

London School of Hygiene & Tropical Medicine

“world’s leading research-focused graduate school”

- #3 in the world for biomedical and health sciences (CWTS Leiden Ranking, 2015)
- #3 in the world for social sciences and public health (US News Best Global Universities Ranking, 2015)

Faculty of Epidemiology and Population Health

Faculty of Infectious & Tropical Diseases

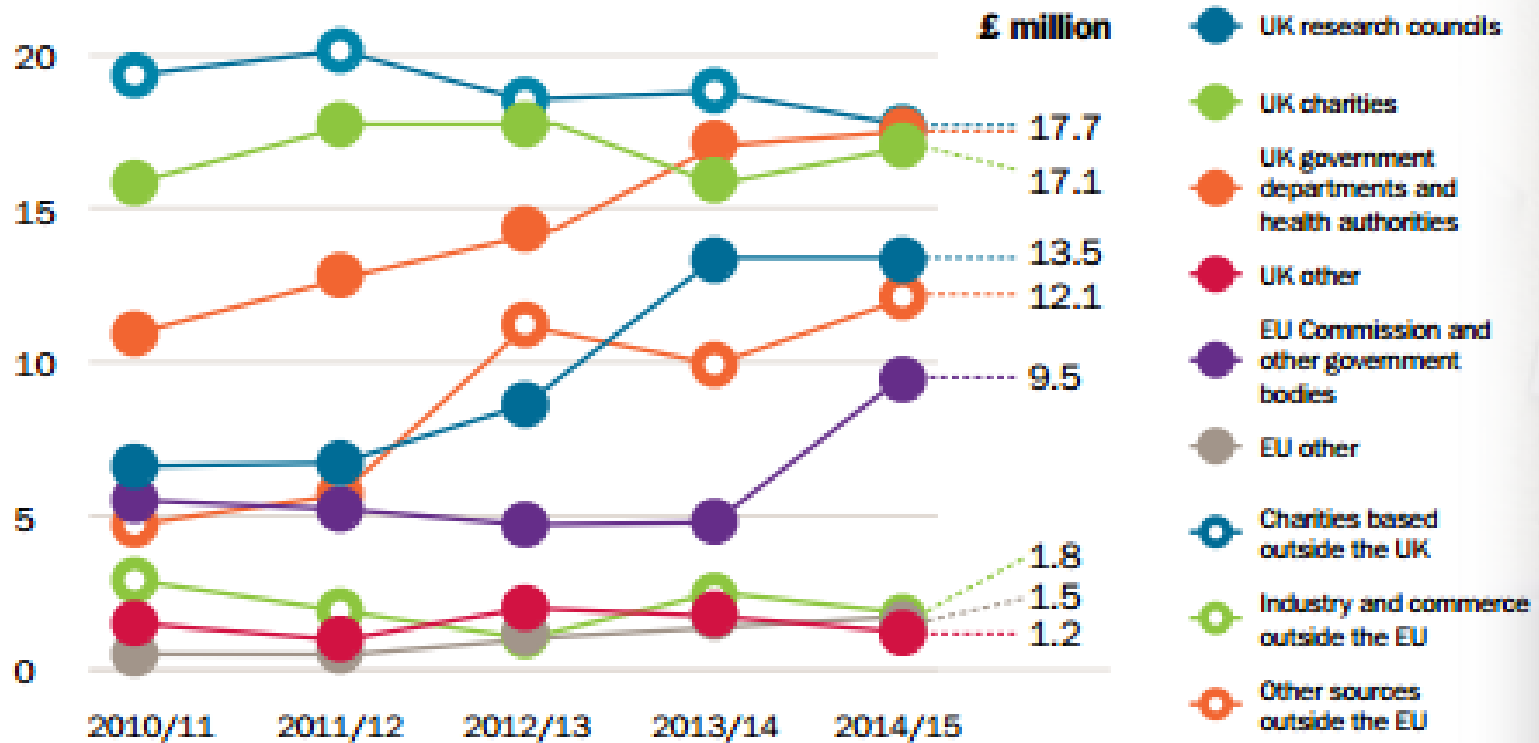
Faculty of Public Health and Policy



Research funding £92m 2014/15

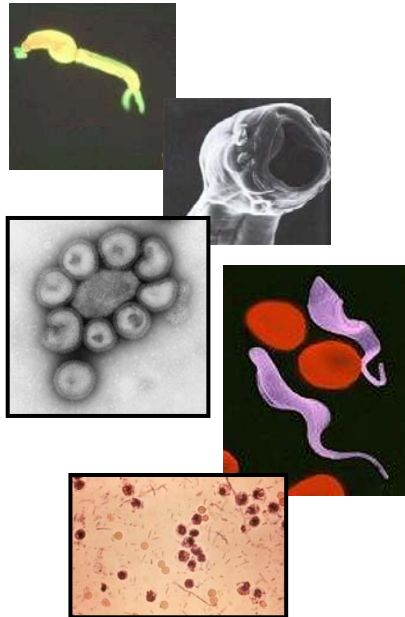


Research income: grants and contracts



Multi-disciplinary Approach to Answering Research Questions

Pathogens



- Laboratory sciences
 - Molecular and cell biology
 - Genetics
 - Immunology
 - Biochemistry/drug discovery
- Clinical studies
 - Epidemiology
 - Immunology
 - Clinical trials
- Vector biology
- Disease control

Disease



Transmission



Faculty of Infectious and Tropical Diseases

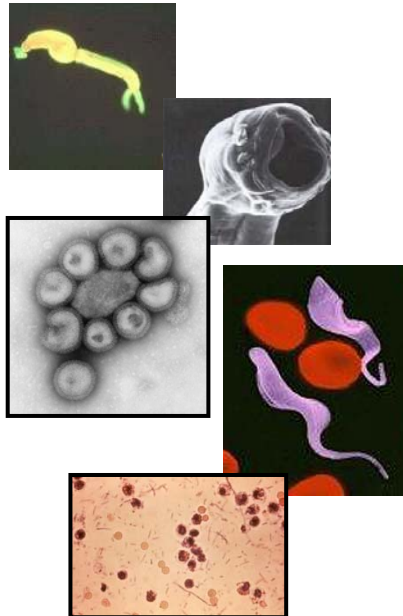
- 50 staff based overseas, 150 PhD students, Malaria and TB Centres

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MEDICINE



Multi-disciplinary Approach to Answering Research Questions

