

UNIVERSITY OF  
BIRMINGHAM



# BactiVac Network

## DCVMN Webinar

28 February 2019, 9:00am (GMT+01:00)

**Prof Cal MacLennan**

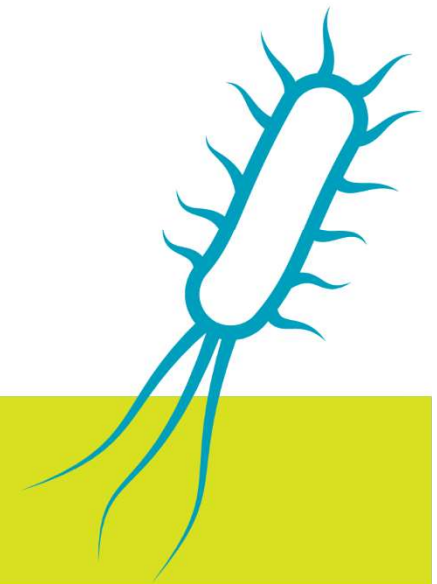
**Directors:** Profs Cal MacLennan & Adam Cunningham



# BactiVac: the need

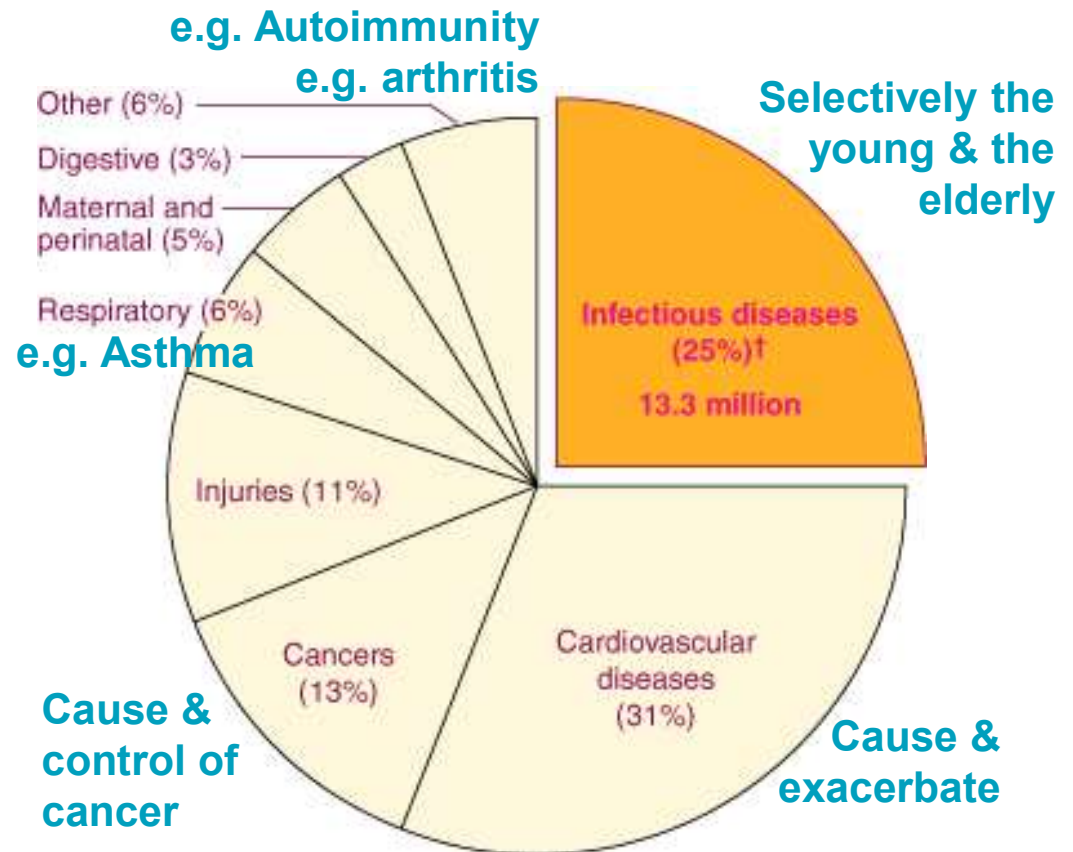
UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network 



