

Stephen T. Mahon

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EDUCATION

University College Cork, Western Road, Cork, Ireland

Masters of science (M.Sc.) in Laser Spectroscopy Physics

Jul 2015 – Present

- Thesis: Frequency comb sources for cutting-edge trace gas detection
- Advisor: Prof Albert Ruth
- Research areas: Trace gas detection, lasers, spectroscopy, environmental physics.

Bachelor of science (B.Sc.) in Chemical Physics

Sep 2011 – May 2015

- Second-class honors, upper division.
- Cumulative GPA: 3.4 / 4.0

RESEARCH EXPERIENCE

Department of Physics, University College Cork, Western Road, Cork, Ireland

Masters of science, Laser Spectroscopy Group

Jul 2015 – Present

- Project: Frequency comb sources for cutting-edge trace gas detection
- Supervisor: Prof Albert Ruth
- A one year research project on the marketability of a frequency comb source. Focus on spectroscopy for for trace gas and volatile organic compounds detection.

Tyndall National Institute, Dyke Parade, Cork, Ireland

Advanced Physics Research Project, III-V Materials and Devices

Jan 2015 – Apr 2015

- Project: Building a photonic device using selective oxidation
- Supervisor: Mr Brian Corbett
- Research areas: Fabrication, oxidation, laser, current confinement.

Advanced Chemistry Research Project, III-V Materials and Devices

Sep 2014 – Jan 2015

- Project: Developing oxidation processes for (AlGa)InAs materials
- Supervisor: Mr Brian Corbett
- Research areas: Oxidation, semiconductors, photonic devices.

Undergraduate Research Student, III-V Materials and Devices

Jun 2014 – Aug 2014

- Project: Analysis of electro-optic modulators
- Supervisors: Mr Brian Corbett
- Research areas: Quantum confined Stark effects, Kramers–Kronig relation, semiconductors.

GENERAL SKILLS

Spectroscopy

Cavity Enhanced Absorption Spectroscopy • Optical Alignment • Trace gas detection • Environmental Physics

Photonics

LIV • Pulsed & CW • Thermal resistance • Spectral measurements • Modal analysis • Current confinement • Oxidation

Fabrication

Class 100 Lab – 100 Hours • Class 1000 – 50 Hours

Teaching

Teaching Assistant – 200 Hours • Laboratory Demonstrator – 200 Hours

Languages

C • C++ • \LaTeX • LabVIEW • MATLAB • Python

ACADEMIC HONORS

Masters Scholarship, Science Foundation Ireland/Enterprise Ireland

Jul 2015

Technology innovation development award 2015, a fund to enable researchers to produce novel technologies for commercialisation and to realise greater economic impact from state investments in research.

Summer Internship Scholarship, Science Foundation Ireland

Jun 2014

Provided funding for undergraduate internship position in a science related field.

PROFESSIONAL AFFILIATIONS	Institute of Electrical and Electronics Engineers , New York, USA	
	Member	2014 – Present
	Beoir , Dublin, Ireland	
	Member	2012 – Present
	Institute of Physics , London, UK	
	Member	2011 – Present
ACHIEVEMENTS & AWARDS	Getting Started Technology Venture Programme, Science Foundation Ireland, Dublin City University Oct 2015	
	Awarded a certification of completion for the Technology Innovation Development Award in entrepreneurship training. Modules included Market Feasibility and Exploratory Research, Product Development & Innovation, Intellectual Property, Trade Marks and Copyright, Funding Models, Project Management, Technology Assessment & Commercialisation Opportunity, Business Finance and Cash Flow.	
	Laser and Laser Safety, Physics Department, University College Cork	Mar 2014
	Attended and completed laser safety course hosted by the Physics Department and Radiation Protection Office in UCC by Prof Albert Ruth and Prof Frank Peters in March 2014.	
CAMPUS ACTIVITIES	Physics and Astronomy Society , University College Cork	
	Academic Officer	Sep 2014 – May 2015
	<ul style="list-style-type: none"> • Promoted the interest of physics among the university students, staff and the wider community. • Organised activities including academic talks by lectures and guests, physics competitions, an undergraduate physics seminar prize. • Organised a <i>Week of Light</i> event throughout the campus as part of the International Year of Light. Activities included observatory tours, movie screenings, presentations from the Physics Department staff, a LiDAR demonstration, and star gazing. • Nominated for <i>Academic Society of the Year</i> by the University College Cork Society Guild. 	
WORK EXPERIENCE	University College Cork , Western Road, Cork, Ireland	
	Tutor, UCC Plus Programme & Physics Department	Sep 2014 – Present
	<ul style="list-style-type: none"> • Tutor for first year physics module for Biological and Chemical sciences, Genetics, Environmental Science, and Nutritional and Food Science students. • Teaching 3 hours per week to classes ranging from 10 – 300 students. • Preparing weekly lecturers to reinforced material learned in class, solving the problems assigned for homework, and final exam preparation. • Topics covered include fundamental physical concepts in the areas of mechanics, thermodynamics, electro- and magnetostatics, geometrical optics, quantum and nuclear physics. 	
	Lead Laboratory Demonstrator, Physics Department	Sep 2013 – Present
	<ul style="list-style-type: none"> • Lead demonstrator in the Physics Department for 1st year practical sessions for Physics Students. • Ensuring experiments are performed correctly and safely. • Explaining theory and concepts to students, assisting students with their computer skills and introducing how to write scientific reports. • Correcting and grading lab reports for 20 students weekly. 	
	National Space Centre , Elfordstown Earthstation, Midleton, Co. Cork, Ireland	
	Satellite Gateway Technician/System Administrator, Engineering Department	Jun 2012 – Sep 2014
	<ul style="list-style-type: none"> • Experienced in in-house and 3rd party hardware and software support in a Space industry environment. • Involved in installation, configuration and fault-finding of essential equipment and repair duties to maintain optimal systems. • Provided system support and troubleshooting problem areas in timely and accurate fashion. • Led responsibilities for configurations, maintenance and operation of servers and computers as the System Administration for the company. • Worked to project schedules with international customers and vendors. 	
INTERESTS	Beer brewing, cooking, cycling, physics, reading, teaching, travel.	

[CV compiled on 2015-12-04]