Pathogens



New grants awarded in 2014/15:
top six by total value

1. Innovative Medicines Initiative 2
Joint Undertaking for Ebola vaccine
trials – Deborah Watson-Jones:
EUR0 58.3 million
2. UK Department for International
Development - Data For Decision
Making - David Schellenberg:
£4.2 million
3. Medical Research Council -
Rapid Urine-Based Screening for
Tuberculosis to Reduce AIDS-
Related Mortality in Hospitalized
Patients in Africa - Stephen Lawn:
£2.1 million
4. USAID - Translating Research into
Action - Oliver Cumming:
US \$2.0 million
5. Medical Research Council -
Dissecting the Red Blood Cell
Invasion Pathways of the Malaria
Parasite *Plasmodium knowlesi* -
Robert Moon: £1.1 million
6. European Research Council -
Translational regulation in the
persistence and drug susceptibility
of *Mycobacterium tuberculosis* –
Theresa Cortes: EUR0 1.5 million

Disease

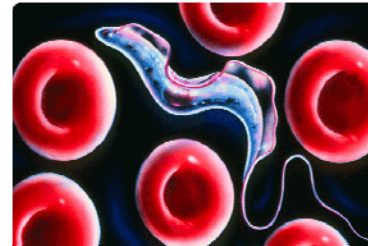
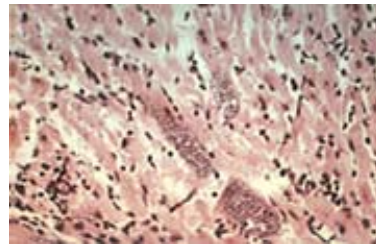


Transmission



Neglected Tropical Diseases @ LSHTM

R & D on drugs, vaccines and diagnostics for - Schistosomiasis, Leishmaniasis, Chagas Disease and human African Trypanosomiasis