# Causes of world-wide deaths

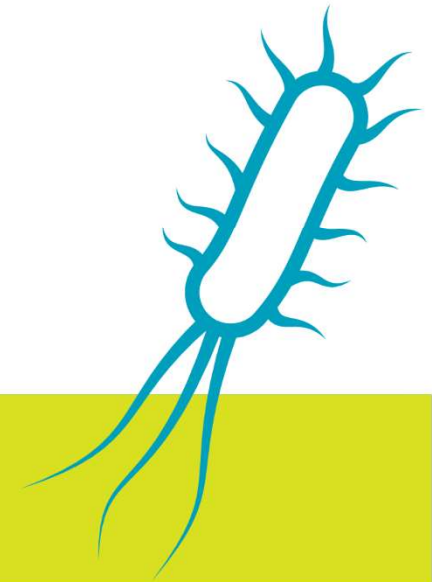
- No vaccines for many globally significant bacterial infections
- Part of solution to antimicrobial resistance (AMR)
- **No existing vaccine network focused on bacterial infections**



# BactiVac: the vision

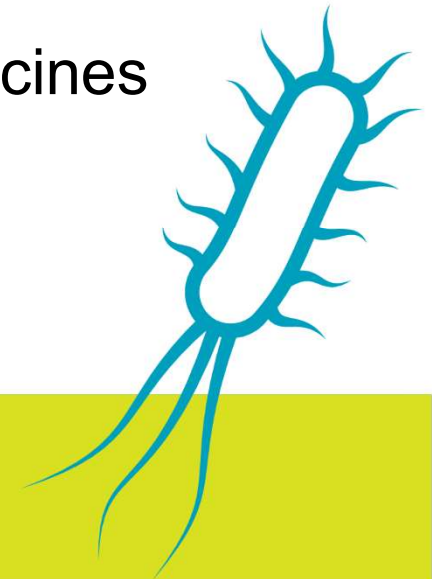
UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network

