ALEXANDER C. W. GOUGH

EDUCATION

Newcastle University – School of Mathematics, Statistics, and Physics **2020–Present**
PhD Mathematics

- Topic: Large scale structure of the universe in the nonlinear regime.

Oxford University – Balliol College **2016–2020**
BA Physics – 1st class *2016–2019*
MMathPhys – Distinction *2019–2020*

RESEARCH EXPERIENCE

Astrophysics Subdepartment, Oxford University, Oxford **Summer 2019**
Physics Research Intern

- Studied a parametric moment expansion to model polarised galactic foregrounds.

Manoharan Lab, Harvard University, Cambridge, MA **Summer 2015**
Physics Research Intern

- Designed and built an inline holographic microscope to track nanoparticles in solution, with modifications for dark-field holography.

Computing languages/skills

- Comfortable with LaTeX and Python, basic familiarity with Matlab.

TEACHING/OUTREACH EXPERIENCE

Oxford Physics Department, Oxford **January 2020**
Public outreach volunteer (Oxford Stargazing)

The Ogden Trust/Gosford Hill School, Oxford **Summer 2018**
Physics School Intern

- Helped rewrite KS3 schemes of work and mark exams.
- Planned and delivered a supplementary lesson to A level students.
- Ran a careers workshop for year 9 students.

The Oxford Trust: Science Oxford, Oxford **2018–2020**
Live Event Staff Member (part time)
Saturday Science Club Event Volunteer (part time)

- Support existing activities run by Science Oxford including Saturday Science Clubs.
- Support community outreach events that aim to engage local communities in encouraging and facilitating the study and communication of STEM subjects.

Sudbury Parks and Recreation, Sudbury, MA **Summer 2017**
Summer Camp Science Specialist

- Designed and ran demonstrations/activities for children ages 5–10 at a summer camp.

Lincoln-Sudbury Regional High School, Sudbury, MA **2015–2016**

Academic Support Centre/METCO Tutor *2016*
Accelerated Physics Teaching Assistant *2015–2016*

- Worked with students referred to academic support centre on homework and school work, particularly focusing on mathematics and sciences.
- Helped facilitate lab work and answer questions in an accelerated physics class for high school seniors in their final year of school.

Museum of Science, Boston, MA **2015–2016**
Early Childhood Interpretation Intern *Summer 2016*
Youth Volunteer *2015–2016*

- Assisted in daily operation of the Discovery Centre, which specialises in ages 0–8, by interpreting and maintaining exhibits and running activities.
- Assisted in professional development of new volunteers.
- Developed new sensory area activity to explore colour mixing and artistic integration into science designed for children under 5.
- Participated in professional development in a Mind in the Making workshop focusing on psychology of childrens' learning.

Kumon Math and Reading Centre of Sudbury, Sudbury, MA **2013–2014**
Early Learning Educator and Grader

- Worked individually with children to develop basic reading and number skills. Marked math and reading exercises.

OTHER EXPERIENCE

Oxford University Taekwondo School **2016–2020**
Assistant Instructor *2016–2020*
Treasurer *2018–2019*

Giorgio's Taekwon-do, Sudbury, MA **2010–2016**
Black Belt Class Director 2014–2016
Lead Instructor of the KidKwon-Do Program 2012–2016
Taekwon-Do Instructor 2010–2016

OTHER AWARDS/QUALIFICATIONS

Ken Allen Prize, Balliol College **2019**

- For experimental work based on project: *Colour magnitude diagrams for open clusters.*

Taekwon-do 4th Dan International Instructor, ITF **2019**

- Dan number GB-4-355, International Instructor in ITF Taekwon-do.

MOScar, Boston Museum of Science **2015**

- For "best example of volunteer mission and spirit."

Alexandra Massand Award, Giorgio's Taekwon-do **2010**

- "To honor outstanding achievement in Taekwon-Do and an indomitable spirit."