LONGITUDE PRIZE

Venture Center
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Daniel Berman
Longitude Prize
daniel.berman@nesta.org.uk
www.longitudeprize.org

> *Today, antibiotics are rarely prescribed based on a definitive diagnosis. Diagnostic tests can show whether or not an antibiotic is actually needed, and which one. Having rapid, low-cost, and readily available diagnostics is an essential part of the solution to this urgent problem.*
>
> Dr Margaret Chan, Director General of the World Health Organization

AMR Review, chaired by Jim O'Neill - May 2016
Tackling Drug-Resistant Infections Globally: final report and recommendations

Growing Resistance: individual & societal consequences

Risk of returning to pre-antibiotic age…

CASE: Post caesarean section 25-year-old woman developed sepsis that does not respond to antibiotics: died within one week of giving birth

CASE: 45-year-old oncology patient responding well to treatment, acquires infection that is resistant to key antibiotics.

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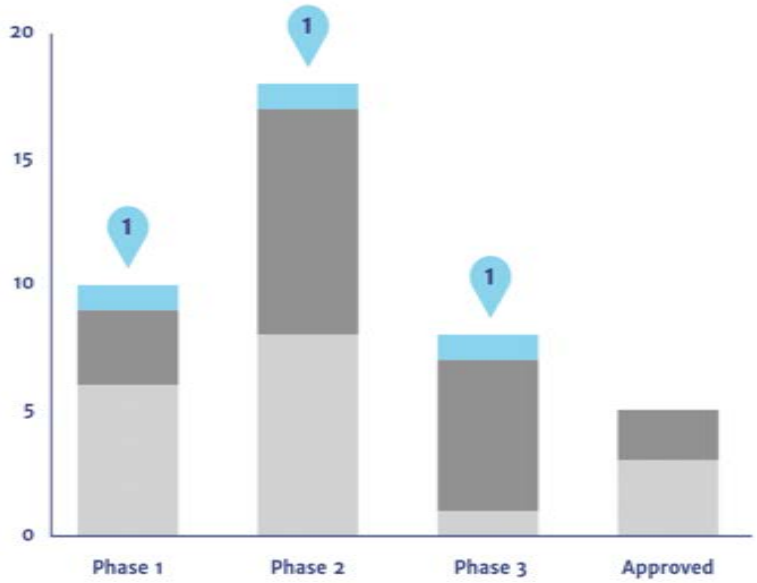
ANTIBIOTICS IN THE PIPELINE OR RECENTLY LICENSED



High priority

Potential for activity against at least 90% of carbapenemase-producing bacteria in the UK

Medium priority

Targets at least one CDC 'Urgent' threat (Clostridium difficile, carbapenem-resistant Enterobacteriaceae or drug-resistant Neisseria gonorrhoea, but is not classed as a potential break through)

Low priority

Does not meet the criteria for "clinically useful"

Review on Antimicrobial Resistance

What is the Longitude Prize?

A **£10 million prize fund** that will reward a transformative, rapid, accurate, and affordable **point-of-care** diagnostic test that can significantly reduce antibiotic misuse or overuse, anywhere in the world.

Why a diagnostic?

- It's a defined challenge with a tangible output - ideal for a challenge prize.
- More targeted use of antibiotics means more effective stewardship of antibiotics.
- Better stewardship means that the antibiotics we have now, and any new drugs that are developed, will be effective for longer.

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LONGITUDE PRIZE

THE JOURNEY FROM IDEA TO AWARD

£8million WINNER DECLARED!

£8million awarded to winner
to help bring product to market

PRIZE ADVISORY PANEL
Assess applications
after every deadline

LONGITUDE COMMITTEE
Ratify decision

PRIZE ADVISORY PANEL
Recommend winner

LONGITUDE COMMITTEE
Make final decision

ASSESSMENT
Including clinical
trials

UNSUCCESSFUL
Use our feedback
to reapply

REGISTER YOUR INTEREST
Develop your idea

SUPPORT

APPLY TO WIN PRIZE
Submit technical details, business plan and prototype design
Deadlines: 31st January, 31st May and 30th September
Ongoing until 2019

The winning test could...