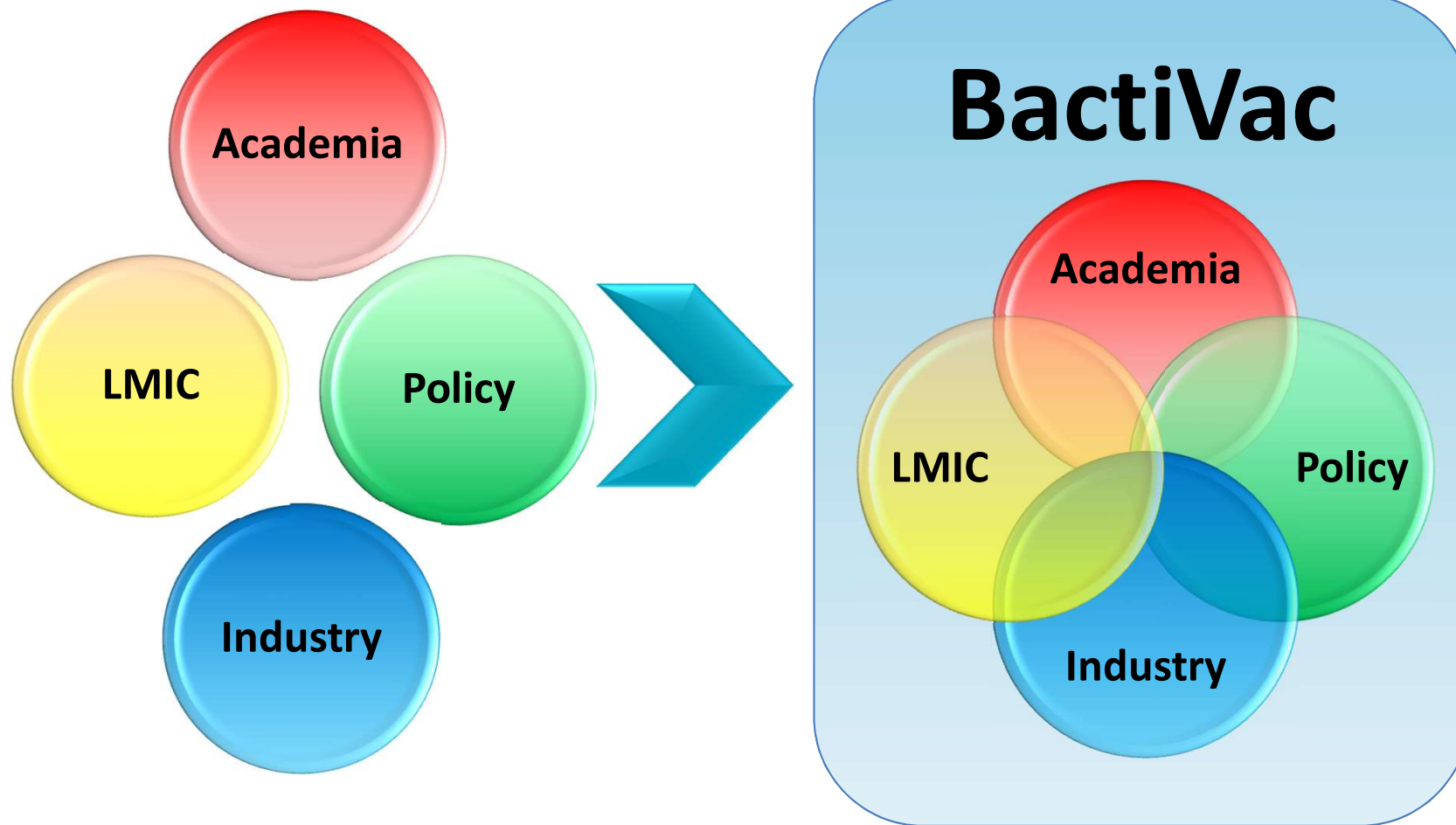


***Accelerating development of vaccines  
against bacterial infections relevant to LMICs***

- Create a sustainable network for vaccine development
- Catalyst project and training funding
- Attract investment/leverage funding for LMICs/UK
- Advocacy for the development of bacterial vaccines



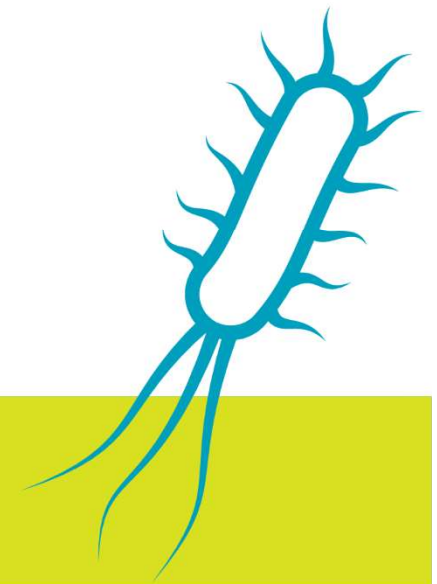
# What will BactiVac achieve?



# BactiVac: our approach

UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network



# Support new collaborations through catalyst funds (project and training)

## ■ Projects

- Typically **£50k** for up to 6 months' duration
- Exceptionally **£100k** for up to 12 months' duration
- Pre-clinical to clinical transition

