

## Research Associate in Quantum Information Theory

Thu, 2020-11-19 10:17 - [Georgia Mortzou](#) [1] **At:** Department of Mathematics, University of York  
**Deadline:** 13 December, 2020

### Location

Department of Mathematics, University of York York YO10 5DD United Kingdom  
See map: [Google Maps](#) [2]

A Postdoctoral Research Associate (PDRA) position is available in the area of quantum technologies, supported by an Innovate UK project Assurance for Quantum Random Number Generators. This project is a major collaboration with several industrial partners. The aim is to work with such companies, studying their current commercial and near commercial quantum random number generators (QRNGs) in order to accurately assess the amount of quantum randomness they are generating.

RNGs have numerous uses including as essential components in quantum communication systems. An outstanding issue for RNGs is authoritative accreditation of the output. Tests based on numerical analysis of the output sequence are useful to identify errors but cannot say anything about secrecy. Stronger certification is possible for QRNGs, where the physical process used to create the output sequence is thoroughly analysed. The current project will involve developing appropriate models for several optical QRNGs based on near-commercial implementations. From these we will compute the amount of certified quantum randomness generated.

This is a theoretical project, based in the Department of Mathematics at the University of York working with Prof Roger Colbeck. It will require interfacing with experimental groups and commercial partners to put the ideas developed into practice.

This is a full-time position with a fixed term until 31 October 2023. The start date is 1st February 2021 or as soon as possible thereafter.

For information enquiries, contact Professor Roger Colbeck ([roger \[dot\] colbeck \[at\] york \[dot\] ac \[dot\] uk](mailto:roger.colbeck@york.ac.uk))

Interview date: 13/01/2021

For more information and to apply, visit [https://jobs.york.ac.uk/wd/plsql/wd\\_portal.show\\_job?p\\_web\\_site\\_id=3885&p\\_web\\_page\\_id=422485](https://jobs.york.ac.uk/wd/plsql/wd_portal.show_job?p_web_site_id=3885&p_web_page_id=422485)

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