Discriminate between bacterial or viral pathogens

OR

Identify which species or strain is causing an infection

AND, OR

Detect antibiotic sensitivity of the infecting pathogen

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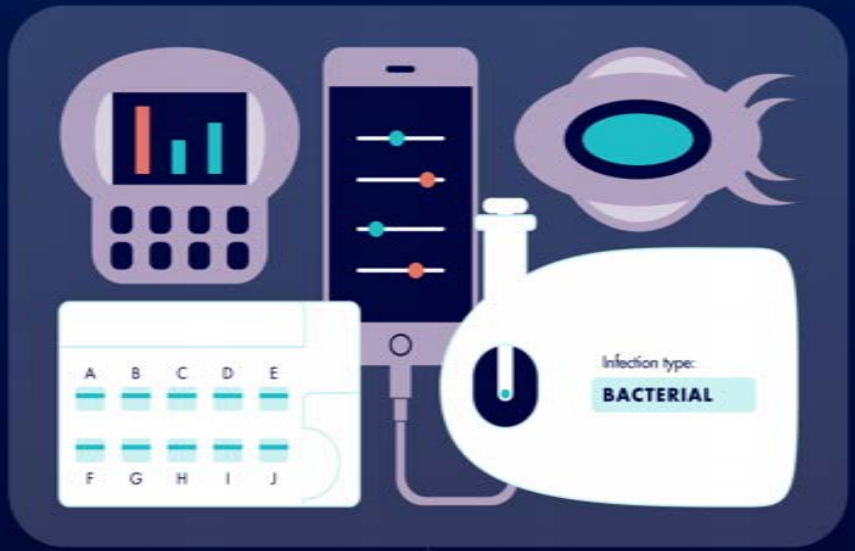
WHAT KIND OF TEST COULD WIN THE LONGITUDE PRIZE?



THE WINNING TEST MUST BE...

NEEDED
Improve the antibiotic treatment decision of a globally occurring problem

ACCURATE
Eliminate harmful treatment decisions and give confidence to the user

AFFORDABLE
Affordable for purchase and use everywhere that it is needed

RAPID
Sample collection to result in less than 30 minutes

EASY TO USE
Can be used and interpreted anywhere in the world with minimal training

CONNECTED
Tests with built-in data-recording and transmission will be favoured

SAFE
The benefits far outweigh any risks

SCALABLE
A plan for full-scale manufacture and distribution

ENVIRONMENTAL STABILITY

EASILY CARRIED

NO COLD CHAIN

NO MAINS POWER

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ROUTES TO ANTIBIOTICS

Does the winning test need to measure susceptibility / resistance to major antibiotics?

Technologies being used?

- DNA sequencing
- Nanotechnology
  - Glyconanoparticles that discriminate between bacterial and viral proteins and toxins
  - Nanosensors that count nucleic acids
- Characterising phenotypic traits using real-time imaging and microfluidics
- Synthetic polymers that act as binding sensors for bacterial pathogens
- Detection of bacteria using laser-based scattered light
- Separation of bacterial and viral pathogens based on their electrophoretic properties

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Update June 2017

239 teams registered, from 41 countries
22 full entries to win

12 Discovery Award seed funding grants (£10-25,000) awarded in 2016

Winners of the second round of Discovery Awards will be announced in July (Merck Funder)

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DISCOVERY AWARDS

A new round of Discovery Awards seed funding for Indian teams

- Seed grants of £10-25,000, funded by BIRAC
- Help registered teams and individuals further develop their ideas for the Longitude Prize
- Encourage new teams to enter the race
- Closing deadline Friday 1st September, midnight IST

birac
Ignite Innovate Incubate

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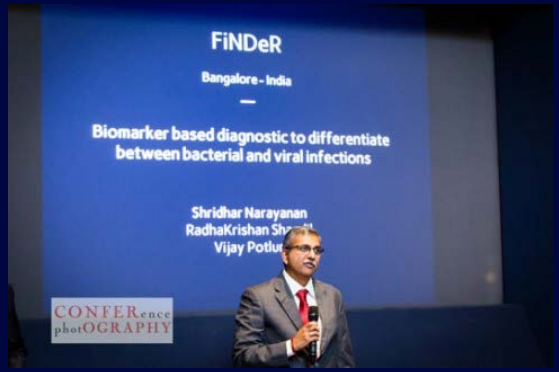
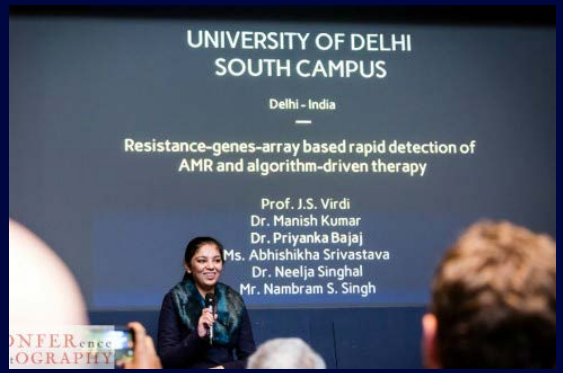
November 2016 Discovery Awards: India

Team: FindeR
From: Bangalore
Idea: Biomarker-based diagnostic to differentiate between bacterial and viral infections for community and intensive care settings



Team: University of Delhi South Campus
From: Delhi
Idea: Resistance-genes-array based rapid detection of AMR and algorithm-driven therapy

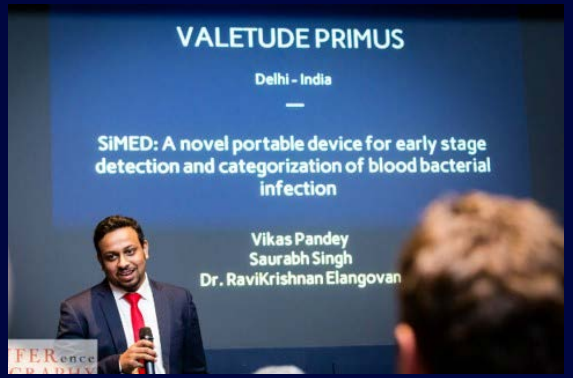


More here: bit.ly/IndiaWinners

Team: OmiX Labs
From: Bangalore
Idea: AMR signature assays for predicting susceptibility to existing and repurposed drugs

Team: Vitas Pharma
From: Hyderabad
Idea: A rapid molecular assay to test for bacterial pathogens in patient samples

Team: Valetude Primus
From: Delhi
Idea: A novel portable device for early stage detection of blood bacterial infection



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ARE YOU READY TO APPLY TO WIN?

