundation
- **Arturo Casini, PhD candidate (Baldwin)** from Oct 2010, part-time PhD/RA funded 4 years (EU)
- **Wei Pan, PhD candidate (Stan)** from Oct 2011, 3 years funding from Microsoft Research
- **Alejandro Granados, PhD candidate (Tanaka)** from Oct 2012, 3.5 years funding from EPSRC
**Former Lab Members Supervised to Completion (and Destination if Known)**

* *lead supervisor unless indicated as co-S*

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<tr>
<th>Name</th>
<th>Project Details</th>
<th>Duration</th>
<th>Destination</th>
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<tbody>
<tr>
<td>Rhys Algar</td>
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<td>Nicolas Kylilis</td>
<td>Sys and SynBio MRes Project (co-S)</td>
<td>Feb 2012 - Sep 2012</td>
<td>(PhD at ICL)</td>
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<td>Joshua Smit</td>
<td>Sys and SynBio MRes Project</td>
<td>Feb 2013 - Sep 2013</td>
<td>(USA Med School)</td>
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<td>Devang Mehta</td>
<td>Sys and SynBio MRes Project (co-S)</td>
<td>Feb 2013 - Sep 2013</td>
<td>(PhD - ETH Zurich)</td>
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<td>Fabio Chizzolini</td>
<td>UROP MSc from Padova University</td>
<td>Sep 2010 - July 2011</td>
<td>(PhD at Trento U.)</td>
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<tr>
<td>Anna Kress</td>
<td>UROP MSc from University of Aachen</td>
<td>Apr 2012 - Sep 2012</td>
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<td>Joachim De-Jonghe</td>
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