

Final year Aerospace Engineering PhD student at the University of Bristol - with an MSci in Physics with Industrial Experience at - developing a microscintillator radioactivity detector for atmospheric ionisation measurements. Keen to continue developing instrumentation, participate in scientific research, and gain international experience.

Education

**Aerospace
Engineering PhD**
University of Bristol, UK
Mar 2021 - Sep 2024

**Development and
characterisation of a small form
factor balloon-borne CsI(Tl)-PiN
radioactivity detector.**

- Characterised detector performance in a laboratory, establishing count rate and energy resolution
- Modified electronics for low temperature environment
- Improved microcontroller firmware and interfaced detector with industry standard instrumentation
- Analysed small to large (6-month) datasets using Python to establish trends with natural phenomena
- Developed automatic logging and upload of detector data to GitHub repository using Raspberry Pi
- Collaborated with industry partner A-Squared Technologies Ltd. with intent to bring detector to market

**Physics with Industrial
Experience (MSci)**
University of Bristol, UK
Sep 2016 - Aug 2020

**Achieved a 2:1 classification
with a year's industrial
experience as a Science
Communicator.**

- Undertook a final year research project on SoLi δ anti-neutrino detector R&D
- Investigated the validity of a SoLi δ redesign: wavelength shifting strips vs. wavelength shifting fibres
- Project included operating photo-multiplier tubes, safe handling of chemicals, using picoscopes
- Degree units included: Solid State Physics, Nuclear Reactor Physics, Quantum Physics, and Particle Physics

Science Communication
ISIS Neutron and Muon Source,
Central Laser Facility, STFC, UK
Jul 2018 - Jul 2019

**Undertook a placement year
disseminating neutron and laser
science research to a variety of
audiences.**

- Communicated unfamiliar multi-disciplinary research, primarily through article writing
- Developed professional skills including interpersonal relations, public speaking, and time management due to working between two large research facilities
- Fostered creativity by applying practical Physics skills to unrelated problems: writing a Python script to generate annual report publication lists

Experience

Science Journalism Internship
European Southern Observatory, UK
Sep 2020 - Feb 2021

- Assessed new astrophysical publications for scientific value, relevance, and public appeal
- Distilled and communicated novel research to a range of audiences through a variety of media including press releases, scripted videos, and blog posts
- Worked collaboratively with colleagues in Germany and Chile to deliver content in a timely manner

Be More Empowered for Success Advocate
Bristol Doctoral College, UK
Sep 2022 - Jul 2024

- Helped shape a programme to improve the postgraduate experience of Black, Asian, and Minority Ethnic researchers at the University of Bristol
- Demonstrated leadership by organising and hosting events
- With a small team, generated positive impact within the University's postgraduate researcher community

Widening Participation Tutor
University of Bristol, UK
Oct 2022 - Sep 2024

- Worked with groups of students from backgrounds which are under-represented at university
- Created a signal processing workshop for students aged 16-18, bringing together circuit building and Python using Raspberry Pi Picos
- Delivered presentations to a range of young people about science and engineering

Key Skills

- Python
- Lab equipment proficiency
- PicBasic Pro
- Creativity
- Self-motivation
- Critical-thinking
- Public Speaking

Presentations & Publications

- [Modelling the response of a CsI\(Tl\)-PiN photodiode Microscintillator detector,](#)
J. Tabbett, K. L. Aplin, NIM-A, 2024 doi:10.1016/j.nima.2024.169105
- [Development of a balloon-borne radioactivity detector for space weather measurements,](#)
J. Tabbett, K. L. Aplin, European Geosciences Union 2024
- [Witnessing a Forbush Decrease with a Microscintillator Ionisation Detector over the Atlantic Ocean,](#)
J. Tabbett, K. L. Aplin, S. Barbosa, European Geosciences Union 2023
- [Up close and personal with the Minuscule Extremely Large Telescope,](#)
J. Tabbett, European Southern Observatory, 2021
- [Neutrons and muons: history, mystery and science meet,](#)
J. Tabbett, ISIS STFC, 2018
- [Neutrons probe chemical and enzymatic organic removal methods,](#)
J. Tabbett, ISIS STFC, 2018

References available on request.