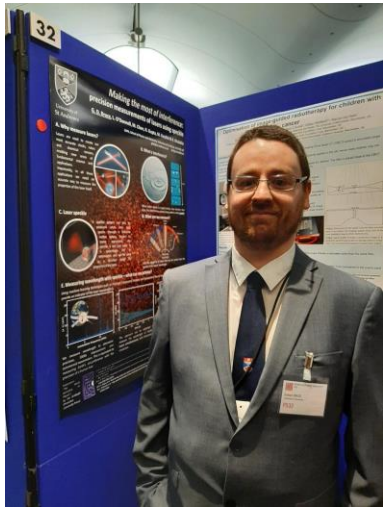
# STEM for Britain Success

**Author(s):** Graham D. Bruce
**Institution(s):** University of St Andrews
**Funder(s):** Leverhulme Trust, EPSRC

**Abstract**
Graham Bruce, senior post-doctoral researcher at University of St Andrews, won the Silver award for the excellence of his physics research and communication skills at STEM for BRITAIN 2020 – a prestigious annual competition held in the Houses of Parliament.


(Photo copyright John Deehan Photography Ltd)

**Project Description**
Graham presented his research to dozens of politicians and a panel of expert judges as part of the poster competition on Monday 9 March 2020. His research involves the development of new techniques to measure laser wavelength with remarkable precision. The approach starts with a surprising step: to measure a laser beam precisely, it is first converted into the biggest mess possible by shining the laser light at a rough surface to scatter the light and create speckle. Tracking changes in this pattern allowed them to resolve attometre-level wavelength changes of lasers.

**Comments**
SUPA was well represented, with a further three finalists:
Kirsty Paton, Glasgow, on new detectors for electron microscopy;
Jacqueline Sinclair, UWS, on pygmy dipole resonance in Ni nucleii;
and
Adam Forrest, Heriot-Watt, on boosting power output of ultrashort-pulse lasers.

**Event Link** http://www.setforbritain.org.uk/index.asp
**Poster Link** http://www.setforbritain.org.uk/2020winners-posters/P-BRUCE-6487-PSR.pdf
**Main Research Paper** Opt. Lett. **44**, 1367 (2019)