



# Lichfield Science & Engineering Society

LICHFIELD **GARRICK**  
*Theatre & Studio*

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## DEEP SCIENCE: THE SEARCH FOR DARK MATTER AND BEYOND

**Professor Sean Paling**

**Facility Director, Boulby Underground Laboratory  
Senior scientist, Science and Technology Facilities Council**

**8:00 pm on Tuesday, 3<sup>rd</sup> October 2023  
In the Studio Theatre of the Lichfield Garrick**

Professor Paling has been Director of Boulby Underground Laboratory since 2010, having previously been a post-doctoral researcher for Sheffield University involved in Dark Matter projects operating at Boulby. Prior to that he worked in a combination of medical imaging and astrophysics positions in the UK and USA, after doing first degrees in Physics and Astrophysics in York and Leeds.

As well as the stars & galaxies we can see on a clear night, observations suggest there is much more matter out there that we cannot see. This is known as 'DARK MATTER' - the missing mass in the universe - and the race is on in the world science community to find out exactly what it is.

For more than two decades UK and international astrophysicists have been operating experiments in a dedicated 'low background' facility, 1100m below ground at Boulby salt and Polyhalite mine in the North East of England. The Boulby scientists are trying to be the first to prove (or disprove) the favoured theory that Dark Matter is particles: as yet undetected subatomic particles all around us, each weighing a small amount but together accounting for most of the mass of the Universe.

This talk will give an overview of the Boulby Deep Underground Science Facility, the Dark Matter search experiments hosted and the new areas of deep underground science underway or emerging.

For further information, please see our website at [www.LSES.org.uk](http://www.LSES.org.uk)  
Students and Members Free.

Visitors £8.00. Tickets are not issued in advance, please pay at the door.

Members must sign in. Those signing in before 7:50 pm will have precedence over all visitors.

This lecture is expected to finish by 9.30 pm.