Candidate Information

Position: Radiocarbon Accelerator Mass Spectrometry (AMS) Unit Manager
School/Department: Geography, Archaeology & Palaeoecology
Reference: 23/111426
Closing Date: Monday 27 November 2023
Salary: £46,497 per annum
Anticipated Interview Date: Wednesday 13 December 2023

JOB PURPOSE:

The post holder will play a major leadership role in the direction of 14CHRONO's AMS facility, managing technical developments and deputising/assisting the Centre Director. The post holder will lead upgrades to systems such as the AMS and Ramped Pyrolysis Oxidation rig, as well as oversee the quality control and maintenance of standards across 14CHRONO's output of radiocarbon and IRMS measurements. The post holder will lead internal and external archaeological research collaborations requiring radiocarbon measurements and leading to high-impact research outputs. They will manage and develop the unit so that it enhances ongoing research programmes in line with the Faculty's research strategy. They will contribute to strategic planning to ensure the long-term maintenance and expansion of the unit.

MAJOR DUTIES:

Teaching:

1. Contribute to the work of the Faculty through limited teaching and associated tasks within the areas of expertise of Radiocarbon Accelerator Mass Spectrometry, which will include assistance with the supervision of research projects of undergraduate and post-graduate students, and advising staff and students on techniques.
2. Organise educational events related to the 14CHRONO’s AMS facility, e.g. delivering workshops, user forums, lectures, training courses, seminars, or outreach events. This will include development and delivery of 14C AMS-specific lectures to ensure users are kept up to date with new developments in the field.
3. Contribute to lectures and practicals for Climate Change MSc.

Research:

1. Develop and manage the Radiocarbon Accelerator Mass Spectrometry (AMS) Unit within the context of a broad, faculty-based research strategy, by managing and undertaking high-level scientific activities appropriate to the remit of the unit which maximise the capability for research and related activities, thereby raising the research output and grant income profile for a range of programmes within the faculty.
2. Lead archaeological research collaborations requiring radiocarbon dates.
3. Proactively engage and develop links with relevant research groups, industries and external bodies such as heritage groups, to create opportunities for technology transfer and future research projects.
4. Lead on the upgrade of the MICADAS AMS system to include a gas interface for radiocarbon dating very small samples and develop collaborative research for its application.
5. Lead on the further development and application of the Ramped Pyrolysis Oxidation system for research.
6. Deliver and sustain an associated research activity leading to a high quality (>=3.0*) research output profile.
7. Identify and develop opportunities to develop impact case studies arising from research.
8. Disseminate research findings at appropriate national and international events and conferences.
9. Within research projects, take the lead in setting research objectives and programme of implementation.
10. Direct, coach and develop more junior research staff and technical support where appropriate.
11. Ensure that research projects are completed on time and within budget.

Administration/Contribution to the Community:

1. Assist Centre Director in financial forecasts and strategic planning.
2. Serve on 14CHRONO Centre steering group.

3. Contribute to the School's outreach strategy by developing external links.
4. Contribute to the AMS Facilities development by establishing strong links with appropriate internal and external stakeholders and help to maintain the Centre's international reputation through presentations, webinars, open-source contributions and demonstrations to visiting companies and researchers from around the world.
5. Carry out designated administrative duties.

ESSENTIAL CRITERIA:

1. Graduate or Postgraduate Degree in Physics.
2. PhD in Archaeology & Paleoecology or related field.
3. Broad range of relevant research experience with evidence of a high level of scientific attainment (such as quality publications).
4. Demonstrable experience of developing new research methodologies and implementing new approaches, techniques and methods relevant to Radiocarbon Accelerator Mass Spectrometry (AMS).
5. Specific relevant management experience to include:
   - Management of technical team.
   - Project management and working in large multi-disciplinary projects.
   - Resource budget management.
   - Business development, including writing business plans and tender applications as part of a team.
6. Demonstrated expertise in AMS operation, maintenance and upgrades with extensive experience.
7. Experience in electronics trouble-shooting.
8. Demonstrable experience of overseeing laboratory upgrades and installation of new analytical equipment.
9. Knowledge of radiocarbon dating and calibration.
10. Knowledge of material sciences with application to radiocarbon analyses.
11. Demonstrated expertise in development, testing and application of ramped pyrolysis/oxidation system for thermal separation of samples.
12. Experience in developing or using LabView software for device control.
13. Experience performing original research, demonstrated through original publications in top-tier journals, and conference papers and presentations.
14. Teaching experience in archaeological science, archaeology and environmental topics.
15. Experience working with or developing heritage or archaeological collaborative projects/programmes.
16. Ability to interact with key stakeholders independently or as a leader of a defined section in a project.
17. Demonstrable ability to deliver work to agreed deadlines under pressure.
18. Skills in managing and motivating staff.
19. Ability to communicate complex information effectively.
20. Ability to manage resources.
21. Demonstrable intellectual ability.
22. Ability to supervise work of others in research team.
23. Must be prepared to work outside of normal working hours when required.
24. Must be prepared to travel to engage with external stakeholders.

DESIRABLE CRITERIA:

1. Experience of working in collaboration with heritage stakeholders.
2. Experience in maintenance and operation of MICADAS AMS systems.
3. Experience with MySQL database.
4. Experience with application of FTIR, XRD, XRF analysis.
5. Experience with mortar dating using radiocarbon.
6. Experience with developing new techniques for dating cultural artefacts.
7. Evidence of interest and engagement in education activities.
8. Experience of developing research methodologies and devising models, approaches, critiques and methods.