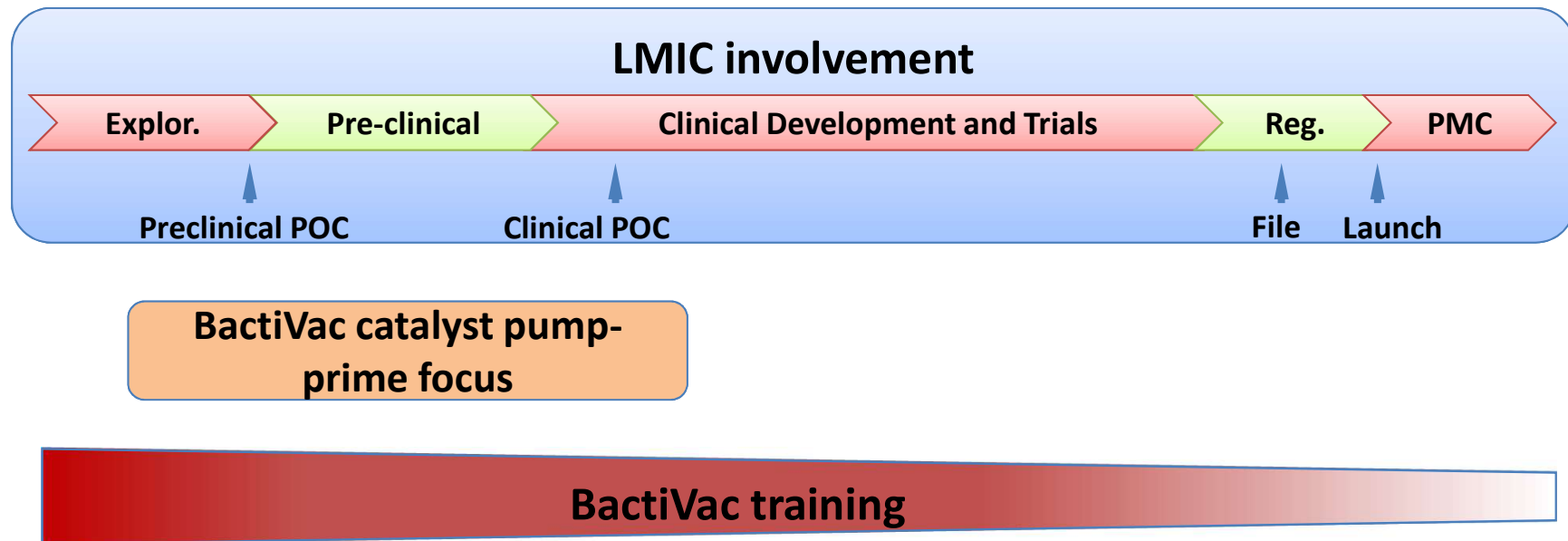
## ■ Training

- Up to **£6k available**,
- Training visit for up to 3 months' duration

**Partnerships (new) to generate preliminary data to go to funding bodies (proof of concept / collaboration)**



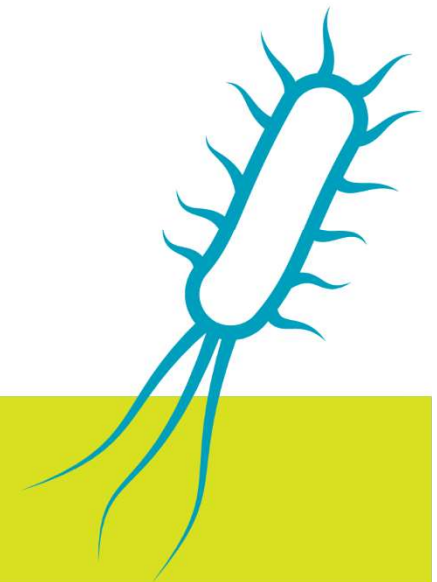
# Bacterial vaccine development pipeline and focus of funding opportunities



