

PERSONAL INFORMATION

Louise Belshaw



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POSITION

Postgraduate Research Student in Physics

WORK EXPERIENCE

Aug 09 - Sep 09

Internship in the Centre for Plasma Physics

Centre for Plasma Physics, Queen's University Belfast, United Kingdom

A 6-week long internship, gaining experience working with an ion trap, collecting and analysing data using LabView and Matlab.

Sep 10 - Present

Postgraduate Tutor in the School of Mathematics and Physics

School of Mathematics and Physics, Queen's University Belfast, United Kingdom

Teaching University level mathematics classes of up to twenty students, who are currently undertaking the Mathematics for Physicists Level 1 module. This involves lesson planning, adapting explanations and classes for each group of students appropriately, and collecting and marking their homeworks each week.

Jan 12 - Present

Private Tutor

Belfast, United Kingdom

Tutoring high school (A-Level) Physics and high school (GCSE) Mathematics on a one-to-one basis, lesson planning each week and setting appropriate tasks, which are then collected and corrected.

EDUCATION AND TRAINING

Oct 06 - Jul 10

M.Sci. Physics; 1st class (degree mark 87%)

Queen's University Belfast, United Kingdom

Modules covered included astrophysics, atomic and nuclear physics, electromagnetism, quantum mechanics and relativity, medical physics, condensed matter physics and an intensive final year project in atomic and molecular physics in intense laser fields.

Oct 10 - Present **Doctor of Philosophy in Physics, Ph.D. – in progress**

Queen's University Belfast, United Kingdom

Thesis title: Ultrafast Dynamics of Biomolecular Systems

For my Ph.D. work I am investigating ultrafast (femtosecond or less) processes such as movement of electrons in biologically relevant molecules, for example, amino acids and DNA bases.

Skills include: the use of ion traps and time of flight devices for high resolution mass spectrometry, femtosecond and attosecond laser technology, familiarity with ultrahigh vacuum systems, and experience with chemical preparation of biomolecular samples.

A number of computer programs have been utilised for data acquisition and analysis, and simulations, for example, LabView, Matlab and hydrodynamic simulation codes.

19 Aug 12 - 2 Sep 12 **CPOTS Summer School - 6 ECTS points**

Erasmus Charged Particle Optics: Theory and Simulation (CPOTS) course, University of Crete, Heraklion, Crete, Greece.

A two week course undertaken in charged particle optics, including theoretical and practical lectures, with parallel laboratory sessions spent learning the simulation software, SIMION, to apply the theory learnt in lectures.

PERSONAL SKILLS

Mother tongue(s) English

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Italian	C2	C2	C1	C1	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills Team work: Throughout my undergraduate and postgraduate studies it has proved essential to develop excellent teamwork skills. In my undergraduate studies I joined a research group for an intensive final year project, learning to work with others in an experimental setting and also having frequent meetings to discuss results and further progression. This practice has continued through my Ph.D. studies, and I have been involved in two experimental campaigns at a UK facility and one experimental campaign in Italy, where working and communicating efficiently with staff and collaborators is key to the smooth running of an experiment.

Presentation skills: As part of my Ph.D. studies, I have presented my work in the form of a poster presentation at five international and national conferences, and have given oral presentations within Queen’s University in the Physics department and also in the department for Molecular Biosciences. I have also given a talk at a national conference, for which I won a prize for the best talk by a postgraduate student, showing that I can explain and present my work in a clear way.

Organisational skills and competences For the last two academic years I have undertaken tutoring of small groups of level 1 Physics students studying mathematics. This involves twice weekly classes, for which I plan accordingly. Furthermore, I also tutored high school (A level) Physics last year, and this year I have been tutoring high school (GCSE level) Mathematics. This involves working closely with a student on a one to one basis, planning one hour lessons, adapting lessons accordingly for the student’s needs, and correcting and discussing the student’s work.

Outside of an academic setting, I have been responsible for the organisation and management of a small group of employees in a retail environment on a day to day basis.

Technical skills and competences As part of my studies, I have gained working knowledge with the following:

- Femtosecond laser technology; working with class IV lasers;
- Ion traps and time of flight devices;
- High vacuum systems;
- Chemical preparation.

Computer skills and competences Working knowledge and excellent command of all aspects of Microsoft Office (Powerpoint, Word, Excel);
 Working knowledge and excellent command of Matlab for data analysis and presentation;
 Working knowledge and command of Labview for data acquisition and analysis;
 Working knowledge and command of SIMION for charged particle simulations
 Experience using 1D hydrodynamic codes for simulations;
 Some experience using C; undertaken as a 6 week long component of an undergraduate course.

Other interests Yoga, Squash, Ballet, Travelling, Reading.