Operational Research and Implementation

- Visceral leishmaniasis - 6 country partnership
- Filariasis, STHs,

Recent research output – High-throughput drug screening

OPEN ACCESS Freely available online



Whole Organism High-Content Screening by Label-Free, Image-Based Bayesian Classification for Parasitic Diseases

Ross A. Paveley¹, Nuha R. Mansour¹, Irene Hallyburton², Leo S. Bleicher³, Alex E. Benn⁴, Ivana Mikic³, Alessandra Guidi¹, Ian H. Gilbert², Andrew L. Hopkins², Quentin D. Bickle^{1*}

¹Department of Infection and Immunity, London School of Hygiene and Tropical Medicine, London, United Kingdom, ²Division of Biological Chemistry and Drug Discovery, College of Life Sciences, University of Dundee, Dundee, United Kingdom, ³Accelrys Inc., San Diego, California, United States of America, ⁴Accelrys Ltd, Cambridge, United Kingdom



High-throughput screening of test compounds against parasitic schistosome worms

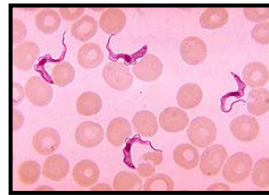
Capacity >500,000 compounds/year

Recent research output - Molecular Parasitology

nature

High-throughput decoding of antitrypanosomal drug efficacy and resistance

Sam Alford¹, Sabine Eckert^{2†}, Nicola Baker¹, Lucy Glover¹, Alejandro Sanchez-Flores², Ka Fai Leung³, Daniel J. Turner^{2†}, Mark C. Field³, Matthew Berriman² & David Horn¹



Holistic approach for genome-wide functional screening in African trypanosomes

Resistance mechanisms resolved for all 5 drugs currently used to treat African sleeping sickness