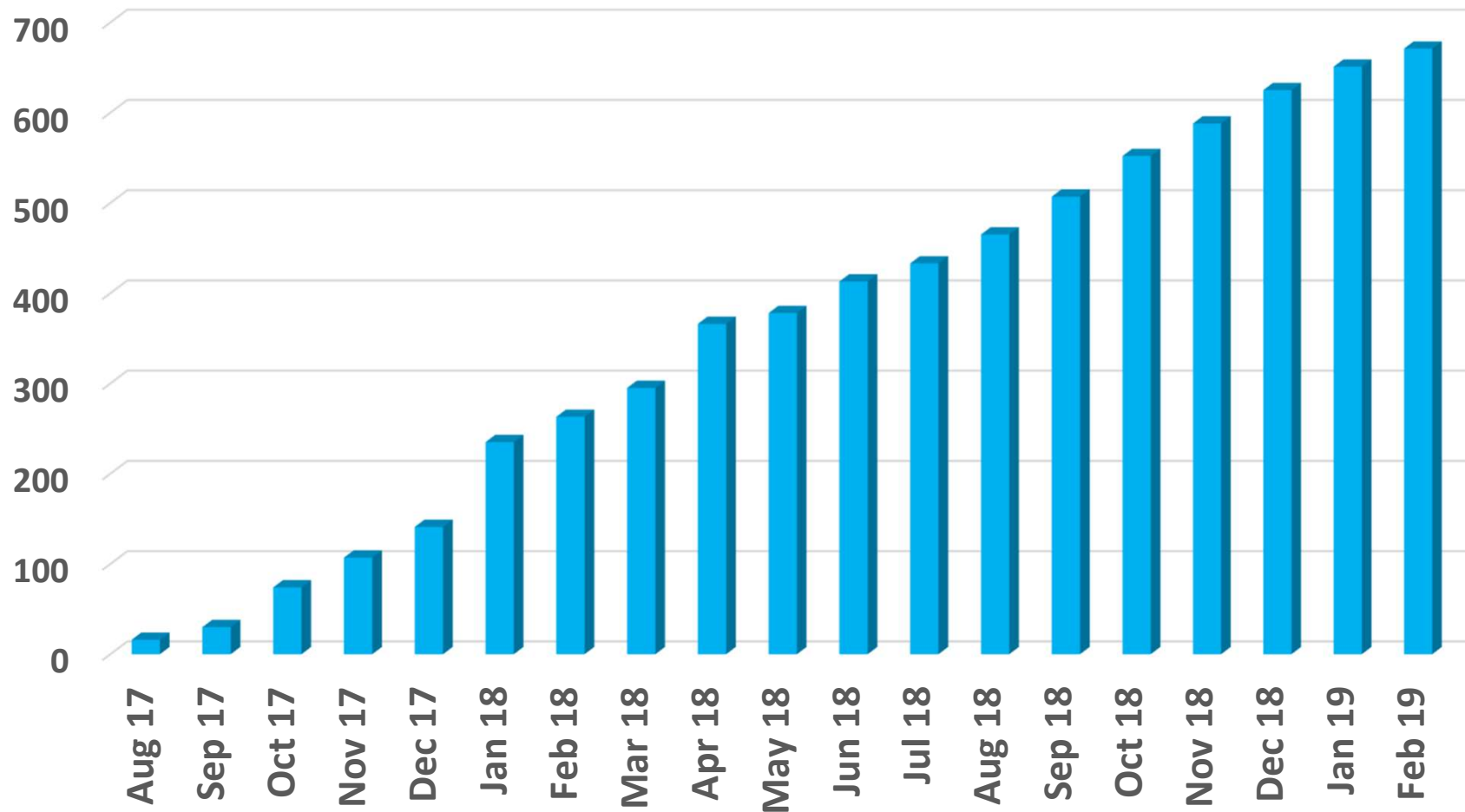
# BactiVac: our successes

UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network 



# Rapid and continuing growth (18/02/19)



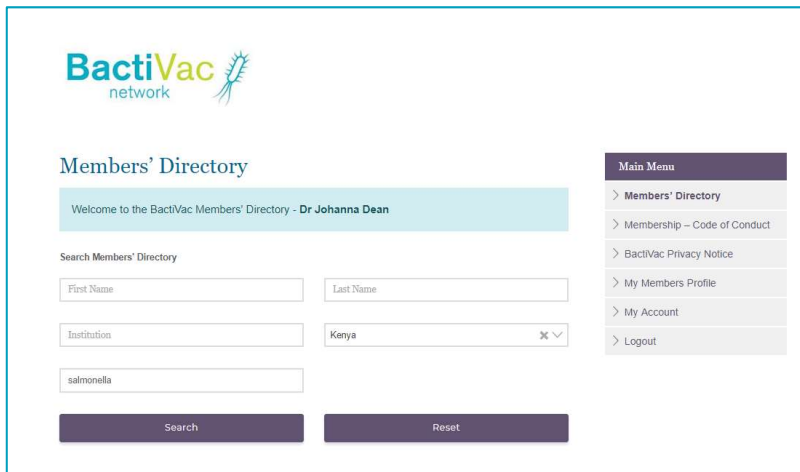
# Global reach and engagement

- **671** members in **63** different countries
- **39%** members based in **LMICs** and **11%** in **industry**

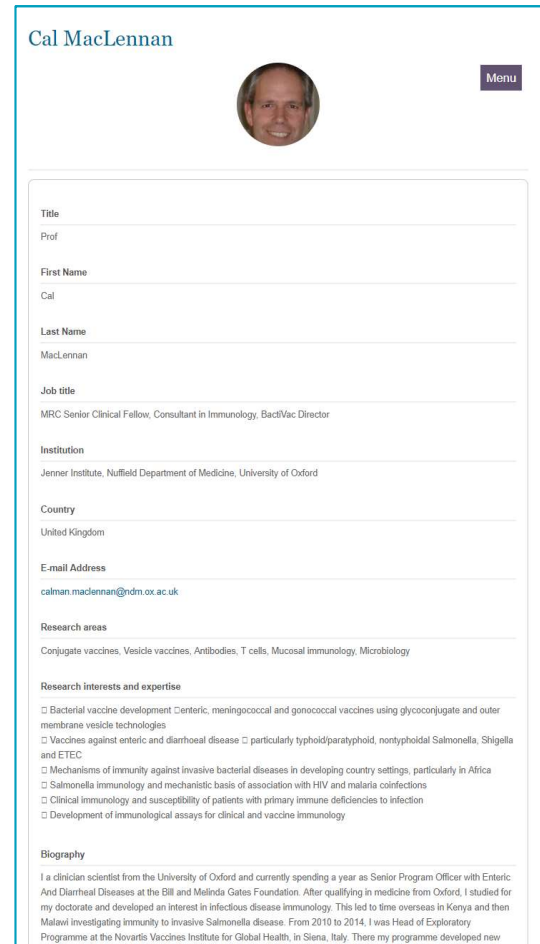


# BactiVac Members' Directory

- Contains members' profiles - Identify potential collaborators
- Network members can access full details (via login)
- Can search by:
  - Name
  - Institution
  - Country
  - Research expertise



The screenshot shows the BactiVac network logo at the top left. Below it, the text 'Members' Directory' is displayed. A welcome message reads 'Welcome to the BactiVac Members' Directory - Dr Johanna Dean'. A search section titled 'Search Members' Directory' contains four input fields: 'First Name', 'Last Name', 'Institution', and 'Country'. The 'Country' field has a dropdown menu showing 'Kenya'. Below these fields is a 'Search' button and a 'Reset' button. On the right side, there is a 'Main Menu' with links: 'Members' Directory', 'Membership - Code of Conduct', 'BactiVac Privacy Notice', 'My Members Profile', 'My Account', and 'Logout'.



