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Imperial College
London

Department of Life Sciences

Newsletter

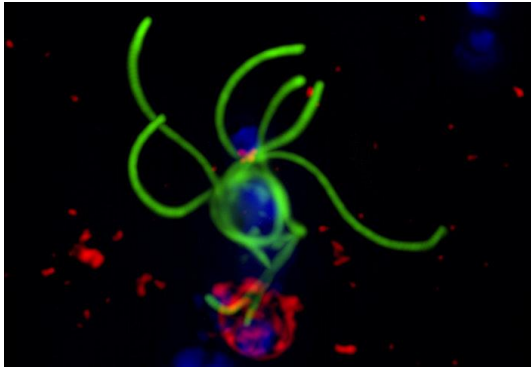
September 2018

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Preventing transmission of malaria is a key part of efforts to eliminate the disease. A person can be cured of the disease using drugs that wipe out the replicating form of the parasite, but still carry dormant, sexual forms. These are responsible for transferring the parasite to the mosquito when it bites them.

Inside the mosquito, the dormant parasites rapidly mature and then multiply, leaving them ready to infect a new person when the insect feeds again.

Now, a team led by researchers from Imperial College London have identified a number of compounds that prevent the parasite maturing inside the mosquito. The team screened more than 70,000 compounds and identified six

The number of protected areas for conservation is rising rapidly, and this trend is set to continue as international policy targets are set in the face of a 'biodiversity crisis': the rapid loss of species and degradation of ecosystems.

However, despite the vast number of studies and plans for protected areas, there is no easy way to find information on methods, trends, and progress in how to plan for these conservation areas.

Now, researchers led by James Cook University, Imperial College London and the University of Maine have taken the first step towards a global repository by launching a [database](#) of marine conservati

compounds that have the potential to be turned into drugs that block disease transmission. Their results are published today in [Nature Communications](#).

Lead researcher [Professor Jake Baum](#), from the Department of Life Sciences at Imperial, said: “Current antimalarial drugs can cure a person of the disease, but that person is still infectious to mosquitoes, and can therefore still cause someone else to become infected. [Click here](#) to find out more.

on plans. A description of the database is published today in [Biological Conservation](#).

[Dr Morena Mills](#), from the Department of Life Sciences at Imperial and co-leader of the overarching [Conservation Planning Database project](#), said a global database to track development, implementation and impact of conservation planning is urgently needed. [Click here](#) to find out more.

Mosquitoes that can carry malaria eliminated in lab experiments

Researchers have eliminated caged mosquitoes using ‘gene drive’ technology to spread a genetic modification that blocks female reproduction.

The team from Imperial College London were able to crash caged populations of the malaria vector mosquito *Anopheles gambiae* in only 7-11 generations.

This is the first time experiments have been able to completely block the reproductive capacity of a complex organism in the laboratory using a designer molecular approach.



The technique, called gene drive, was used to selectively target the specific mosquito species *An. gambiae* that is responsible for malaria transmission in sub-Saharan Africa. There are around 3500 species of mosquito worldwide, of which only 40 related species can carry malaria.

The hope is that mosquitoes carrying a gene drive would be released in the future, spreading female infertility within local malaria-carrying mosquito populations and causing them to collapse.

In 2016, there were around [216 million malaria cases](#) and an estimated 445,000 deaths worldwide, mostly of children under five years old.

Lead researcher [Professor Andrea Crisanti](#), from the [Department of Life Sciences](#) at Imperial, said: “2016 marked the first time in over two decades that malaria cases did not fall year-on-year despite huge efforts and resources, suggesting we need more tools in the fight.” More from this article [here](#).





TO OUR NEW STAFF!

Research Associate

Dr Andre Nobrega Pitaluga (Dr Masahiro Ono), Dr Eliana Patricia Coelho Real (Prof Jake Baum)

Research Assistant

Mr Andrew G Morrison (Dr Harry Low)

Research Technician

Miss Olivia K Bates

Research Fellow

Dr Peter Graystock (Dr Richard Gill)

Operations Manager - Insectary

Dr Andrew R McKemey

Visiting Professor

Prof Jackie Hunter CBE

Prof Michael Stumpf





Congratulations to our Academic staff who were promoted in September!



