



NUI MAYNOOTH  
CENTRE FOR TEACHING  
AND LEARNING

# TEACHING FELLOWSHIPS 2012 - 2013



## Pilot Scheme for Learning Support for 1st Year Experimental Physics

DR NEIL TRAPPE  
neal.a.trappe@nuim.ie

I propose to start a Physics Drop-In Centre for students who need extra help in adapting previous learning to being successful in First Year Experimental Physics. In the format of a 'Drop-In Centre', which will be offered at specified times each week, students could seek extra help in understanding material, participate in problem solving sessions, engage in peer learning and get advice in the experimental techniques required for the physics laboratory environment. This is particularly important at the start of 1st year to give students the skills they require in the subject and help integrate them into University life. It is a model easily adoptable for other subjects also.

As well as the formal lectures, tutorials and laboratories, this extra facility aims to help students who have limited experience in laboratory subjects like Experimental Physics and helps give them the information and tools they require to do well in Experimental Physics (laboratory techniques, problem solving, mathematical tools required specifically for Physics, computer skills etc.). This facility should also act a social outlet for the students to meet staff and other students.

The social and academic background of students entering 1st Science at NUIM is diverse. Typically many students (circa 40% of class) have not had the opportunity of taking Physics to Leaving Cert level and therefore feel overwhelmed at the start of the course. This alone leads to the students having varied learning needs with some requiring extra assistance, often struggling both with the academic level and the volume of material covered in the course.

Students entering via non traditional routes may also find the course difficult with many new formalisms as well as specific mathematical content in the physics material. This Fellowship project will offer the opportunity to formalise extra resources and facilities of the Experimental Physics Department, to schedule a Physics Support Drop-In Centre and allow students extra access in a friendly learning environment and a facility also to share experience in an informal way with peers.

This would be available to Access students primarily but also potentially available to the wider 1st year class who could benefit from the experience if we can facilitate more students. We typically have about 200 students taking first year physics so if we get up to 10-20% regular engagement with this resource, we would see 20 to

40 students per week which should be manageable for an initial pilot scheme.

It is envisaged that the funding would be used to pay postgraduate students a demonstrating fee to open the Drop-In Centre at specific times within the Science Timetable (e.g. 4 hours a week) as a pilot scheme. I will supervise and over see the delivery of this resource.

Obviously, the Maths Support Centre is already doing an excellent job in the area of Maths and this project aims to complement this existing facility. Through student feedback obtained over the past few years there is also potential demand for subject specific support in Physics where the discipline requires a different emphasis than the mathematical support offered by the Maths Support Centre.

Although we aim this facility specifically at 1st year students and their new experience of entering University we could also in the future expand the facility to 2nd Year students (depending on resources) who also may need help with the more difficult academic levels of their second year, although I plan to prioritise 1st year students initially and offer them this 'Drop-In' facility initially.



Neil Trappe qualified with a BSc. in Applied Physics from the University of Limerick in 1998. He completed a PhD. in long wavelength optical analysis techniques in the Experimental Physics Department in NUI Maynooth in January 2002, before continuing to work in this research area as a Post-doctoral Research Associate until June 2003. Currently he is employed as a Lecturer in the Experimental Physics Department. His research interests are in the field of far-infrared space optics, specifically working on the optic configurations for missions such as SAFARI SPICA, ALMA and the HIFI instrument for the Herschel Space Observatory (ESA project). He is an active member of the Far-infrared and Submillimetre Space Astrophysics research group in the department.