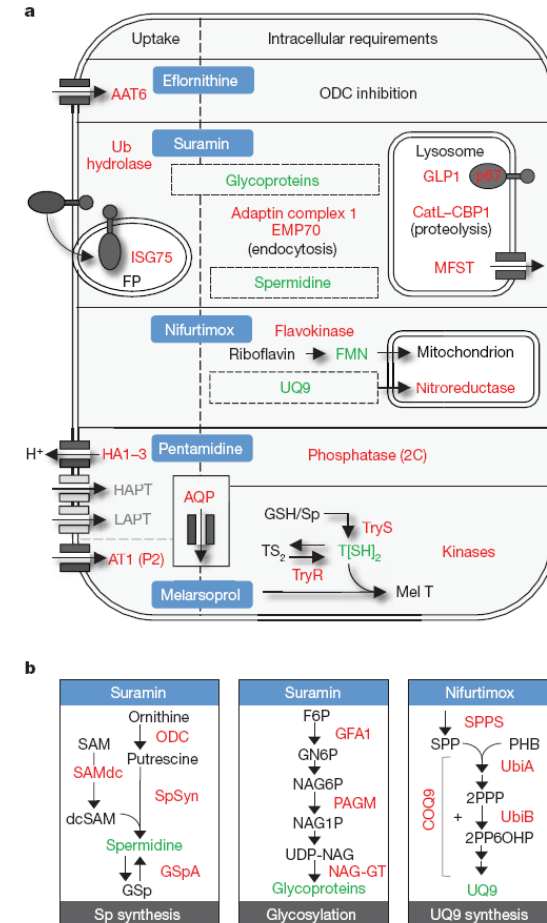
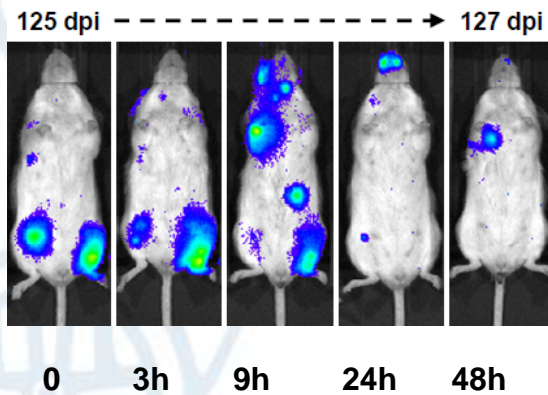
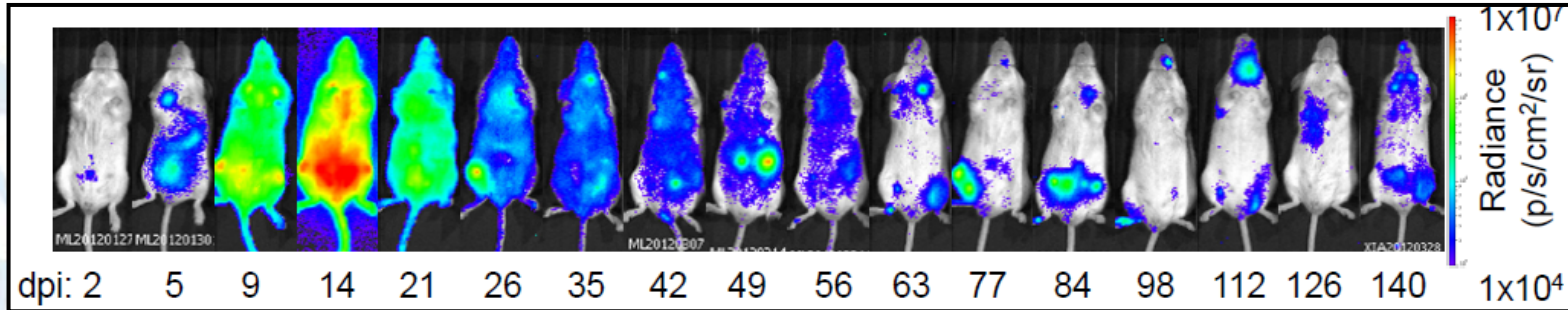
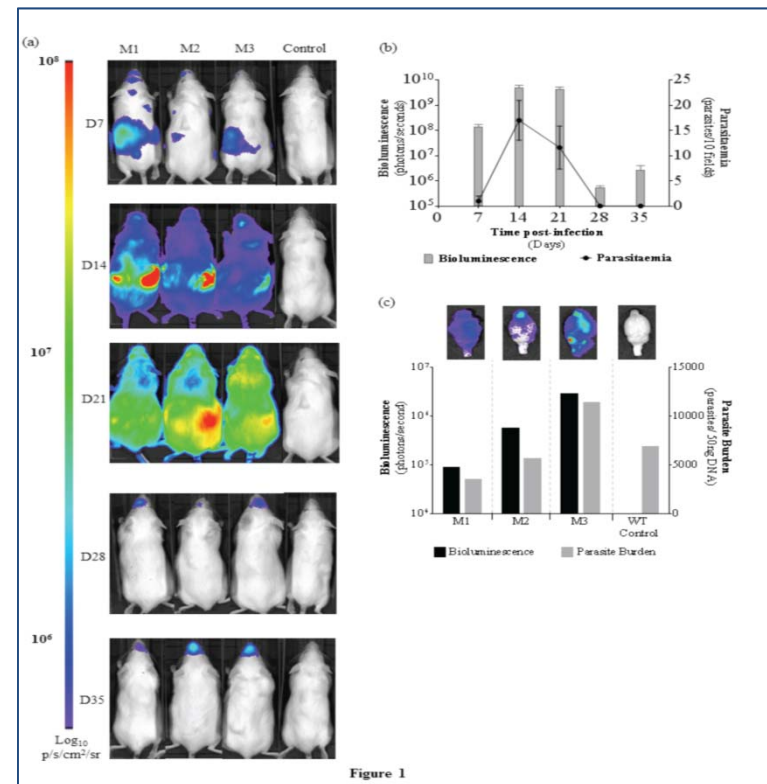


Figure 4 | Determinants of drug efficacy in African trypanosomes.

