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# Massey University - Global Food Security

Presentation to Global Alliance on Food Security Research

7 June 2013

Steve Maharey  
Vice-Chancellor and President  
Massey University

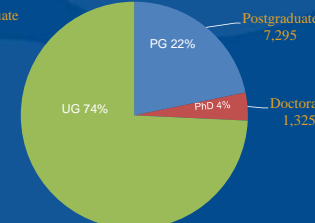

  
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## Key Facts


- 33,491 Total Students (19,704 EFTS)
  - 6,369 Albany Campus
  - 8,148 Manawatu Campus
  - 3,347 Wellington Campus
  - 15,627 Extramural
- 57% 25 years and over
- 3,806 international (11%)

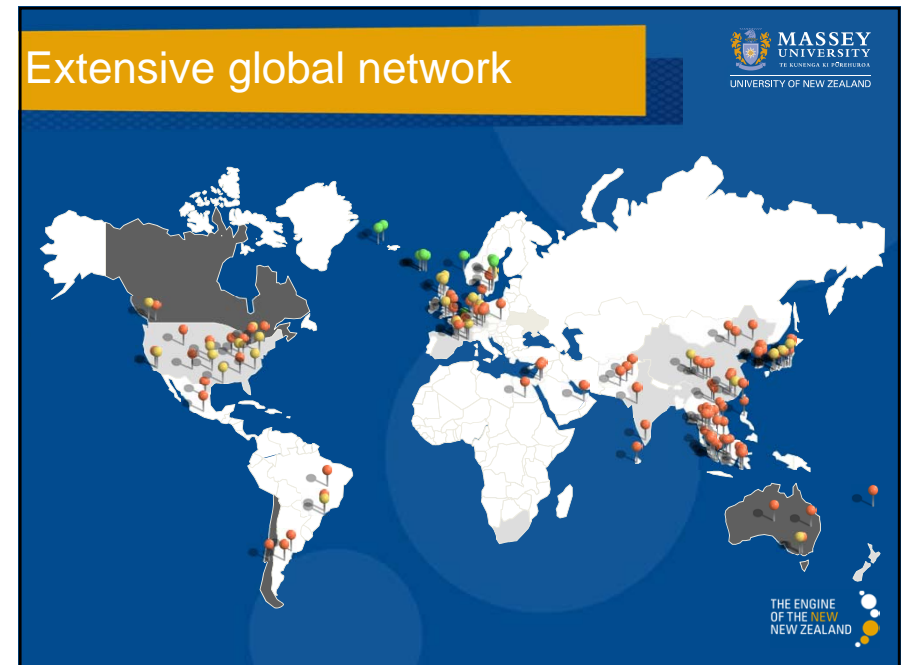
Totals student enrolments



Level	Percentage	Count
Undergraduate	74%	24,871
Postgraduate	22%	7,295
PhD	4%	1,325
Doctorate	-	1,325

All figures based on December 2012


  
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## Food Security



- The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”.
- Links to health, sustainable economic development, environment, and trade.
- Food security is a complex, multi-dimensional sustainable development issue.

World Health Organisation, 2013



## Multi-dimensional Challenge





## Emerging Diseases



- Need to develop regional capability to prepare for and respond to diseases which threaten global health and cause economic disruption
  - e.g. SARS, H5N1 influenza, H7N9 influenza
- Massey University - global reputation in this field
- We have world-leading expertise in delivering distance education and on-site skill development
- World Bank called on Massey to provide biosecurity capability development in Asia



## Regional Training



Regional training program in animal and human health epidemiology

- Two-phase project in South Asia, 2010-2013
- Funded by the European Commission
- Administered by the World Bank through a grant to Massey University
- Implemented in seven countries in South Asia
- Now extended to China and Mongolia
- Potential to apply more widely



## Programme




- Phase 1: Master's degree joint training 68 human and animal health professionals across South Asia to build cross-sectoral collaboration
  - Predominantly web-based learning plus short face-to-face blocks in a blended-learning program
- Phase 2: Applied training 200 participants through in-country disease investigations involving
  - Collaboration between human + animal health sectors
  - International support + further advanced training supported by web-based platform, 'Hubnet'



**Hubnet** Login | Register | Help

Home About Hubnet Program One Health Network One Health Hubs Projects Contacts Links



**Welcome to Hubnet**  
Connecting professionals committed to One Health in South Asia

Login to Hubnet  
[Collaborate](#) Login and Collaborate

Register on Hubnet  
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Contact Hubnet  
[Contact](#) Contact the One Health Project Office

**Massey's One Health Masters graduates December, 2011**  
Fifty nine doctors and veterinarians from Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka graduated from Massey University in October-November 2011 with a Masters degree in the first phase of the Regional Training Program in Human and Animal Health.

**SAR One Health Network**  
The SAR Network links the One Health Hubs and facilitates the development and sharing

**Afghanistan One Health Hub**  
The One Health Hub of Afghanistan links professionals and organisations, including

**Bangladesh One Health Hub**  
The One Health Hub of The People's Republic of Bangladesh includes professionals and

**Bhutan One Health Hub**  
The One Health Hub of the Royal Government of Bhutan is a working group involving professionals,

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# Stream online learning environment

stream

My home ▶ My courses ▶ 195743\_1312\_EAP\_B1 ▶ 6.1.0 The Three Pillars of Infectious Disease Control [\[All page contents\]](#)

You are signed in as Lachlan McIntyre (at Massey) Logout

**6.1.0 The Three Pillars of Infectious Disease Control**  
[Preview](#) [Edit](#) [Reports](#) [Grade essays](#)

**6.1.1 Introduction**

While response depends greatly on preparing fully during 'peaktime', there are some basic principles of disease control that shape the organization of the response plan.