FEASIBILITY / DESIGN

- [x] Initial lab tests
- [x] Reagent definitions

OPTIMISATION

- [x] Refining reagent
- [x] Standardisation
- [x] Analytical sensitivity and specifity
- [x] Working prototype x3

- [x] Registration on: longitudeprize.org/enter

EARLIEST STAGE TO APPLY

PRE-VALIDATION / PILOT EVALUATION

- [x] Validation
- [x] Repeatability
- [x] Reproducibilty
- [x] Diagnostic sensitivity and specifity
- [x] Diagnostic thresholds
- [x] User acceptability test
- [x] Trial-ready prototype x3

RECOMMENDED STAGE TO APPLY

IF YOUR APPLICATION PROGRESSES:

PERFORMANCE EVALUATION

With support from the Longitude Prize

- [x] Feasibility testing
- [x] Stability testing

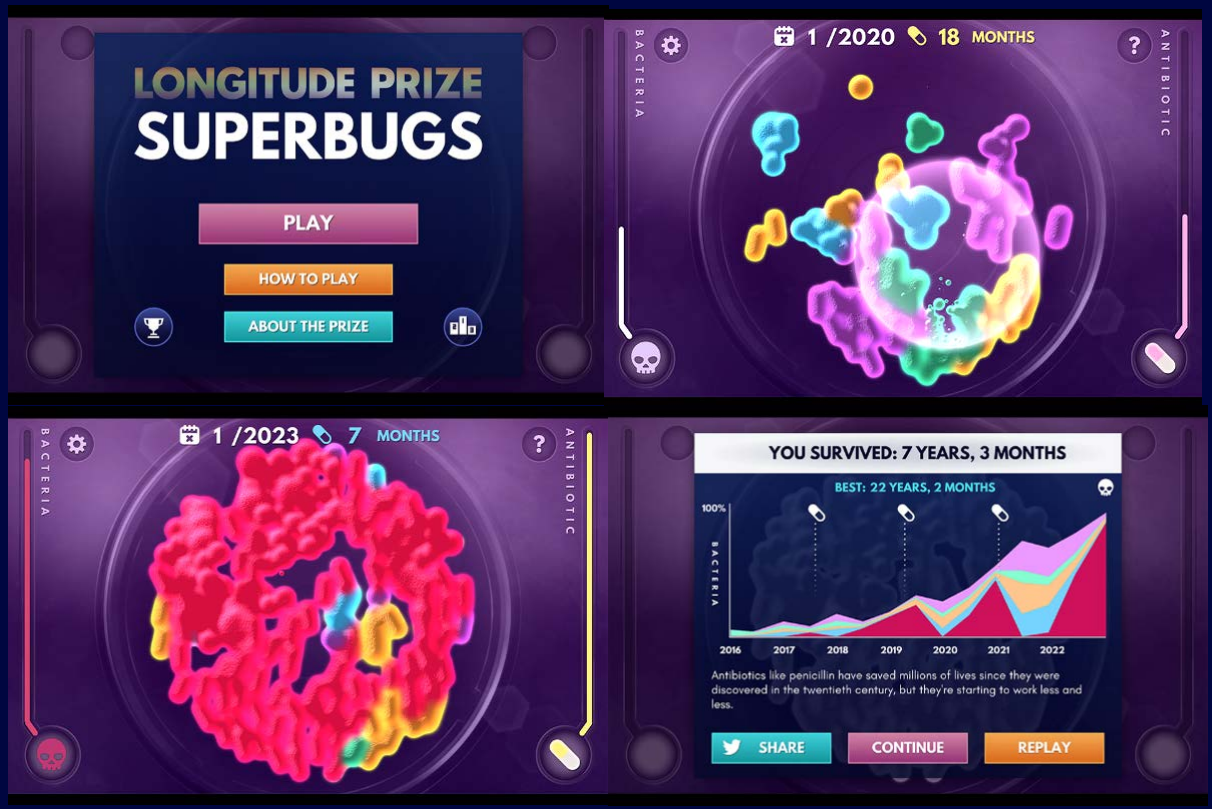
YOU COULD NOW WIN THE PRIZE

To get your test to market, you will need regulatory approval

CE MARKING

- [x] Design
- [x] Feasibility
- [x] Optimisation

Behaviour change: Superbugs



Contact

Daniel Berman, Prize Lead
daniel.berman@nesta.org.uk

www.longitudeprize.org
@longitude_prize
www.facebook.com/longitudeprize