



**Supporting innovation for
global health:**

a Wellcome Trust perspective

Ted Bianco

wellcometrust

Henry Wellcome

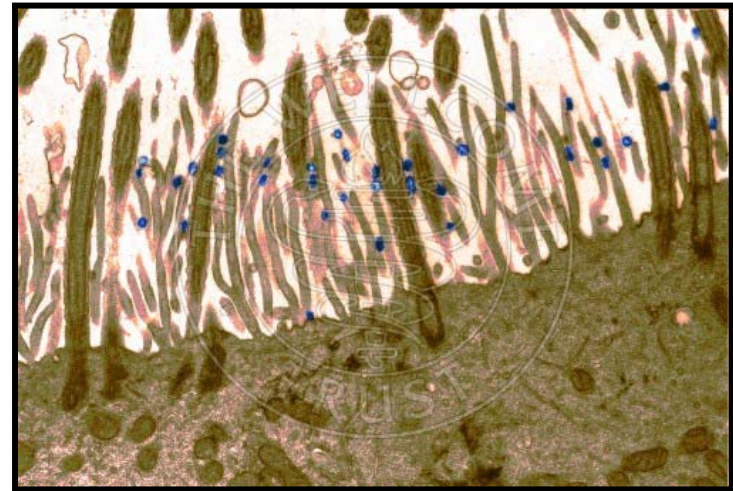


- Inventor of the 'tabloid'
- Commercialiser of quinine
- Founder of the company that developed:
 - AZT
 - Malarone
 - FMD & Rubella vaccines



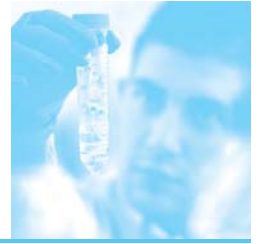
Know the enemy...

- **Genome sequencing**
 - viral, bacterial, parasitic
 - human
- **Genetic variation**
 - priority pathogens
 - human
- **Biology of infection**



- **Annotated databases**
 - Ensembl
 - PlasmodB etc
- **Structural biology**
 - human proteome
 - pathogen targets

Foster a research community...



Tropical Medicine fellowships

- >200 personal awards
- Focused on centres of excellence
- Outputs: circa 1000 publications (>10% in Nature/Science/Lancet)

International Senior fellowships

- 70 awards in India, S.Africa, E.Europe
- Objective: nurture science excellence
- Outputs so far:
circa 400 publications/12 patents



Create critical mass...

Hospital for Tropical Diseases, Ho Chi Minh City.
Malaria, dengue, typhoid, JE, tetanus, TB meningitis, avian influenza, CNS infections

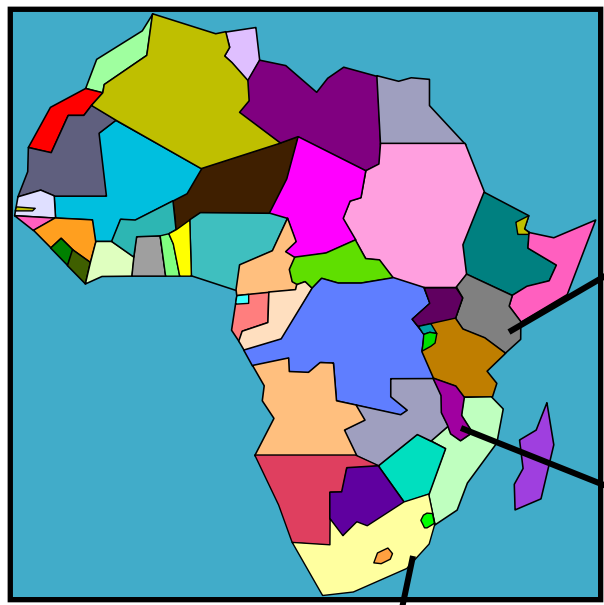
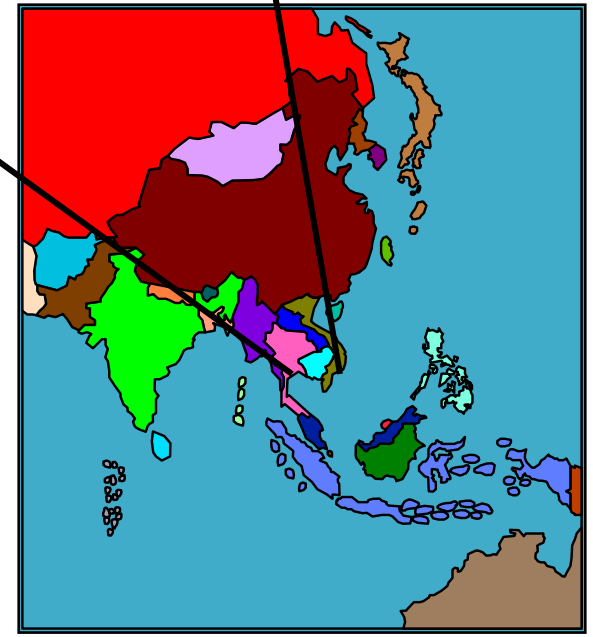
Jeremy Farrar