John Heap
Promoted to Senior Lecturer



Lauren Cator
Promoted to Senior Lecturer



Michalis Barkoulas
Promoted to Senior Lecturer



Tony Southall
Promoted to Senior Lecturer



Tolga Bozkurt
Promoted to Senior Lecturer



Joseph Tobias
Promoted to Reader in
Biodiversity and Ecosystems



Konstantinos Beis
Promoted to Reader in
Membrane Protein Structural Biology



Marc Dionne
Promoted to Reader in
Innate Immunity



Stephen Brickley

Promoted to Professor of Systems Neuroscience

Infrastructure and Facilities Committee

The new Infrastructure and Facilities Committee (IFC) has been set up to identify and prioritise needs for the Department.

The IFC provides strategic oversight of the core equipment and service provision of the Department of Life Sciences (DoLS). The Committee consults with all members of the Department in order to get a wide range of views on what is needed. The Committee then prioritises needs and reports these to the Management Committee.

Key infrastructure includes autoclaves, hot and cold rooms, gas supplies, culture rooms and hoods. Key shared equipment requiring central support includes centrifuges, qPCR and MS. Facilities include Flow Cytometry, Mass Spectrometry and FILM.



Prof Mark Isalan (Chair, IFC)

Imperial College Expenses Policy

All staff and students in Life Sciences are expected to adhere to the College expense policy. Any exceptions must be approved beforehand by the Head of Department or Operations Manager (DoM) and will need to be justifiable to auditors.

A summary of the policies can be found at the following [link](#)

Staff and students should not expense goods that can be bought via College suppliers without prior approval of the DoM. All goods over £100 should be bought using the virtual credit card.

Either s.nurboja@imperial.ac.uk or a.jfitzgerald@imperial.ac.uk can raise these for you.

Travel tickets should be booked well in advance to ensure best prices. Staff intending to claim travel expenses for teaching activities are reminded that teaching timetables are available by the start of the academic year. Taxis to airports cannot be taken in the UK before 9.00pm without pre-approval. Travel costs that are broadly in line with normal commuting cannot be charged if staff are away from their main campus the entire day. Entertainment costs should be kept to the limits allowed.

Prizes and Awards



Dr Cristina Lo Celso was awarded the top prize from the German Society for Cell Biology, the Carl Zeiss Lecture.

Dr Colin McClure was awarded an Innovation Grant from the Society for Developmental Biology. This was based on his research proposal, *"Generating a Rapid-Action, Chemically-Inducible Gene Expression System in the Fruit Fly"*.

Dr Geoff Baldwin has been awarded a £1.1m grant from EPSRC in collaboration with Prof Stephen Muggleton (Dept of Computing).
G S Baldwin (PI), S Muggleton (Co-I)

EPSRC; EP/R034915/1; £1,105,249

"A semi-autonomous robot synthetic biologist for industrial biodesign and manufacturing".

Publications

Dr Patrik Jones' group:

In collaboration with Bielefeld University Patrik's group have published a new research article in *Metabolic Engineering* journal. The paper describes several functioning synthetic metabolic pathways in photosynthetic microorganisms for conversion of CO₂ into hydrocarbon fuels. This work paves our way closer to commercial implementation of photobiocatalytic systems that directly convert CO₂ into infrastructure-compatible fuels.

Link to article: <https://doi.org/10.1016/j.ymben.2018.08.008>

Dr Nadia Guerra's lab:

The Paradoxical Role of NKG2D in Cancer Immunity

Link to paper: <https://doi.org/10.3389/fimmu.2018.01808>

Prof Anne Dell and Dr Stuart Haslam:

[*Loss of GCNT2/I-branched glycans enhances melanoma growth and survival.*](#)

Sweeney JG, Liang J, Antonopoulos A, Giovannone N, Kang S, Mondala TS, Head SR, King SL, Tani Y, Brackett D, Dell A, Murphy GF, Haslam SM, Widlund HR, Dimitroff CJ.



