

**NSC-CoRE**  
**Infrastructure Workshop**

**17<sup>th</sup> Oct, 2014**

**Peter Hunter**

**Main participants  
in the  
NZ Science System**

# 8 NZ Universities



# 7 Crown Research Institutes (CRIs)



**AgResearch**



**Institute of Environmental Science Research**



**Institute of Geological and Nuclear Science**



**Landcare Research**



**National Institute of Water  
and Atmospheric Research**



**Plant and Food Research**



**Scion (Forestry)**

# Callaghan Innovation

- **NZ Government agency established on 1<sup>st</sup> Feb 2013**
- **Manage \$141M /yr government funding and grants**
- **Role is to accelerate commercialisation of innovation by firms in NZ**

# 10 Centres of Research Excellence (CoREs)



**MacDiarmid Instit. for Advanced Materials & Nanotechnology**

**Maurice Wilkins Centre for Molecular Biodiscovery**

**Brain Research NZ**

**The Dodd-Walls Centre for Photonic and Quantum Technologies**

**Centre for Complex Systems and Networks**

**Medical Technologies**



**Ngā Pae o te Māramatanga**



**Bio-Protection Research Centre**



**Gravidia: National Centre for Growth and Development**



**Riddet Institute for Nutrition and Innovative Foods**

# 10 National Science Challenges

1. High Value Nutrition
2. The Deep South
3. Life in a Changing Ocean
4. Our Land and Water
5. Resilience to Nature's Challenges
6. New Zealand's Biological Heritage
7. Aging Well
8. A Better Start
9. Healthier Lives
10. Science for Technological Innovation

# Major funding agencies

- 1. Marsden Fund** – Blue skies
- 2. HRC** – Health research
- 3. TEC** – CoREs, (PBRF)
- 4. MBIE** – NSCs, (CRI core funds)
- 5. MBIE** – Commercial focus
- 6. Callaghan Innovation** – Business only
- 7. Philanthropic** – Focussed (e.g. NEXT)

# Major infrastructure

- 1. REANNZ** – Karen network
- 2. NeSI** – HPC & data storage
- 3. NZGL** – Genomics
- 4. Callaghan Innovation** – Technology networks
- 5. Internat.<sup>al</sup> arrangements** – Synchrotron, SKA,..



# Review of the NZ Research System

## Panel

1. Marston Conder (Maths)
2. Harlene Hayne (Psychology)
3. Shaun Hendy (Physics)
4. Peter Hunter (Bioengineering)
5. Warren McNabb (Ag Research)
6. William Rolleston (Fed Farmers, Science investment)
7. Linda Smith (Maori)
8. Warren Tate (Biochemistry)
9. Margaret Tennant (Social science)
10. Christine Winterbourn (Biomedical science)

