RESEARCH ASSISTANT

COLLEGE OF SCIENCE & ENGINEERING
SCHOOL/INSTITUTE
Research and Teaching
GRADE 6

Job Purpose

You will contribute to an 8 week summer research project as part of a team of undergraduate researchers working on the EPSRC project grant `von Neumann techniques in $C^*$-algebras' led by Professor Stuart White. Specifically, the job requires expert knowledge in functional analysis, groups, and topological and metric spaces.

Main Duties and Responsibilities

Perform the following activities in conjunction with and under the guidance of the Principal Investigator (Prof Stuart White), Co Investigator (Dr Joachim Zacharias), and Postdoctoral Research Assistant (Dr Samuel Evington).

1. Plan and conduct assigned research as part of a team of undergraduate researchers in accordance with the project deliverables and project/group/School/College research strategy.
2. Collaborate on technical mathematical problems with colleagues and participate in team meetings.
3. Present research progress, and background material to the research team in internal seminars.
4. Document research output, drafting technical/progress reports and papers as appropriate, using LaTeX.
5. Produce posters documenting research output.
6. Develop your research skills, including contributing to publications in refereed journals.
7. Contribute to the organisation, supervision, mentoring and training of less experienced members of the project team to ensure their effective development.
8. Undertake any other duties of equivalent standing as assigned by the Head of School and/or PI.

These key tasks are not intended to be exhaustive but simply highlight a number of major tasks which the staff member may be reasonably expected to perform.

Knowledge, Qualifications, Skills and Experience

Knowledge/Qualifications

Essential:
A1 Will have completed SCQF Level 10 (Honours degree) in mathematics (this includes successfully entering the final year of an integrated masters) with a focus on pure mathematics by June 2019.
A2 Potential to commence a PhD in functional analysis / operator algebras in October 2020.
A3 Developing specialist theoretical knowledge of functional analysis, groups, and topological spaces.
A4 A comprehensive knowledge of the wider subject area of pure mathematics as evidenced by excellent exam results in undergraduate mathematics exams to date.

Desirable
B1 Knowledge of LaTeX.

Skills
**Essential:**
C1 Excellent ability to read mathematics, and assimilate new concepts and ideas.
C2 Creativity in problem solving in pure mathematics.
C3 Excellent communication skills (oral and written), and ability to communicate complex concepts clearly and concisely.
C4 Excellent interpersonal skills, including team working and the ability to mentor and support less experienced students.
C5 Appropriate time management skills.
C6 Self motivation, initiative and independent thought/working.

**Experience**
**Essential:**
E1 Sufficient relevant problem solving experience gained through undergraduate studies.

**Desirable:**
F1 Experience of presenting mathematics to an audience.
F2 Experience of mathematical writing using LaTeX.

**Job Features**
The aspects described below will be performed in conjunction with and under the guidance of the Principal Investigator / Co Investigator / Postdoctoral Research Assistant.

**Dimensions**
To carry out a range of research activities and functions within academic environments of the highest national or international quality.
Publish as appropriate to subject specialism within agreed timescales.
Informal supervision and support of less experienced members of the project team.
Engage in personal, professional and career development to enhance both specialist and transferable skills in accordance with desired career trajectory.

**Planning and Organising**
Management of time and prioritisation of research activities.
Planning, organisation and implementation of research.
React to varying project needs and deadlines.

**Decision Making**
Undertake decision making on all aspects of research project/activities.
Prioritise own, and where appropriate delegate to junior team members’ workload.
Decide on research directions and goals within remit of original project proposal.
Adjust research approaches to meet project outcomes.

**Internal/External Relationships**
Team colleagues: to exchange information to ensure efficient working.

**Problem Solving**
Research including technical and theoretical aspects/problem solving.
Assistance of junior team members with problems relating to research project.