Conferences & Invited talks

Dr Calvin Tiengwe was recently invited to give a talk at ICOPA 2018 - the 14th International Congress of Parasitology (19th-24th August 2018), Daegu, South Korea . The session was on *“Recent Advances in African Trypanosomes”* and the talk was on *“ER-associated degradation and disposal of misfolded GPI-anchored in African trypanosomes”*.

Alex Leary was a selected speaker at the 83rd Harden conference (3-7th June) and at the 21st Meeting of the European Network for Plant Endomembrane Research (ENPER) (4-7th September). Alex is a PhD student in Tolga Bozkurt’s Lab.

Cian Duggan (PhD student) gave a conference talk in July at the *“International Congress of Plant Pathology”* in Boston. It is the largest conference in plant pathology.

<http://www.icpp2018.org/Pages/default.aspx>

Myriam Haltalli, a final year PhD student from Dr Cristina Lo Celso's group, presented her work through invited talks at the EMBL Hematopoiesis conference in Heidelberg last June and at the

International Society for Experimental Hematology (ISEH) in Los Angeles in August. Poster title *"The role of Bone Marrow Stroma in the response of Haematopoietic Stem Cells to Plasmodium infection"*. Myriam also gave a talk at the New Investigators Technology Session on intravital imaging techniques and image analysis.

Dr Tanai Cardona Londono gave an invited plenary talk at the 16th International Symposium (6th August) on Phototrophic Prokaryotes held in Vancouver. The talk title was *"Earliest stages in the evolution of oxygenic photosynthesis"*.

Dr Londono was also invited to give departmental seminars at Arizona State University's Center for Bioenergy and Photosynthesis and University of Bristol's School of Geographical Sciences earlier this year on the subject of the evolution of photosynthesis.



ENPER 2018

Upcoming talks

11th Oct: As part of the launch of the College's work to apply for the Race Equality Charter, Chi Onwurah MP, Shadow Minister for Industrial Strategy, Science and Innovation has been invited to talk about the opportunities and challenges of diversity in STEM.

http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/eventssummary/event_10-8-2018-12-45-20

2nd Oct: Dr Tiago Costa will give a talk at the Bacterial Protein Export 2018 conference and chair the conference session on the topic "*One step secretion systems*".

<https://rega.kuleuven.be/bac/economou/bacterial-protein-export/programme>.

Research Assessment Workshop

Professor Stephen Curry co-hosted a workshop on research assessment at the College on 21st Sept 2018. This aimed to explore current practice at Imperial and elsewhere, and what it means to researchers here that, as an institution, we have signed the Declaration on Research Assessment.

The proceedings were recorded and are available on the college YouTube Channel: <https://youtu.be/lpKyN-cXHL4?t=7m23s>

The workshop included presentations from:

Nick Jennings (Vice Provost for Research)

<https://youtu.be/lpKyN-cXHL4?t=7m23s>

Stephen Curry

<https://youtu.be/lpKyN-cXHL4?t=24m14s>

Lizzie Gadd (Research Policy Manager, Loughborough University)

<https://youtu.be/lpKyN-cXHL4?t=1h8m31s>

...and a panel discussion to tease out various issues, chaired by **Prof. Chris Jackson** (Earth Sci & Eng.) - <https://youtu.be/lpKyN-cXHL4?t=2h4m18s>

FoNS News

Active Learning Showcase

The FoNS Active learning Challenge 2018 showcase was held on Tuesday 18th September. You can find the details of the entries, including links to video recordings, here:

<http://www.imperial.ac.uk/natural-sciences/education-and-teaching/the-fons-active-learning-summer-challenge-2018/active-learning-showcase/>

The panel of staff and student judges agreed that all entries showed excellent pedagogic techniques and the students were very positive about the active learning demonstrated. The overall winners were Dr Caroline Clewley, Dr Steve Cook and Professor Pietro Spanu.



#iamabiologist: using twitter to bring those working in the biosciences together

#iamabiologist

Staff who may have not previously been engaged with social media have a chance to introduce themselves to the rest of the community, and it is a forum for more regular Tweeters to tell us about their latest work.