# Terms of Reference

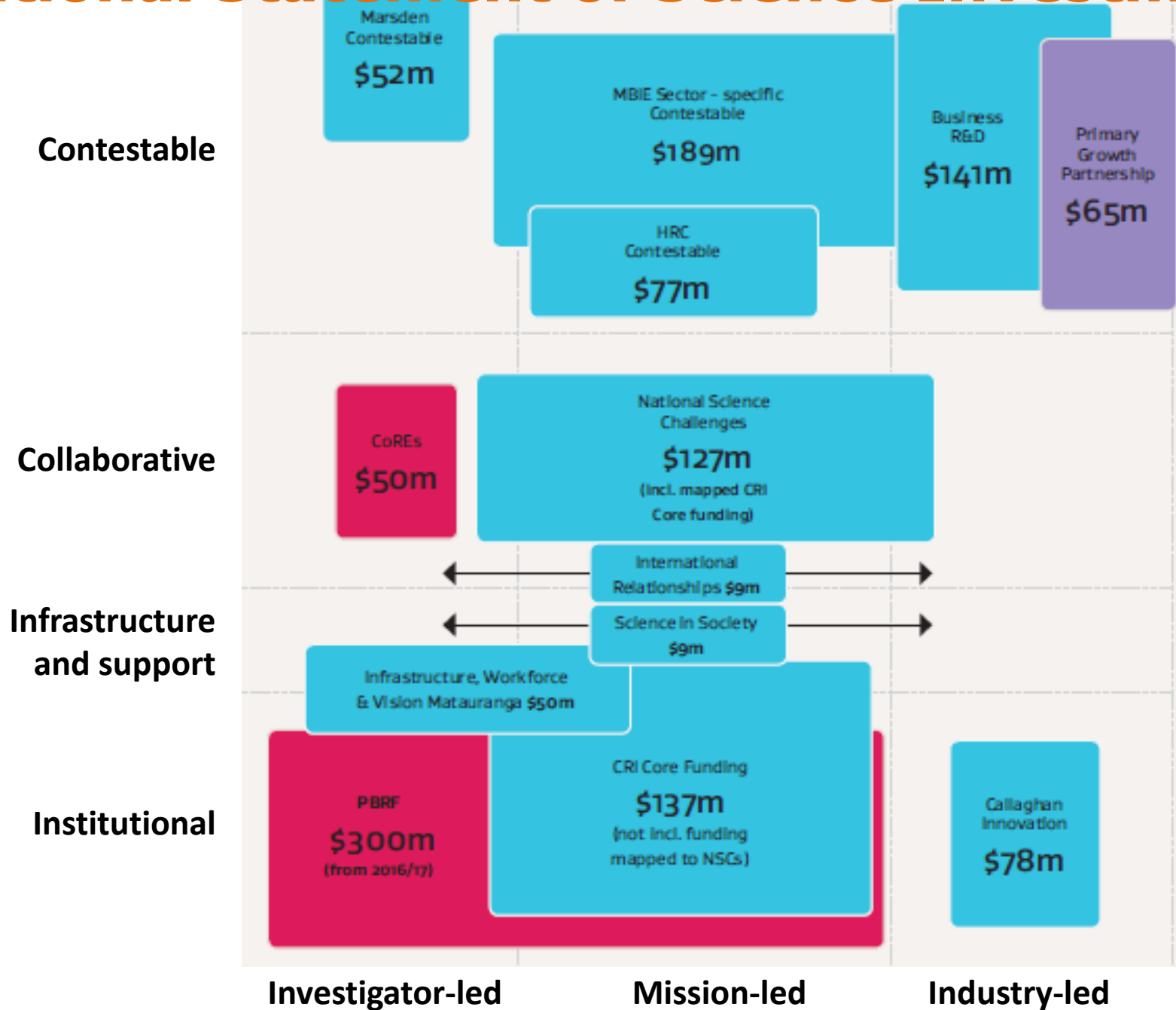
## The panel will review:

- Architecture of NZ science system, including role and operation of funding agencies (Marsden, HRC, MBIE, CoREs, NSCs, etc).
- Role of Universities, CRIs, Callaghan Innovation, etc.
- Science infrastructure.
- Indirect (overhead) costs.
- Career development including doctoral training, postdoc, RA and research scientist positions.
- International cooperation agreements and existing international research collaborations.
- Compare NZ system with international best practice.

## Questions to be considered include:

- What is the value of NZ research activities for NZ? (Outcomes in social/cultural, health, environmental & economic areas).
- What needs to be done to reverse the decline of NZ Universities in the World University rankings?
- Is the architecture and funding balance across the funding agencies appropriate?
- What should be the funding balance between science and humanities?
- How could University-CRI links be improved?
- How could University-clinical links be improved?
- How could University-industry links be improved?
- Should we (& how do we) encourage more Govt funding for R,S&T? – & what is the justification?
- Do we need better incentives for collaboration?
- How do we achieve more international cooperation and collaboration? (espec Australia)

# National Statement of Science Investment



# Data challenge issues

- 1. Data storage & HPC access**
- 2. Data curation. Encoding standards.**
- 3. Data annotation – metadata. Webservices.**
- 4. Data analytics. Data visualisation.**
- 5. Private v public data**