The screenshot shows a member's profile for Cal MacLennan. At the top, the name 'Cal MacLennan' is displayed next to a circular profile picture and a 'Menu' button. Below this, the profile details are listed in a table-like format:

Title	Prof
First Name	Cal
Last Name	MacLennan
Job title	MRC Senior Clinical Fellow, Consultant in Immunology, BactiVac Director
Institution	Jenner Institute, Nuffield Department of Medicine, University of Oxford
Country	United Kingdom
E-mail Address	calman.maclennan@ndm.ox.ac.uk
Research areas	Conjugate vaccines, Vesicle vaccines, Antibodies, T cells, Mucosal immunology, Microbiology
Research interests and expertise	<ul style="list-style-type: none"><li>□ Bacterial vaccine development □ Enteric, meningococcal and gonococcal vaccines using glycoconjugate and outer membrane vesicle technologies</li><li>□ Vaccines against enteric and diarrhoeal disease □ particularly typhoid/paratyphoid, nontyphoidal Salmonella, Shigella and ETEC</li><li>□ Mechanisms of immunity against invasive bacterial diseases in developing country settings, particularly in Africa</li><li>□ Salmonella immunology and mechanistic basis of association with HIV and malaria coinfections</li><li>□ Clinical immunology and susceptibility of patients with primary immune deficiencies to infection</li><li>□ Development of immunological assays for clinical and vaccine immunology</li></ul>
Biography	I am a clinician scientist from the University of Oxford and currently spending a year as Senior Program Officer with Enteric And Diarrheal Diseases at the Bill and Melinda Gates Foundation. After qualifying in medicine from Oxford, I studied for my doctorate and developed an interest in infectious disease immunology. This led to time overseas in Kenya and then Malawi investigating immunity to invasive Salmonella disease. From 2010 to 2014, I was Head of Exploratory Programme at the Novartis Vaccines Institute for Global Health, in Siena, Italy. There my programme developed new

UNIVERSITY OF  
BIRMINGHAM



# BactiVac Inaugural Network meeting

- February 2018, Birmingham
- Speakers from academia, industry and agencies (**WHO, Gates, NIBSC**)
- **108 delegates** attended – oversubscribed with a waiting list
- **13 LMIC Travel Bursaries** awarded
- **All other networks represented**

**Annual Network Meeting 2019:**  
**20 & 21 March**, Birmingham

UNIVERSITY OF  
BIRMINGHAM



# Catalyst funding: training awards

- Training awards: **5/12** applications funded (totalling **£23,052**)
- 4/5 successful applicants **based in LMICs**
- 4 training awards **completed**





# Round 1 training awards

**Dr Ritu Amatya**

*Head of Microbiology Department  
Nepal Medical College and Teaching Hospital, Nepal*

**Attendance at [ADVAC Course](#)**



**Dr Birendra Prasad Gupta**

*Assistant Professor  
Tropical Disease Research Unit, Tribhuvan University,  
Nepal*

**Training visit to International Vaccine Institute,  
Seoul, South Korea**

*To expand knowledge of work on bacterial vaccine  
clinical trial protocol design to build on existing  
expertise.*



**Dr Achut Barakoti**

*Clinical Microbiologist  
Nepal Medical College and Teaching Hospital, Nepal*

**Attendance at [Vaccinology for Public Health &  
Clinical Practice in 21st Century](#)**

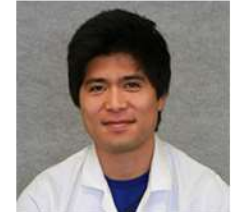


**Dr Kan Kaneko**

*Post-doc Researcher  
Liverpool John Moores University, UK*

**Training visit to Instituto Butantan, Brazil**

*To work on antigen production and preparation with a  
view to further collaborative research on novel vaccine  
formulations.*



**Dr Shizhong Geng**

*Associate Professor  
Yangzhou University, China*

**Training visit to University of Birmingham, UK**  
*Training in Molecular biology on bacterial vaccines.*





# Catalyst funding: pump-priming projects

## Round 1:

- **12/21** applications funded (**£601,414**)
  - 9 with **LMIC involvement** (4 LMIC led)
  - 5 with **industry involvement** (3 industry led)
  - 1 led by **WHO**
- Different types of funding leveraged/in-kind contributions:
  - **Uncosted PI supervision time** (not an allowable cost)
  - **~£42k** fEC 20% contribution by UK HEIs
  - **~£190k** in-kind contributions
  - **Access to** data, reagents, lab infrastructure, sample storage, expertise, mentorship, etc.

UNIVERSITY OF  
BIRMINGHAM



# Round 1 pump-priming projects

Dr Joseph Campo,  
Director of Operations  
Antigen Discovery, Inc  
(ADI) (USA)



Protein antibody markers of pneumococcal carriage in support of protein and whole cell vaccine trial design using panproteomic antibody screening.