<https://blog.rsb.org.uk/iamabiologist-using-twitter-to-bring-those-working-in-the-biosciences-together/>



Wellcome photography prize
launched with focus on health.

A new international photography
prize for pictures that tell stories
about health, medicine and science

has been launched by the charitable foundation [Wellcome](#).

Deadline for entries is 17 December 2018.

More information can be found here:

<https://www.theguardian.com/artanddesign/2018/aug/14/wellcome-photography-prize-launched-with-focus-health-research>

Acapella Science:

The Molecular Shape of You (Ed Sheeran Parody):

<https://www.youtube.com/watch?v=f8FAJXPBdOg&app=desktop>

Evo-Devo (Despacito Biology Parody):

https://www.youtube.com/watch?v=ydqReeTV_vk

**STUDENT
MENTAL
HEALTH**

The College is supporting improved mental health outcomes for students by developing a new Student Support Strategy. This is led by Hannah Bannister, Director of Student Services. Students can share their ideas on the dedicated [consultation page](#). In addition to the strategy, Professor Stephen Curry (Assistant Provost for Equality, Diversity and Inclusion) and Hannah are working with a diverse group to improve the way in which the College addresses sexual harassment and sexual violence.

[Click here](#) for more information



Equality Diversity and Inclusion Committee

Activities

The Equality Diversity and Inclusion (EDI) Committee is now working towards the department's next Athena SWAN award due in November. A key part of the application is to devise an Action Plan that will result in palpable progress on gender equality. Though the committee takes the lead on this, we would be grateful for any suggestions for actions that you would like to see incorporated into the plan. To find out more about the Athena SWAN award and the EDI Committee visit our web pages [here](#).

Staff Social Events

The EDI Committee want to hear from YOU!

Do you have any suggestions for a Departmental social event?

Previously we have organised a boat party but this year we would like to do something different. If you have any ideas please let us know by emailing

dols.edi@imperial.ac.uk

E-Learning

Equality and diversity at Imperial College - [click here](#).

By completing this course, you will:

- know what the College is doing to promote equality and diversity and the important part that you play as an employee
- know what you can do to personally ensure equality and diversity are embedded into your department/area
- have an understanding of equality legislation
- know how you can access further information and training

Recruitment and Selection Training

This course provides the basics of what you need to know before you participate in recruiting and selecting staff. It is designed for non-HR people for whom recruitment is a minor, albeit critical, aspect of their role.

Details of the e-Learning course can be found [here](#):

You can also apply for 1 day practical session when you have completed the test at the end of the e-Learning course.



Active Bystander Training

The College's Active Bystander training programme has won an 'Excellence in HR' award at the 2018 Universities Human Resources (UHR) Awards. The UHR Awards celebrate the most exceptional initiatives and projects in Higher Education Human Resources. Imperial's [Active Bystander](#) programme triumphed in the Organisational Development and Culture Change category. [Click here](#) to find out more.

The training aims to empower staff to challenge poor behaviours, and bring about cultural change through the reinforcement of messages defining the boundaries of unacceptable behaviour.

We have had some great feedback from the session organised by the Department in May:

'Very nice session, especially being so short. For once one does not feel like the half a day could have been condensed in 20 minutes!'

'I haven't had a chance to put the new skills to test yet, but I believe that it has given me confidence and assurance not to be a passive bystander in the future.'

'I found it useful, especially the practical tips of how to respond in such situations'

To find out more about Active Bystander training [click here](#).

Active Bystander Training

Would you intervene if you saw someone being harassed or bullied?

Professor Tom Welton, Dean of the Faculty of Natural Sciences, invites you to attend one of the forthcoming Active Bystander Training Sessions to learn strategies for intervention.

Friday 30 November 2018

Rm 3.19, Faculty Building, South Kensington Campus

Session 1: 2.00pm – 3.00pm

Session 2: 3.30pm – 4.30pm

Places are limited on all sessions, so book early. To reserve a place, please email Laura Honey, Trainee HR Adviser, l.honey@imperial.ac.uk

HoD Citizenship Awards

Throughout 2019 we will be showcasing staff who were presented with a HoD Citizenship Award at the end of 2018.

More coming soon...