Real time imaging of experimental Chagas disease and human African trypanosomiasis



Testing novel antimicrobials in real time



Recent research output - clinical trials

www.thelancet.com Published online September 12, 2013 <http://dx.doi.org/> THE LANCET

Effect of a serogroup A meningococcal conjugate vaccine (PsA-TT) on serogroup A meningococcal meningitis and carriage in Chad: a community trial

D M Daugla, J P Gami, K Gamougam, N Naibei, L Mbainadji, M Narbé, J Toralta, B Kodbesse, C Ngadoua, M E Coldiron, F Fermon, A-L Page, M H Djingarey, S Hugonnet, O B Harrison, L S Rebbetts, Y Tekletsion, E R Watkins, D Hill, D A Caugant, D Chandramohan, M Hassan-King, O Manigart, M Nascimento, A Woukeu, C Trotter, J M Stuart, M C J Maiden, B M Greenwood

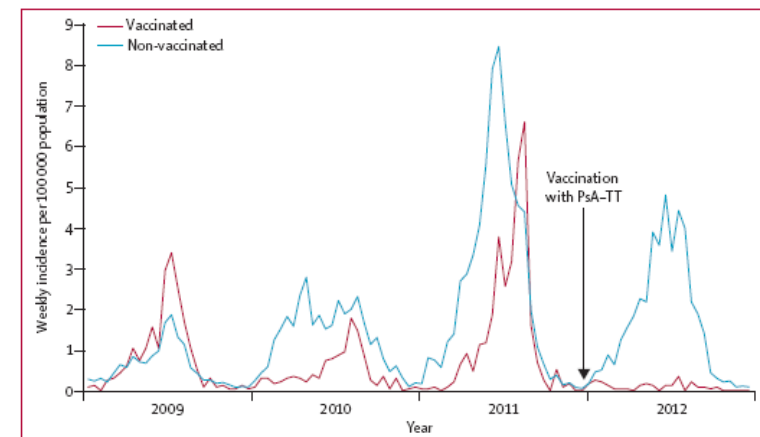


Figure 3: Incidence of reported cases of meningitis in Chad, 2009–12
Vaccination with PsA-TT was undertaken in patients aged 1–29 years at the end of 2011 (arrow).
PsA-TT=serogroup A meningococcal polysaccharide-tetanus toxoid conjugate vaccine.

Testing a new meningitis vaccine during a serogroup A meningococcal meningitis epidemic in Chad

1.8 million individuals received one dose of the vaccine

The result - close to full protection





Three new directions

- Bloomsbury Research Institute
- Chariot Innovations
- London Research Centre for Neglected Tropical Diseases