Mahidol University, Bangkok.
Sites across Thailand, Laos - malaria, melioidosis, leptospirosis, tick borne infections

Nick White

KEMRI, Nairobi, Kilifi.
Childhood infections, malaria, bacteraemia, pneumonia, RSV

Kevin Marsh



Africa Centre, KwaZulu-Natal.
HIV, population studies, STIs, maternal & child health

Marie-Louise Newell

College of Medicine, Blantyre.
Severe malaria, pneumococcal disease, NT salmonella, viral CNS infection, severe anaemia

Malcolm Molyneux

techtransfer@wellcome

Purpose

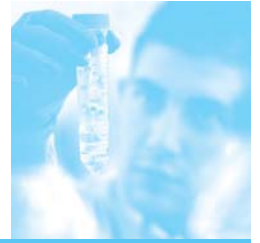
To maximise the impact of research innovations on health by facilitating their route to the 'market'

- early-stage R&D funder
- focused on funding gaps
- motivated by public good

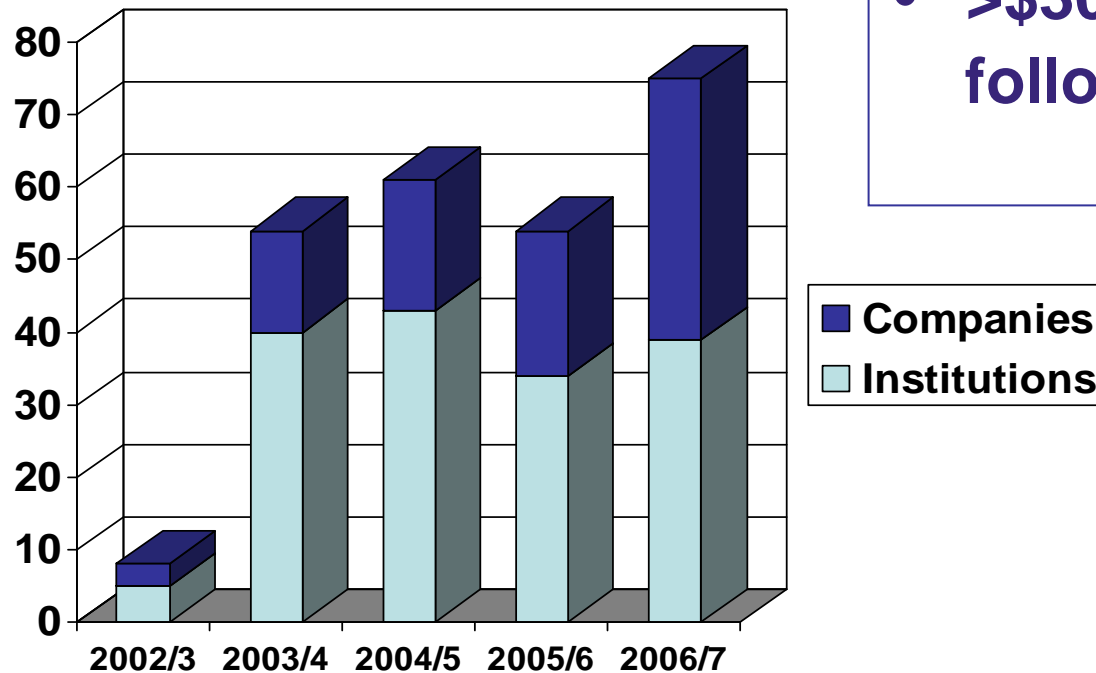


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Product R&D funding to date



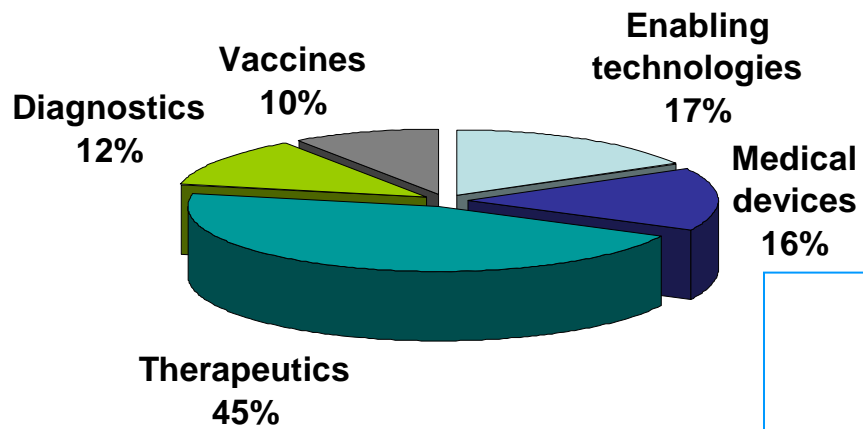
- 120 projects supported
- >\$200 million committed
- Average Award size \$1.5M (\$180K to \$16M)
- >\$300 million raised in follow-on financing



