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Job Details

Marie Curie Early Stage Researcher

Reference Number	012592
Location	Gilmorehill Campus / Main Building
College / Service	COLLEGE OF MVLS
Department	RI CARDIOVASCULAR & MEDICAL SCIENCES
Job Family	Research And Teaching
Position Type	Full Time
Salary Range	Approx. £33,000 - £35,000 per annum

Job Purpose

To carry out research relevant to the research project on developing novel biological imaging systems using advanced Network ('BE-OPTICAL'). The title of the project is: Multiphoton confocal imaging applied to cardiac myocardium

Submit a PhD thesis from this research and publish the results in journals of good impact. Attend and contribute to the workshops and secondments specified in the programme.

Main Duties and Responsibilities

1. To undertake high quality research in the area of multiphoton microscopy.

2. To contribute to research papers, present reports at lab meetings, give internal seminars, as well as talks and posters at national and international meetings in order to maintain
University recognition and enhance the research profile of the group.

3. To develop professional skills in laboratory studies of optical measurements on biological tissues.

4. To collaborate with members of the group in order to deliver the research results.

5. To support colleagues and supervise less experienced members of the group to assist the development of research skills and the delivery of results.

6. To keep up to date with current developments and research literature in the field.

7. To train in areas relevant to the Marie Curie research programme and submit a PhD.

8. To contribute to institute research-related activities and research-related administration

9. To attend and contribute to the workshops and secondments specified in the programme.

10. Engage in personal, professional and career development to enhance both specialist and transferable skills in accordance with desired career trajectory.

11. Undertake any other duties of equivalent standing as assigned by the Head of Institute and/or PI.

Knowledge, Qualifications, Skills and Experience

Knowledge/Qualifications

Essential:
A1 Good (equivalent to first class or upper second) BSc or equivalent undergraduate degree in relevant area
A2 Working knowledge of spoken and written English
A3. Up to date knowledge of subject area, practical and theoretical

Desirable:

B1 Knowledge of optics and materials physics at undergraduate level or above

B2 A masters degree in relevant areas.

B3 Practical and theoretical knowledge in the research areas of optical studies of material properties

Skills

Essential:

C1 Excellent interpersonal skills to allow working as part of a team.

C2 Strong writing and presenting skills.

C3 Ability to plan, design and develop laboratory experiments in the area of studies of thermo-mechanical and optical material properties

C5 Appropriate workload/time/project/budget/people management skills

C6 Extensive IT and data analysis/interpretation skills as appropriate.

C7 Self motivation, initiative and independent thought/working

C8 Problem solving skills including a flexible and pragmatic approach

Desirable:

D1 Existing skills in benchtop optical studies of material properties

Experience

Essential:

E1 At least one year of relevant research experience.

E2 Experience of scientific writing

E3 Proven ability to deliver quality outputs in a timely and efficient manner

Desirable:

F1 Writing reports or research papers

Job Features

Dimensions

Collaborate and interact with members of the research group (~ 20 people)
Collaborate and interact with members of the international consortium, in particular via secondments to two consortium partners
Deliver reports at lab meetings
Provide data for a thesis and at least one publication
Attend and contribute to consortium workshops.
Assist in the transfer of skills to other members of the consortium

Planning and Organising

Plan, design and organise programs in consultation with the Principal investigator to explore the methods of increasing the sensitivity of multiphoton microscopy applied to deep imaging.
Respond to discussions of results with Principal Investigators.
Be able to clearly summarise, interpret and analyse outcomes of experiments, suggest further plans and new directions
Keep accurate and organised records.
Co-ordinate with co-workers experiments

Decision Making

Decide in consultation with the PI appropriate strategies for analysis and interpretation of results.
Decide in consultation with the PI and co-authors the content of presentations and publications
Evaluate the use of particular approaches and techniques
Purchase of appropriate supplies

Internal/External Relationships

Liaise with research group and colleagues to exchange information to ensure efficient working.
Interact with external collaborators to organise joint research
With specialist companies for purchase of reagents
With other members of the Consortium to gain input and expertise
Maintain contact with (including membership of) appropriate professional bodies

Problem Solving

Assess different interpretations and analyses of data.
Deal with technical problems in the lab.
Identify software requirements to solve data analysis problems

Other

This EU funded programme has an agreed salary for the employee based on a legal agreement signed by the EU and the University of Glasgow. This is a statutory rate that must be provided.

Project Specifics :

Objectives: The goals are (i) to improve the collection of emitted fluorescent light from heart tissue during multiphoton excitation; (ii) to examine the extent to which the different refractive indices of the tissue distort the optical path of the excitation light and reduce the effective resolution of the multiphoton imaging system and (iii) to implement changes to the optical system to compensate for the distortion created by the refractive index mismatch.
Expected Results: The project will quantify the limitations of current multiphoton imaging of myocardial tissue showing the extent to which the maximum depth of imaging (currently ~300 microns) is due to (i) loss of light due to scattering and absorption by the overlying tissue, and (ii) distortion of the point-spread function due to the refractive index mismatch. The project will examine methods of increasing the effective NA of light collection by designing and making additional collection optics on the epicardial and endocardial surfaces using light guides and auxiliary photomultiplier tubes.
Dissemination:
The results of the research should be disseminated by publication and presentation of results at conferences.

Planned secondment:

Secondments: 3 months at Max-Planck-Institut für Dynamik und Selbstorganisation Geottingen Germany (M 12) to learn about the use of light guides to collect light from the endocardial surface and 2 months atOcular Microsurgery Institute Barcelona Spain to gain experience on clinical application of optical imaging techniques (month 30).

Standard Terms & Conditions

Terms & Conditions

Salary: Approx. £33,000 - £35,000 per annum *
Researchers will receive an additional mobility allowance, depending on personal circumstances.

This post is funded for 3 years.

New entrants to the University will be required to serve a probationary period of 6 months.

According to the regulations for mobility within the Marie Curie programme, the researcher must not have carried out his/her main activity (work, studies, etc) in the country of his/her host organisation (in this case, the United Kingdom)for more than 12 months in the 3 years immediately prior to recruitment.

All candidates are advised to visit the following website to obtain further details of the eligibility requirements for Marie Curie initiatives, see particularly page 8 to assess your criteria before making an application: - http://ec.europa.eu/research/mariecurieactions/documents/about-mca/actions/iof/marie-curie-actions-fellowships-people-wp-201301_en.pd

The University has recently been awarded the Athena SWAN Institutional Bronze Award.

*Approximate gross salary stated above is subject to employers NI deductions and the amount varies according to the living costs of host country.

Vacancy reference: 012592; Closing date 24 April 2016

More Info...