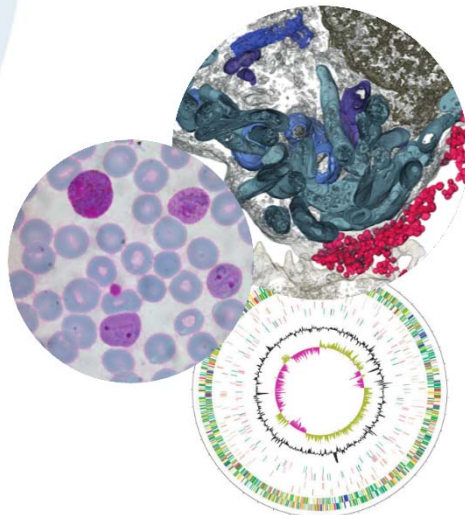
Bloomsbury Research Institute

New joint research facility

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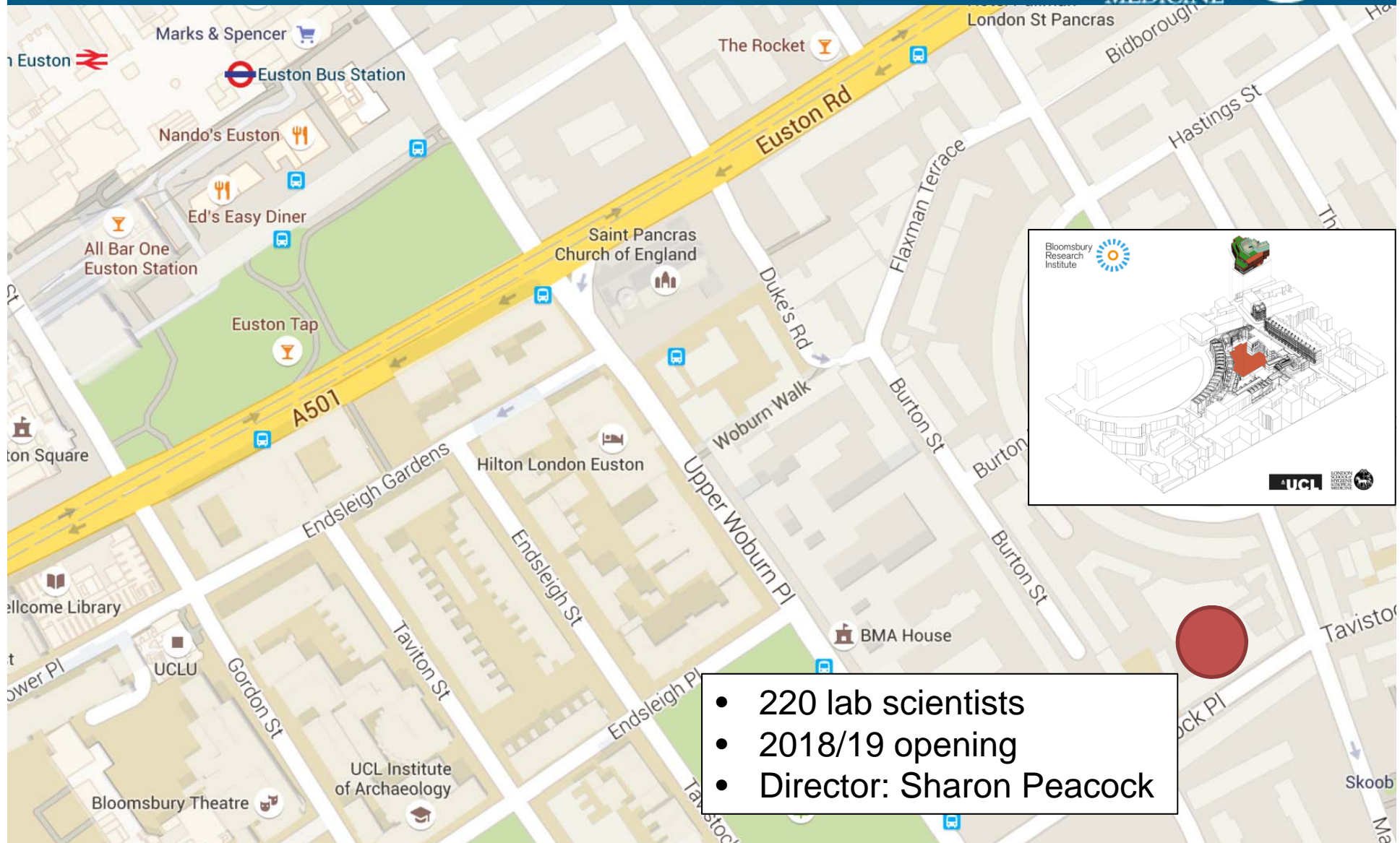
“The application of basic science to discover new tools for prevention and control of infectious diseases through an improved understanding of host pathogen interactions and population biology.”



Bloomsbury
Research
Institute



Location in the heart of Bloomsbury



- 220 lab scientists
- 2018/19 opening
- Director: Sharon Peacock

Chariot Innovations



- Wholly owned subsidiary of LSHTM
- Encourage and support knowledge translation, business development, IP portfolio
- Two companies launched

Arthropod Control

Arthropod Control Product Test Centre (artec), since 2013

- Consultancy
- laboratory tests
- clinical evaluation

Vecotech Ltd (2015)

- Develop novel attractant and repellent technologies
- Commercialise discoveries