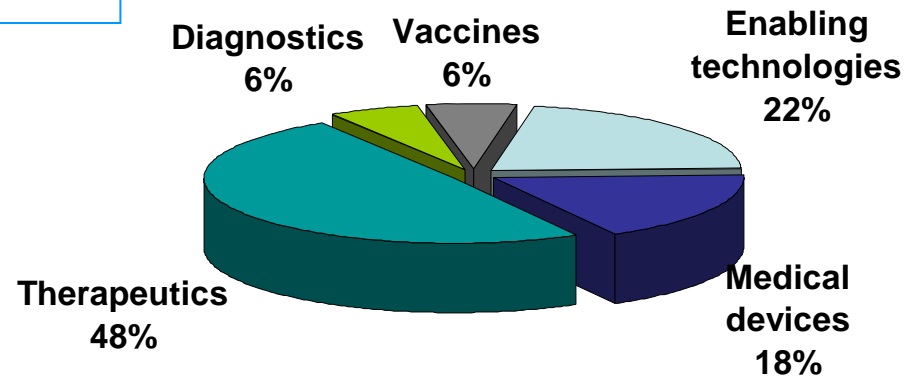
Diversity of Translation Award scheme



Applications received



Awards made





Global health vaccine R & D

Example 1: Typhoid fever vaccine



Award

Emergent Biosolutions

Jeremy Farrar, Wellcome programme at Cho Quan Hospital

Objective

Evaluation of single dose, drinkable vaccine in Vietnam

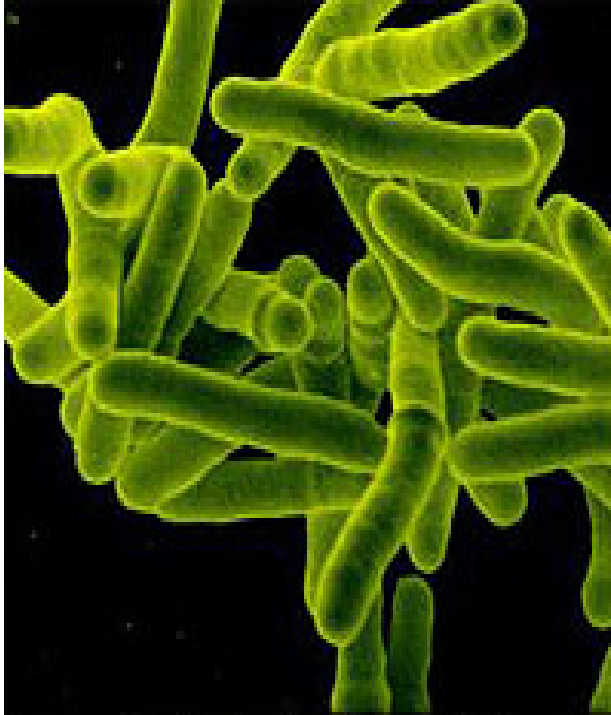
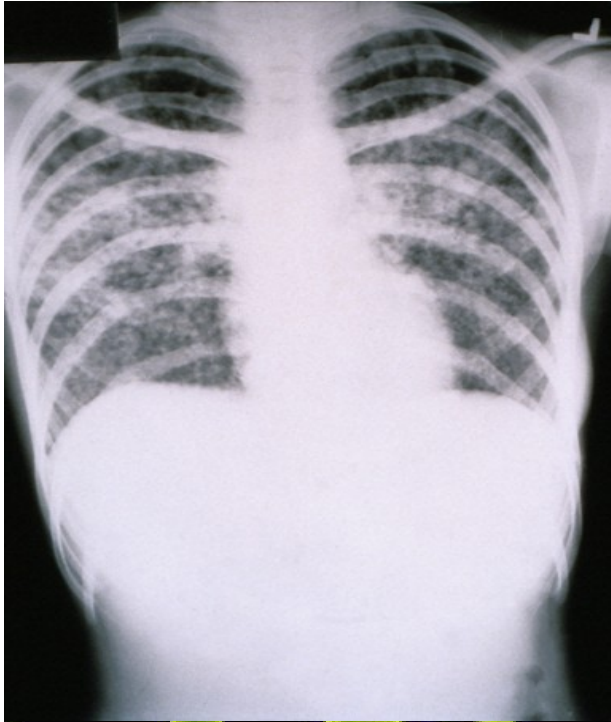
Win-win proposition

