



<b>Research Centre</b>	Centre for the Advancement of STEM Teaching & Learning (CASTeL)
<b>Post Title</b>	Post-Doctoral Researcher in OSOS and 3DIPhE
<b>Projects</b>	Open Schools for Open Societies (OSOS) & Three Dimensions of Inquiry in Physics Education (3DIPhE)
<b>Funding Agency</b>	H2020 / Erasmus+
<b>Level on Framework</b>	Level 1
<b>Post duration</b>	Fixed Term Up to 2 years

### **Research Career Framework**

As part of this role the researcher will be required to participate in the DCU Research Career Framework <http://www.dcu.ie/hr/ResearchersFramework/index.shtml> . This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

### **Background**

Dublin City University ([www.dcu.ie](http://www.dcu.ie) ) is a research-intensive, globally-engaged, dynamic institution that is distinguished by both the quality and impact of its graduates and its focus on the translation of knowledge into societal and economic benefit. DCU prepares its students well for success in life, and in the workplace, by providing a high-quality, rounded education appropriate to the challenges and opportunities of the 21st century. Through its mission to transform lives and societies through education, research and innovation, DCU acts as an agent of social, cultural and economic progress. As Ireland's University of Enterprise, it is characterized by a focus on innovation and entrepreneurship and a track-record of effective engagement with the enterprise sector. Excellence in its education and research activities has led to its consistent ranking in the top 50 of the world's young universities (QS Top 50 under 50).

**The Centre for the Advancement of STEM Teaching & Learning (CASTeL)**, at Dublin City University, is multidisciplinary research team focussed on enhancing science and mathematics education at all educational levels, supported by evidence-based research and contributing to international good practice. CASTeL members, comprising of scientists, mathematicians and educationalists from Dublin City University (DCU)'s Faculty of Science

and Health and Institute of Education, lead and participate in formal and informal STEM education projects, nationally and internationally.

## **The Projects**

CASTeL at Dublin City University, is seeking a Post-Doctoral Researcher for a two-year fixed-term contract to support two European Projects in STEM Education:

### **Three Dimensions of Inquiry in Physics Education (3DIPhE)**

This ERASMUS+ project is focused on supporting Teachers and Professional Learning Group (PLG) Coaches to inquiry into their own practice in the context of Inquiry Physics Education. The overall project is being evaluated using Education Design Research. In the project, regular PLGs' meetings and workshops will be used to support teachers. These will involve training on Practitioner Inquiry and reflections on each participants inquiry. They will support participants to inquire into their practice and to make conclusions and recommendations based on evidence generated during the process. PLGs from different countries will exchange their experience, discuss their problems and reflect on methods, evidence etc. Results of these inquiries will be presented at national and international events. Good examples of IBL praxis will be presented in a written, publicly available form. The project will also produce design principles for effective courses on practitioner inquiry and on coaching PLGs.

### **Open Schools for Open Societies (OSOS)**

This Horizon 2020 funded project supports a large number of European schools to implement Open Schooling approaches by a) developing a model that promote such a culture, b) offering guidelines and advice on issues such as staff development, redesigning time, and partnerships with relevant organisations (local industries, research organisations, parents associations and policy makers), and c) suggesting a range of possible implementation processes from small-scale prototypes through to setting up an "open school within a school" or even designing a new school while it is testing and assessing them in more than 1,000 school environments in 12 European countries. The themes of the project activities developed and pursuit in participating schools that will take place will focus on areas of science linked with the Grand Societal Challenges as shaped by the EC, will be related to RRI and will link with regional and local issues of interest. The project is coordinated by Ellinogermaniki Agogi Scholi Panagea Savva (EA) and has 20 partner institutions. The project aims to describe and implement at scale a process that will facilitate the transformation of schools to innovative ecosystems, acting as shared sites of science learning for which leaders, teachers, students and the local community share responsibility, over which they share authority, and from which they all benefit through the increase of their communities' science capital and the development of responsible citizenship.