[Read more](#)

Dr Roma Chilengi,  
Chief Scientific Officer  
Centre for Infectious  
Disease Research in  
Zambia (Zambia)



Measurement of Shigella-specific antibodies in the first two years of life in Zambian children to refine correlates of protection and determine the optimal window for vaccination

[Read more](#)

Dr Michael Jarvis  
Associate Professor  
The Vaccine Group (TVG)  
Ltd (UK)



Attenuated herpesvirus-based vaccines for low-cost antibiotic-independent control of bacterial disease in livestock - a proof of concept study

[Read more](#)

Professor Constantino Lopez-Macias  
Principle Investigator  
Mexican Social Security  
Institute (Mexico)



Improving the production of a multivalent experimental vaccine against the diseases induced by *Salmonella enterica*

[Read more](#)

Dr Sean Elias, Post-  
Doctoral Scientist  
University of Oxford  
(UK)



Measuring non-typhoidal Salmonella specific antibodies in oral fluid as a non-invasive alternative to serum

[Read more](#)

Professor Daniela Ferreira  
Reader in Respiratory  
Infection Immunity and  
Vaccines  
Liverpool School of  
Tropical Medicine (UK)



Identification of correlates of protection against pneumococcal colonization

[Read more](#)

Dr Pietro Mastroeni  
Reader Infection and  
Immunity  
University of Cambridge  
(UK)



Using General Modules for Membrane Antigens (GMMA) as multivalent Salmonella vaccines for Low-Middle Income Countries (LMIC) and travellers

[Read more](#)

Dr Esther Muthumbi  
PhD student, Research  
Medical Officer  
KEMRI-Wellcome (Kenya)



Using seroepidemiology of non-Typhoidal Salmonella (NTS) in Kenya to understand changes in risks of invasion and transmission and direct the clinical development programme for vaccines against NTS

[Read more](#)

Boris Gavrilov  
Director  
Biologics Development  
Facility Huvepharma  
EODD (Bulgaria)



Supporting the development of a DIVA compatible glycoconjugate vaccine for brucellosis

[Read more](#)

Dr Sami Gottlieb  
Medical Officer  
World Health  
Organisation  
(Switzerland)



Gonococcal Vaccine Preferred Product Characteristics and Public Health Value Proposition: Initial Global Stakeholder Consultation

[Read more](#)

Dr Christine Rollier  
Research Scientist  
University of Oxford (UK)



A novel bivalent vaccine to prevent both Salmonella Typhi and Paratyphi infections: preclinical proof of concept

[Read more](#)

Dr Michelo Simuyandi  
Research Fellow  
Centre for Infectious  
Disease Research in  
Zambia (Zambia)



Field evaluation and validation of a novel and rapid ETEC diagnostic assay in a resource limited setting

[Read more](#)

# Catalyst funding: pump-priming projects

## Round 2:

- **8/11** applications funded (**£477,572**)
  - 7 with **LMIC involvement** (1 LMIC led)
  - 3 with **industry involvement**
- 1/8 contracts signed so far
- All projects due to start by 1 March 2019

## Round 3:

- **NOW OPEN**
- Submission deadline **5 May 2019**
- Funding available from **1 October 2019**

UNIVERSITY OF  
BIRMINGHAM



UNIVERSITY OF  
BIRMINGHAM



## BactiVac Catalyst Funding

Catalyst funding for pump-priming projects is available to support academics in bacterial vaccinology to explore new approaches and strategies to advance their vaccines in partnership with LMICs and industry, and acquire the data to support substantive funding applications.

### Pump-priming projects

- Preference given to projects that:
  - ✓ Tackle the global of AMR challenge
  - ✓ Target the pre-clinical/clinical bottleneck
  - ✓ Generate novel partnerships between:
    - UK & LMICs
    - Diverse network members
- Typically £50k for up to 6 months

### How do I apply?

- Network membership is a prerequisite
- Further details available on our website
- Submission deadline **5 May 2019**
- All projects must start by **1 October 2019**

[www.birmingham.ac.uk/bactivac](http://www.birmingham.ac.uk/bactivac)

[BactiVac@contacts.bham.ac.uk](mailto:BactiVac@contacts.bham.ac.uk)

[@BactiVac](https://twitter.com/BactiVac)

+44 121 4146973



# Additional funding awarded to BactiVac

- **£600k** Industry Strategy Challenge Fund (ISCF) Feb 2018
- **£1M** Department of Health & Social Care (DHSC) Feb 2019