Emergent technology advanced

SE Asian opportunity created

North-South partnership fostered





Example 2: TB vaccine



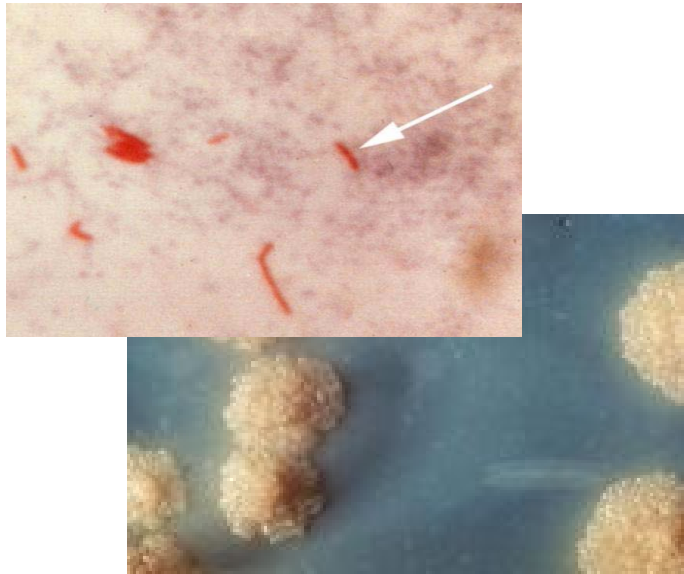
- **Challenge is to induce a potent CMI over time**
- **Encouraging results with candidate subunit vaccine, MVA85A**
- **Strong antigen-specific IFN recall response after BCG priming (months or years earlier)**
- **Integration with global effort is key**
- **Prime-boost strategy would complement, not replace, current TB prophylaxis**

Work of Dr Helen McShane, Senior Research Fellow, Univ Oxford



Point-of-care diagnostics

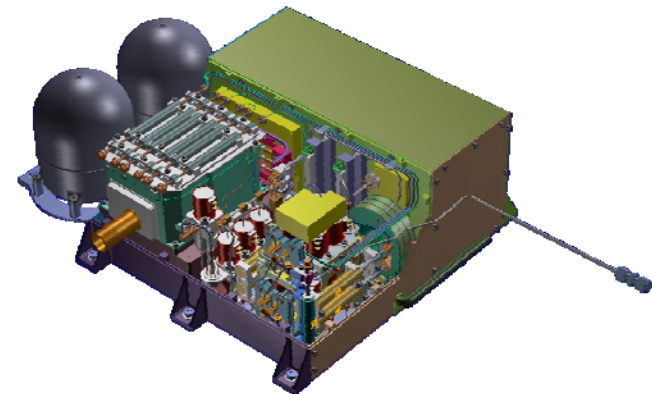
Rapid diagnosis of TB

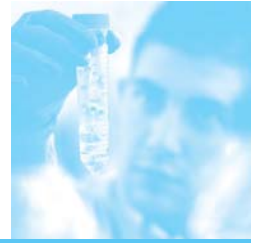
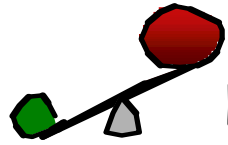


- Current diagnosis insensitive and/or slow
- Major unmet need in case detection
- New solution required
- Reference lab is primary target

New collaboration between OU & LSHTM
Space research meets tropical medicine

Clinical studies: Corbett
Mass Spec development: Morgan/Pillinger





Dipstick technology for point-of-care use

Features:

- Low unit cost
- Minimal infrastructure
- Quick & Simple
- FDA standard



Applications:

- Chlamydia – test and treat
- HBV/HCV/HIV blood bank screen
- HIV: viral load/CD4 monitoring
- Trachoma: active case detection





Drug discovery R&D

Funding of drug discovery

3 Arm Strategy



Industry Joint venture



- Novartis Institute
- Syndicate Funding (\$20M, 5 yrs)
- Disease Specific
- Portfolio Based
- Multiple Collaborations

University Infrastructure



- University of Dundee
- Syndicate Funding (\$25M, 5 yrs)
- Specific Therapeutic Area
- Portfolio Based
- Industry Recruitment
- SAC

Seeding Drug Discovery Initiative

- Academia / SME / Pharma
- \$180M, 5 Year Fund
- Any Therapeutic Area
- Project based funding
- R&D must address unmet need (new treatment or significant advance)



'My best friend is the one who
brings out the best in me'

Henry Ford 1863-1947