## **Principal Duties and Responsibilities**

The Post-Doctoral Researcher will report to the project Principal Investigators Dr. Eilish McLoughlin and Dr. James Lovatt. The Postdoctoral Researcher will carry out research on the two EU projects 3DIPHE and OSOS including:

- Conducting a specified programme of research under the supervision and direction of the Principal Investigator
- Identifying and summarising existing literature on Practitioner Inquiry and Open Schooling in STEM Education
- Supporting collaboration with project schools, coaches, teachers through – liaising with teachers and management.
- Organising and delivering a range of workshops for teachers and dissemination multiplier events
- Taking leadership and contribute to generation of papers, reports and other funding proposals
- Actively publishing research findings in high impact journals and at key conferences as part of the research group effort to disseminate research outputs.
- Contributing to the financial management of a research project
- Engaging in appropriate training and professional development opportunities as required by the Principal Investigators, School or University in order to develop research skills and competencies.
- Acquiring generic and transferable skills (including project management, business skills and postgraduate mentoring/supervision)
- Developing and maintaining project website and communications
- Engaging in the wider research and scholarly activities of the research Centre, School or University
- Carrying out administrative work to support the program of research where required, including regular funding agency reports and internal reports etc.
- Carrying out additional duties as may reasonably be required within the general scope and level of the post

## **Minimum Criteria**

The candidate must hold a PhD in Science (Physics, Chemistry, Biology) or Science Education with academic publication and demonstrate significant experience in STEM curriculum design and implementation and STEM teacher education.

The applicant should have a proven track record of working independently, but should also demonstrate their ability to work as part of a team. Applicants must have excellent communication and organisational skills and demonstrate a flexible and versatile approach to their work.

## **The following experiences and competences are desirable:**

- Experience of project management, including financial management skills

- Understanding of how Irish secondary schools operate and the regulations and requirements that bind them
- Experience of providing professional development workshops for teachers
- Experience using Education Design Research as an evaluation framework
- Proven ability to deal tactfully with a wide range of people
- Willingness to travel to schools
- Ability to present and address a large audience with confidence
- Awareness of issues relating to evaluation large scale projects

### **Key Skills**

- Excellent written and oral proficiency in English (essential).
- Excellent written and verbal communication and interpersonal skills.
- Experience of managing projects, particularly with multiple partners.
- Qualitative and quantitative data analysis skills
- Ability to work in a team and to take responsibility to contribute to the overall success of the team
- Ability to work sensitively with a range of stake holders including students, teachers, senior managements, parents

### **Experience**

The following experiences are all desirable:

- A research postgraduate qualification with academic publication.
- Experience of project management, including financial management skills
- Understanding of how Irish secondary schools operate and the regulations and requirements that bind them
- Experience of providing professional development workshops for teachers
- Experience using Education Design Research as an evaluation framework
- Proven ability to deal tactfully with a wide range of people
- Willingness to travel to schools
- Ability to present and address a large audience with confidence
- Awareness of issues relating to evaluation large scale projects

### **Candidates will be assessed on the following competencies:**

**Discipline knowledge and Research skills** – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline.

**Understanding the Research Environment** – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications.

**Communicating Research** – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students.

**Managing & Leadership skills** - Demonstrates the potential to manage a research project

***Please note that this position is subject to the successful Garda Vetting approval process***

**Salary Scale:** \*€36,488 – €47,255 per annum

*\*Appointment will be commensurate with qualifications and experience and will be made on the appropriate point of the salary scale, in line with current Government pay policy.*

**Closing Date:** 2<sup>nd</sup> January 2018

**Informal Enquiries to:**

Dr. Eilish McLoughlin, Associate Professor, Director CASTeL, CASTeL, Dublin City University

E-mail: [Eilish.mcloughlin@dcu.ie](mailto:Eilish.mcloughlin@dcu.ie) Phone: +353 (0)1 700 5862

***Please do not send applications to this email address, instead apply as described below.***

**Application Procedure**

Application forms are available from the DCU Current Vacancies (open Competitions) website at <http://www.dcu.ie/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0) 1 7005149.

**Please clearly state the role that you are applying for in your application and email**

**subject line: Job Ref #735 Post-Doctoral Researcher in OSOS and 3DIPhE**

Applications should be submitted by email to [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie) or by Fax: +353 (0)1 7005500 or by post to the Human Resources Department, Dublin City University, Dublin 9. Human Resources Department, Dublin City University, Dublin 9. Tel: +353 1 700 5149; Fax: +353 1 700 5500 Email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

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