Controlling an infectious disease, such as HIV or H1N1, does not require anything technically innovative or particularly difficult in principle. But it is difficult to achieve because it requires the effective application of logistics and no one action alone will do the job. There must be a series of measures that are operating at the same time, each to a high level of efficiency and fully integrated with each other. This requires keeping clear objectives in mind and the efficient application of resources. For the whole process not to become overwhelming, there needs to be a relatively straightforward way of thinking about, and assessing the progress of, disease control. This can be done by keeping simple, easily understood principle objectives, or pillars, in mind.

All three are important. They are:

- Find infection fast, and
- Eliminate infection quickly, and
- Stop infection spreading.

All three are important. They are like the legs of a tripod: if one leg is not functioning, the whole effort will collapse.


Those charged with managing disease control should bear these three objectives in mind. Everything they do or direct should be aimed towards one of these. Their management information systems, however basic, should be aimed at defining how well each objective is being met. They should constantly be asking for information that answers the questions:

- How fast are we finding it?
- How quickly are we eliminating it?
- How effectively are we stopping the spread?

In turn, each of the three pillars is made up of, or supported by, different activities, some of which contribute to more than one.

QUESTION

Surveillance





## Global Food Safety Partnership




An innovative open source platform, for building capacity and sharing best practice to everyone across the global food system



## Why a Global Food Safety Partnership?



Food production shifts from developed countries to emerging markets and to developing countries

- Consumers everywhere demand safer food
- Producers in the developing world demand access to markets

Food safety is a global issue

- With more demand, food comes from many new places
- New pathogens and new food related disease outbreaks

Regulatory environments in major markets change

- Governments change the way they deal with food safety
- US Food Safety Modernization Act
- European Food Safety Agency
- Russia's entry to WTO
- China's increasing food exports, imports and domestic food safety issues



## Massey University's Role



- Contracted by the World Bank Group to support the GFSP launched in Dec 2012.
- Facilitator for the establishment, operation and management of three of five GFSP working groups.
  - Information Technology Working Group
  - Food Safety Technical Working Group
  - Monitoring and Evaluation Working Group



## Massey University Infectious Disease Research Centre



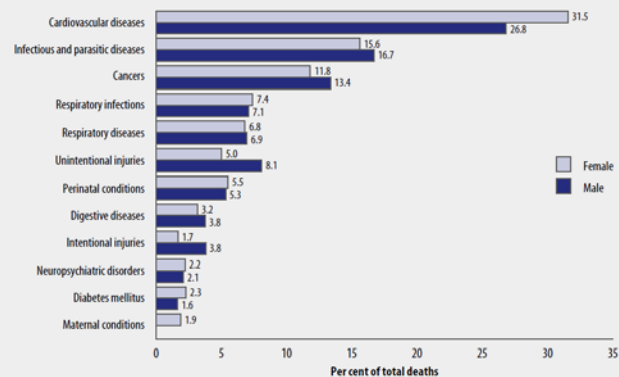
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## Global burden of disease



Figure 4: Distribution of deaths by leading cause groups, males and females, world, 2004



Approx 58 million deaths in 2008

30% due to communicable disease

1.8M deaths per year food borne disease

From WHO Global Burden of Disease report 2004 update 2008



## IDReC



- An interdisciplinary research centre at Massey University.
- IDReC brings together 6 research groups each with knowledge and expertise in different aspects of infectious disease research.



## Research Focus



- Applied research into multi-host pathogens
- Fundamental research into pathogen evolution and disease emergence
- Focus on human–animal–ecosystem interfaces
- Enhance knowledge transfer via a direct pathway between researchers and policy makers
- Postgraduate training
  - Currently training 22 PhD researchers



## One Health Approach



- No single discipline can meet the challenges faced by human, animal, plant and ecosystem health
- Multidisciplinary teams needed to tackle current and emerging disease problems
- IDReC works in collaboration with CRIs and other Universities – multidisciplinary approach.



## Leading Scientists



**Professor Nigel French**  
IDReC Director  
EpiLab – Palmerston North  
Molecular epidemiology and veterinary public health



**Professor Paul Rainey**  
Rainey Lab, Auckland  
Max Planck Institute, Germany  
Evolutionary genetics



**Professor Martin Hazelton**  
Statistics and Bioinformatics Group – Palmerston North  
Statistics and spatial modelling



**Professor Tim Carpenter**  
Epicentre – Palmerston North  
Veterinary epidemiology and economics



**Professor Mick Roberts**  
Institute of Information & Mathematical Sciences - Auckland  
Mathematical biology and infectious disease modelling



**Professor Jeroen Douwes**  
Centre for Public Health Research - Wellington  
Public health and epidemiology




## Science Advisory Group




**Professor Christopher Dye**  
WHO, Geneva



**Professor Ian Gardener**  
University Prince Edward Island



**Professor Bruce Levin**  
Emory University



**Professor Philip O'Neil**  
University of Nottingham



## Collaboration



International:  
University of Oxford, Max Planck Institute,  
Stanford University, Lancaster University.....



## Conclusion



- Massey University has extensive food security capability and experience
- Expertise has been developed into a collaborative learning & operational framework to build capacity in global food security
- Opportunities to work with GAFSR partners

