

# Professor Mark Thomson

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## OVERVIEW

Deep experience of international research and research management, including:

- National and international leadership roles at the forefront of particle physics; currently the Co-Spokesperson of the international Deep Underground Neutrino Experiment (DUNE). DUNE comprises a collaboration of 1000 scientists and will be the next new large-scale particle physics construction project.
- Extensive experience of scientific peer review bodies, including chairing STFC's main peer review body for particle physics, astrophysics and nuclear physics.
- Strong record of securing research income; scientific lead on the recently announced £65M UK investment in DUNE/LBNF.
- Track record of research excellence: key measurements of the properties of W and Z bosons at LEP; neutrino oscillation measurements at MINOS; and pioneer of Particle Flow Calorimetry for future collider experiments.

## EDUCATION

1988 – 1991: D.Phil. in Experimental Astro-particle Physics, University of Oxford  
1985 – 1998: B.A. (Hons) Physics, University of Oxford  
1982 – 1984: A-Levels (Mathematics, Further mathematics, Physics, Chemistry),  
Worthing VI<sup>th</sup> Form College

## EMPLOYMENT HISTORY

2008 – Present: **University of Cambridge** (Professor of Experimental Particle Physics)  
2000 – 2008: **University of Cambridge** (Lecturer and then Reader from 2004)  
1996 – 2000: **CERN** (Staff Scientist)  
1994 – 1996: **CERN** (Fellow)  
1992 – 1994: **University College London** (Research Fellow)

## RESEARCH MANAGEMENT

Holder of major research management positions in international projects, including:

2015 – Present: Co-spokesperson of the DUNE Collaboration  
Elected leader of the DUNE collaboration since its inception. Main achievements: building the collaboration (now over 1000 scientists from 31 nations); defining project governance and project management structures; chairing the executive board; interaction with international funding bodies; building the international funding matrix; providing the outward-looking face of the collaboration to the international research community.

2014 – Present: Co-Leader of the DUNE-UK Consortium  
Main achievements: building consortium of 16 UK institutions (40 academics); PI on DUNE-UK £3.4M preparatory phase and £3.5M pre-construction grant; development of Business Case for BEIS capital investment; scientific lead for £65M UK investment in DUNE.

2013 – 2015: Elected member of the LBNE Executive Board  
2013 – 2015: Member of the Linear Collider Collaboration Executive Board for physics and detectors

2011 – 2015: Budget holder of UK ATLAS Level-1 Calorimeter trigger upgrade project  
2004 – 2008: Elected member of the MINOS collaboration Executive Board  
1997 – 2000: Member of the LEP W-Physics Steering Board  
1995 – 1999: Convenor of the OPAL W-Physics Working Group

### PEER REVIEW AND PROJECT OVERSIGHT

Major roles in national and international scientific peer review and project oversight, including:

2015 – Present: LZ International Project Oversight Board  
2015 – Present: Research Council of Norway FRINATEK panel  
2012 – Present: Chair of the STFC MICE Project Oversight Committee  
2011 – 2015: Royal Society URF Selection Panel A1  
2011 – 2013: Chair of STFC Projects Peer Review Panel (PPRP)  
2009 – 2011: Deputy Chair of STFC Projects Peer Review Panel (PPRP)  
2008 – 2014: UK Particle Physics Advisory Panel (PPAP)

### UNIVERSITY, TEACHING AND EDUCATION ROLES

University, teaching and educational roles including:

2011 – 2015: Faculty Board and Degree Committee for Physics and Chemistry  
2010 – 2013: Director of UK HEP Graduate Summer School  
2010 – 2013: Chair of Department of Physics Consultative Committee  
2006 – 2008: Cavendish Executive Board  
2004 – 2010: Cavendish Teaching Committee  
2002 – 2015: Director of Studies for Physical Natural Sciences at Emmanuel College

### BOOKS

Author of “**Modern Particle Physics**”, published by Cambridge University Press in 2013, a best-selling undergraduate/graduate-level textbook in particle physics, which has been adopted for university physics courses around the globe.

### ACTIVE GRANTS AND FUNDING

Scientific Lead, PI or Co-I on the following active grants:

- BEIS Capital Award for DUNE/LBNF Construction (announced in September 2017), lead scientist, total value **£65M**
- DUNE Pre-construction phase (STFC), PI, Oct/17-Sep/19, total value **£3.5M**
- ProtoDUNE (STFC Capital Extension award), PI, Apr/15-Mar/18, total value **£0.9M**
- DUNE Preparatory Phase (STFC), PI, Oct/14-Sep/17, total value **£2.5M**
- ATLAS Upgrade Project (STFC), Co-I, Apr/13-Mar/19, value to Cambridge, **£291k**
- MicroBooNE (STFC PRD Grant), PI, Apr/2015-Oct/17, total value **£145k**
- AIDA 2020 (EU Horizon 2020), Co-I, May/15-Apr/19, value to Cambridge **£144k**

### PUBLICATIONS

Author of 1210 publications: h-index 72 (Web of Science).

### RECENT INVITED LECTURES, COLLOQUIA AND PLENARY TALKS

05/12/2017: Public lecture, Bogotá, Colombia  
05/12/2017: Invited plenary, COMHEP, 2<sup>nd</sup> Colombian meeting of High Energy Physics, Bogotá, Colombia  
29/11/2017: Invited plenary, Physics at the Terascale, DESY, Germany  
10/11/2017: Invited colloquium, NIKHEF, Amsterdam, Netherlands  
08/11/2017: Invited keynote talk, University of Amsterdam Symposium, Amsterdam, Netherlands

19/09/2017: Invited plenary talk, XXXVIII meeting of Brazilian Division of Particles and Fields, Passa Quatro, Brazil

16/09/2017: Invited colloquium, Universidade Federal do Rio de Janeiro, Brazil

02/06/2017: Invited colloquium, Universidade de Campinas, Brazil

01/06/2017: Invited plenary talk, FAPESP meeting, Sao Paulo, Brazil

31/05/2017: Invited colloquium, Universidade Sao Paolo, Brazil

24/05/2017: Invited colloquium, University of Mainz, Germany

26/04/2017: Invited plenary talk, Spanish HEP meeting, Granada, Spain

08/03/2017: Invited plenary talk, CLICdp Meeting, CERN, Switzerland

24/11/2016: Invited lectures, XVII Mexican School on Particles and Fields, San Christobal de las Casas, Mexico

15/11/2016: Invited plenary talk, XI Latin American Symposium of High Energy Physics, City of Antigua, Guatemala

29/10/2016: Invited keynote opening plenary session talk, IEEE NSS/MIC meeting, Strasbourg, France

17/10/2016: Invited colloquium, University of California at Davis, Davis, USA

14/10/2016: Invited colloquium, Northern Illinois University, Dekalb, USA

08/06/2016: Invited colloquium, Lancaster University, UK

18/04/2016: Invited plenary talk, APS Meeting, Salt Lake City

04/04/2016: Invited colloquium, Max-Planck-Institut für Physik, Munich, Germany

03/03/2016: Invited colloquium, CBPF, Rio de Janeiro, Brazil