





# New Horizons in Particle Cosmology

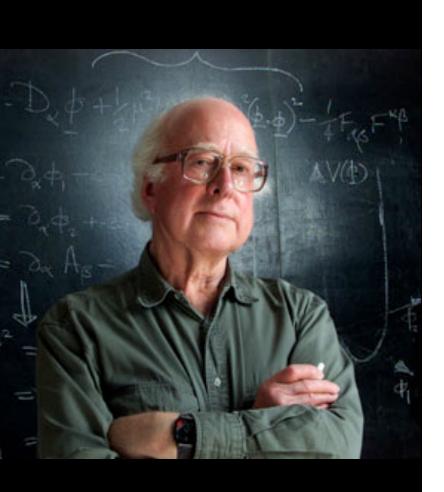
Institute for Astronomy, Royal Observatory, Edinburgh, Scotland/UK

Monday 30th June - Wednesday 2nd July 2014

# The Higgs Centre for Theoretical Physics



- Established 2012.
- Promote Theoretical Physics at Edinburgh & within UK.
- Regular Workshop/Meeting (16).
- Higgs Colloquia (44).
- Visitor Programme (133).
- MSc Programme.
- Management Board & International Advisory Committee.



20TH CENTURY

HER C VOLUME III FAQ; http://heroesofscience.colonpipe.com

### of SCHENCE ACTION FIGURES

#### **PETER HIGGS**

Born: 1929

Theoretical physicist

Known for: Broken symmetry in electroweak theory, Higgs boson, Higgs field, Higgs mechanism

"The way that the background fields generates mass is rather like the way in which when light passes through a transparent medium like glass or water, it gets slowed down. It no longer travels with the fundamental velocity of light, c. And that's the way to think of the generation of mass."

- Peter Higgs

Created by Russell Gawthorpe

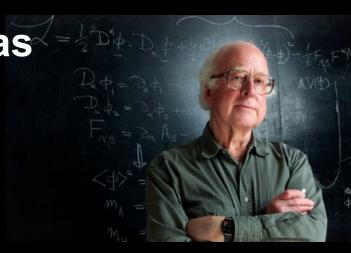
Please take the time to look these awesome people up, learn about them and their achievements, and encourage others to do the same.

Figures based on Star Trek: The Next Generation and Star Trek: Deep Space Nine action figures by Playmates. The names and images of the people in this graphic poerty (and in many cases trademarks) of the individuals or the estates that represent them. The original action figures were designed by Playmates Toys. This image was not endorsed by any of the individuals or estates of individuals depicted, nor Playmates Toys. This image is intended strictly for educational and entertainment purposes.

### Three Higgs Centres



- Higgs Centre for Theoretical Physics
  - Supporting Theoretical Physics.
- The Higgs Centre for Innovation
  - Technological development.
- The Higgs Centre for Ideas
  - Big Data Centre.



#### The Higgs Centre for Theoretical Physics



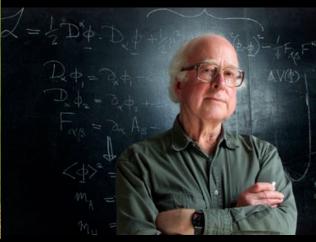
Proposed dedicated building at The Kings Buildings.

## The Higgs Centres for Innovation



 University of Edinburgh and STFC's UK Astronomy Technology Centre (ATC) for technological development based at ROE

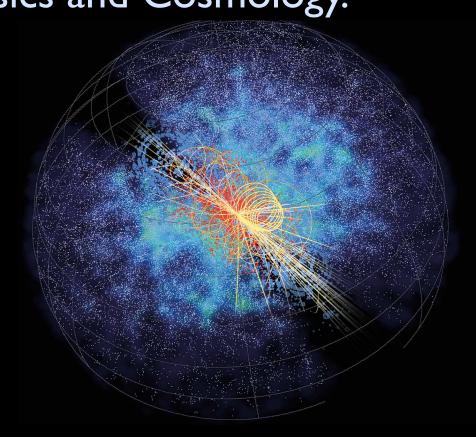




### Aims of Symposium

 Strengthen connections between Fundamental Physics and Cosmology.

- Inflation
- Dark Energy
- Dark Matter
- Gravity





- Tuesday 19.30: Conference Dinner at Dynamic Earth.
- Sign-up sheet for Taxis at Registration.

•Wifi details in pack.

• Sign-up sheet for Crawford Collection visit.

## Health & Safety

• If Fire Alarm sounds walk out front to grass.



Time	Monday 30th June	Tuesday 1st July	Wednesday 2nd July
0900-0945	Coffee & Registration		
0945-1000	Welcome	Coffee	Coffee
1000-1100	Cosmological inflation: from observations to fundamental physics Hiranya Peiris	Searches for Dark Matter at Collider and Direct Detection Experiments Oliver Buchmueller	Modified Gravity Bhuvnesh Jain
1100-1130	Coffee	Coffee	Coffee
1130-1200	Generating f <sub>NL</sub> at large $\ell$ David Lyth	A CoGeNT Analysis: Evidence for a Dark Matter signal? Jonathan Davis	Linearly shielded modified gravity models Lucas Lombriser
1200-1230	Super-Planckian versus Sub-Planckian Models of Inflation Anupam Mazumdar	Astronomical Particle Colliders David Harvey	The non-linear relativistic universe: cosmology beyond Newtonian gravity Daniel Thomas
1230-1300	A UV completion for higher derivative inflation Ippocratis Saltas	Crawford Collection Visit	The Zeldovich Approximation Martin White
1300-1400	Lunch	Lunch	Lunch
1400-1500	Inflation David Seery  Relativistic effects in galaxy clusters constrain scalar fields Hongsheng Zhao	Indirect Dark Matter Searches Marco Cirelli	Testing Modified Gravity with the LenS surveys Catherine Heymans
1500-1530	Material Models of Dark Energy Jonathan Pearson	Conformal Theory: New Light on Dark Matter and Dark Energy Robert Nesbet	Panel Discussion
1530-1600	Coffee	Coffee	Coffee
1600-1630	Raytracing simulations of coupled dark energy models Francesco Pace	Effective Field Theory Descriptions of Dark Matter	Summary Talk
1630-1700	Alex Mead	Rocky Kolb	End of Meeting
1700-1800	Rooftop Reception		
19.30		Conference Dinner at Dynamic Earth	