

Candidate Information

Position:	Research Fellow in Toxin Detection Systems
School/Department:	Institute for Global Food Security
Reference:	20/108267
Closing Date:	Monday 24 August 2020
Salary:	£33,797 per annum.
Duration:	This post is available until 31 August 2021.

JOB PURPOSE:

To be an active member of the research team assisting in the planning and delivery of research led by Prof Katrina Campbell at the Institute of Global Food Security. The successful Research Fellow in Toxin Detection Systems to be an active member of the research team assisting in the planning and delivery of research led by Prof Katrina Campbell at the Institute for Global Food Security. The successful candidate will work on a BBSRC research project entitled "Safe and Sustainable Shellfish: Introducing local testing and management solutions. This project will seek to develop novel diagnostic solutions for determining natural algal toxins in food and water.

The Research Fellow will undertake research to develop and validate immunological methods of analysis for natural toxins e.g. ELISA, LFDs and microarrays for toxin testing in seafood products and water samples and undertake research to design innovative microfluidics and sample preparation methods for simultaneous multiple contaminant analysis.

MAJOR DUTIES:

1. Undertake research to develop and validate immunological methods of analysis for natural toxins e.g. ELISA, LFDs and microarrays for toxin and microbial testing in seafood and water samples.
2. Undertake research to design innovative microfluidics and sample preparation methods for simultaneous multiple contaminant analysis.
3. Carry out basic chemistry for the derivatisation of small molecular weight contaminants to enable coupling chemistry to be performed to proteins or chemical surfaces.
4. Perform immunisation programmes and/or cell culture techniques for antibody production.
5. Carry out the characterisation of immunological reagents produced using immunological / biosensor / molecular methods for activity monitoring.
6. Conduct immunological, molecular and analytical analysis for target identification when required and undertake the critical evaluations & interpretation of the results.
7. Contribute to the design of the comparative analysis of the developed methods with existing commercial methods for toxin testing in seafood products and water samples.
8. Assist in the set-up of inter-laboratory proficiency tests for the validation of developed immunological methods of analysis as prototype kits.
9. Present regular progress reports on research to members of the research group, project partners or to external audiences to disseminate and publicise research findings.
10. Prepare, often in consultation with supervisor, material for research reports, publication in national and international journals and presentations at international conferences.
11. Assist grant holder in the preparation of funding proposals and applications to external bodies.
12. Perform all formal requirements associated with safety and good working practice in the research laboratory.
13. Complete risk assessments for all the research activities undertaken.
14. Carry out routine administrative tasks associated with the research project to ensure that goals are completed on time and within budget.
15. May contribute to introductory courses, for example, on the use of research methods and equipment.

16. Read academic papers, journals and textbooks to keep abreast of developments.
17. Carry out occasional undergraduate supervision or demonstrating within the post holder's area of expertise and under the direct guidance of a member of academic staff.
18. Carry out any other duties designated by a line manager and which fall within the general ambit of the post.

Planning and Organising:

1. Plan for specific aspects of research programmes. Timescales range from 1-6 months in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
5. Coordinate and liaise with other members of the research group over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Ensure health and safety protocols (COSHH) for use of materials are complete and records maintained up to date in compliance with toxin or animal licence requirements.
3. Carry out maintenance and calibrations of instrumentation used in the laboratory where necessary.
4. Provide guidance as required to support staff and any students who may be assisting with research.
5. Carry out routine administrative duties as requested, e.g. arranging research group meetings and assisting in the organisation of workshops.

Internal and External Relationships:

1. Liaise with research colleagues and support staff on routine matters.
2. Make internal and external contacts to develop knowledge and understanding and form relationships for future collaboration.
3. Travel to, and present at scientific meetings and collaborators laboratories.
4. Join external networks to share information and ideas and help develop external collaborations, as appropriate.
5. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. Have or be about to obtain a PhD in biochemistry, chemistry, immunology, molecular biology or analytical science or related discipline.
2. 3 years recent relevant practical experience in standard immunological methods e.g. ELISA, LFD, microarrays or biosensors.
3. Practical experience of cell culture techniques and protein purification.
4. Practical experience of sample preparation methods for food analysis e.g. extraction of low molecular chemicals and/or toxins.
5. Practical experience in analytical method development.
6. Ability to supervise, mentor and support undergrad and postgraduate students on research projects within the laboratory setting.
7. Methodical approach to project management and meticulous in terms of experimental procedures and record keeping.
8. Willingness to contribute to the School and project outreach activities in a professional manner.
9. Evidence of strong interest in working in a dynamic research environment, and a strong self- motivation to succeed within a competitive research field.
10. Strong analytical and problem solving skills.
11. Ability to assess and organise resources.
12. Ability to logically conceptualise and summarise the research findings and data.
13. Ability to interact with research colleagues and support staff.
14. Ability to analyse and communicate effectively.
15. Strong ability to work independently from own initiative.
16. Willing to conduct animal scientific procedures where necessary.
17. Willing to travel to support the dissemination activities at meetings / workshops in UK/Sri Lanka.

DESIRABLE CRITERIA:

1. Hold a personal NI / UK Home Office animal license.
2. Experience in flow cytometry, microfluidics, nanoprinting, microarray designs.
3. Experience in working with animals.

4. Practical experience in the validation of analytical methods.
5. Experience in Standard Molecular Biology Techniques (RT-PCR, Western Blots etc.).
6. Interest in teaching, contribution to training staff and partners in techniques.
7. Knowledge of report / grant writing for funding bodies.
8. Experience of outreach and networking.
9. Previous experience in multicentre UK/international research projects.
10. Experience of presenting results in front of peers, meetings or conferences.
11. Experience of publishing research in journals or media.