Artec Team



PEEK Foundation



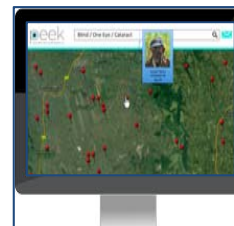
Portable Eye Examination Kit



Examine



Geo-locate



Treat





LONDON CENTRE FOR NEGLECTED TROPICAL DISEASE RESEARCH

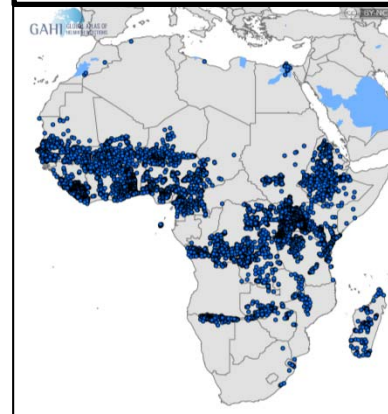
The LCNTDR, a joint initiative of the [Royal Veterinary College](#), the [Partnership for Child Development](#), the [Schistosomiasis Control Initiative](#), [Imperial College London](#), the [London School of Hygiene & Tropical Medicine](#), and the [Natural History Museum](#), undertakes cutting-edge research to build the evidence base around the design, implementation and evaluation of neglected tropical disease control and elimination programmes.

- LCNTDR was launched in 2013 with the aim of providing focused operational and research support for NTD control.
- LCNTDR member institutions house leading NTD experts with a wide range of specialities, making it a terrific resource for cross-sectoral research and collaboration.

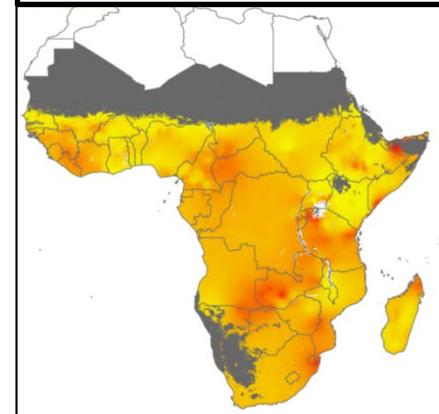
Spatio-temporal epidemiology of neglected tropical diseases

The **Global Atlas of Helminth Infections** conducts epidemiological research into the control of parasitic diseases, combining spatial and economic statistical methods with substantive field research.

Availability of schistosomiasis parasitological survey data: Africa



Predicted prevalence of hookworm infection across sub-Saharan Africa in 2010



CONTACT SUBSCRIBE LOGIN

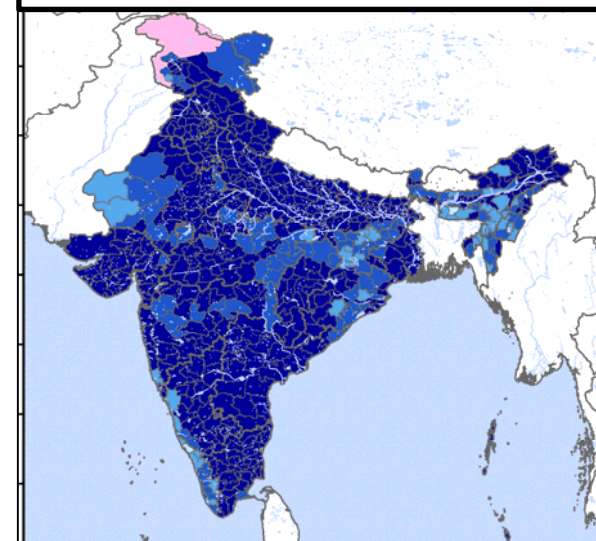
GAHI GLOBAL ATLAS OF HELMINTH INFECTIONS

SELECT COUNTRY

HOME MAPS TRAINING RESEARCH NEWS & BLOGS WORMS ABOUT

Use our maps to inform your decisions about NTD control

Use of an improved drinking water source: Total population coverage in 2011 for India



More information on the ITD web pages

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Malaria Centre: www.lshtm.ac.uk/malaria

Genomics: <http://grf.lshtm.ac.uk/>

IDEAS: <http://ideas.lshtm.ac.uk/>

Sanitation & Hygiene research for Equity: <http://www.shareresearch.org/>

African Meningococcal Carriage Consortium: <http://www.menafricar.org/>

Bloomsbury Research Institute: <http://www.bloomsburyresearch.org.uk/>