**Total BactiVac funding: £3.8M**

UNIVERSITY OF  
BIRMINGHAM





# Network advocacy

- Hosted a visit from **UK International Development Minister, Alistair Burt** 22/02/18
- BactiVac representation at **WHO Group A Streptococcus Expert Consultation Meeting**
- **POST Note** on vaccines and AMR
- BactiVac 'message' disseminated to **>1,500 individuals** at key stakeholder meetings (WHO, Bill & Melinda Gates Foundation, Wellcome Trust, NIBSC)
- **986 followers** on Twitter

UNIVERSITY OF  
BIRMINGHAM



 **Alistair Burt**   
@AlistairBurtUK 

Excellent visit to @unibirmingham today meeting researchers working on vital vaccines to address anti-microbial resistance  
[#AidWorks](#) @dfid\_uk @BactiVac



10:15 am - 22 Feb 2018

6 Retweets 14 Likes



**G Drury**  
@DrGeorginaD 

Fantastic panel discussion on how to take forward much needed group A Strep vaccines  
[@BactiVac](#) [@WHO](#) [#vaccine](#) [#savinglives](#) [#globalhealth](#)



3:47 am - 17 May 2018

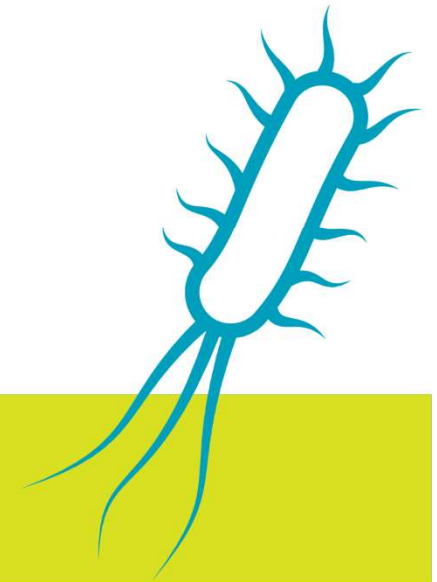
4 Retweets 8 Likes



# BactiVac: future

UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network 



# Opportunities

- BactiVac is a conduit to disseminate funding – **Flexibility**
- We are responsive and creative e.g. ISCF, DHSC
- We promote networking – our network networks!!
- Collaboration with other MRC/BBSRC/GCRF networks
- Developing partnerships with key stakeholders and policy agencies
- Advocacy brings additional benefits and opportunities
- Need to consider growing long-term future now

# How will we continue...

- Grow our membership - targeted recruitment:
  - Pathogen gap analysis – via PubMed etc
  - Industry – via Department for International Trade (DIT), DCVMN
  - Under-represented LMICs – via UK Sciences and Innovation Network
- Annual Network Meetings
- Award catalyst project funding:
  - **Round 1:** monitoring progress, reporting
  - **Round 2:** contracts awarded, details posted on BactiVac website
  - **Round 3: OPEN**, closing 5 May, funding available 1 October 2019
- Network advocacy, stakeholder engagement
- **Our ambition: to continue building critical mass & influence**



# Opportunities available through BactiVac

- **Join the Network – free membership!**
- **Annual Network Meetings:**
  - **2019:** 20 & 21 March, Birmingham, UK
  - **2020:** TBC, LMIC setting
  - Travel Bursaries
  - Grant Writing Workshops
- **Catalyst project funding:**
  - **Round 3: OPEN**, closes 5 May, 1 October 2019 start
  - **Round 4:** TBC, Autumn 2019
- **Catalyst training awards:** open call from March 2019



UNIVERSITY OF  
BIRMINGHAM



# Work with us.....



[www.birmingham.ac.uk/bactivac](http://www.birmingham.ac.uk/bactivac)



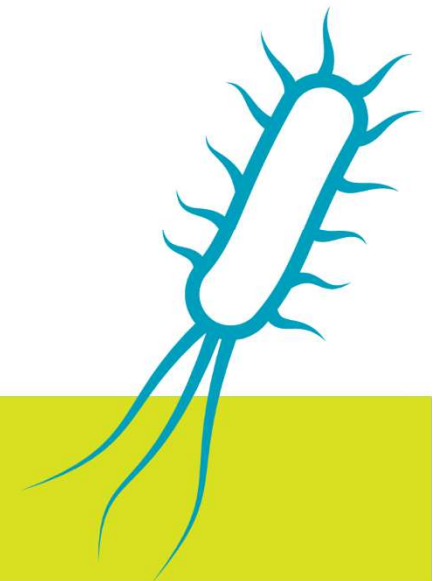
[BactiVac@contacts.bham.ac.uk](mailto:BactiVac@contacts.bham.ac.uk)



[@BactiVac](https://twitter.com/BactiVac)



+44 121 4146973



UNIVERSITY OF  
BIRMINGHAM

**BactiVac**  
network