



**UNIVERSITY OF LINCOLN
JOB DESCRIPTION**

JOB TITLE	Research Assistant				
DEPARTMENT	Pharmacy/LIAT				
LOCATION	Lincoln Campuses				
JOB NUMBER	CHS071	GRADE	6	DATE	December 2023
REPORTS TO	Principal Investigator				

CONTEXT

The University of Lincoln is looking to appoint a Research Assistant to join the research groups at the School of Pharmacy and LIAT at the University of Lincoln. The postholder will be part of a research consortium of companies and RTOs funded by Innovate UK. The research project entitled "Decarbonising agriculture: Synergistic nitrogen-fixing bacteria and photocatalyst to maximise fertilizer efficiency and improve air quality" is designed to test a prototype combination of R-Leaf and bacteria to reduce synthetic nitrogen usage in crop production. Crop Intellect is the lead organisation, proprietor of R-Leaf technology. R-Leaf is a disruptive innovation that is sprayed onto crop canopies, where it captures atmospheric nitrogen pollution (NO_x) and converts it into nitrate using sunlight. This directly removes NO_x pollution from the atmosphere while reducing the use of synthetic N-fertiliser in agriculture. It further, breaks down N₂O into benign components resulting in reducing the incidence of climate change. Endophytes form symbiotic relationships with plants, where they fix atmospheric nitrogen and convert it into ammonia, which is then supplied to the plant in exchange for nutrients.

Experiments undertaken at the University of Lincoln will validate combinations of R-Leaf and bacteria for yield benefits and reduction of greenhouse gas emissions, as well as ensuring practicality of the prototype. The project aims to determine the amount of synthetic nitrogen fertiliser that can be replaced through application of a combination of R-Leaf and endophytes to wheat crop, and the dual environmental benefits stemming from the reduced synthetic nitrogen fertilizer use and the breakdown of the greenhouse gas N₂O.

JOB PURPOSE

The Research Assistant is responsible for conducting research on the project as directed by the Principal Investigator. This includes physically and functionally characterizing materials using advanced analytical methods such as X-ray diffraction, UV-visible transmission/reflection spectroscopy, and GCMS. Additionally, the assistant will conduct photocatalytic NO_x conversion testing.

The role involves collaborating with multidisciplinary teams, presenting regular updates, and publishing research findings in peer-reviewed journals. There is also an active involvement in attracting external research funding.

The Research Assistant will be conducting both field and laboratory research to improve crop productivity sustainably. This includes handling computerized data, natural specimens, and scientific equipment. The drafting of reports on research findings, experimental conclusions, and data analysis is also part of the responsibilities.

The ability to travel to other sites is desirable due to the necessity for field visits.

KEY RESPONSIBILITIES

Literature Surveys
To undertake literature surveys and other investigations of the state-of-the-art and to prepare reports as required.
Research
<p>To perform specified research under the direction and with advice from the Principal Investigator, to generate original knowledge, contribute to decisions about research direction, and to prepare reports on results, as required. The research assistant will not be expected to act as an independent researcher.</p> <p>Plan own day-to-day research activity within the context of the required research programme, exhibiting a high degree of autonomy.</p> <p>Contribute to the production of research outputs, including software, reports, papers and other publications, and preparation for and presentation at international research conferences.</p>
Liaison and Networking
<p>Liaise with internal and external collaborators, and with colleagues in the Department, maintaining positive and effective working relationships; this may include liaison with senior personnel in other organisations including collaborators, sponsors, and clients.</p> <p>Participate in internal research activities, including seminars, research meetings and continuous professional development activities.</p>
Teaching Support
If required, engage in teaching support activities, up to a maximum of six hours per week.
PhD
Where appropriate and agreed, register for and undertake a PhD or other specified research degree.

In addition to the above, undertake such duties as may reasonably be requested and that are commensurate with the nature and grade of the post.

ADDITIONAL INFORMATION

Key working relationships/networks	
Internal	External
<ul style="list-style-type: none"> • Principal Investigator • Other academic staff within the Department 	<ul style="list-style-type: none"> • Research collaborators • Sponsors and clients



**UNIVERSITY OF LINCOLN
PERSON SPECIFICATION**

JOB TITLE	Research Assistant	JOB NUMBER	CHS071
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Selection Criteria	Essential (E) or Desirable (D)	Where Evidenced Application (A) Interview (I) Presentation (P) References (R)
Qualifications:		
Honours degree in relevant subject (1 st , 2.1 or equivalent), and/or Masters degree	E	A
Experience:		
Some experience of relevant research methods	E	A/I
Experience specific to project/area, e.g. experimental methods	E	A/I
Skills and Knowledge:		
Knowledge specific to project/area	E	A/I
Ability to conduct original research under supervision in the subject area	E	A/I
Excellent written communication, including the ability to write reports and research outputs	E	A/I
Ability to prioritise own workload and work to specified deadlines under pressure	E	A/I
Ability to communicate complex subjects to students	E	A/I
Competencies and Personal Attributes:		
Flexible approach to workload	E	I
Ability to work on own and as part of a team	E	A/I
Enthusiasm and commitment	E	I

Essential Requirements are those, without which, a candidate would not be able to do the job. **Desirable Requirements** are those which would be useful for the post holder to possess and will be considered when more than one applicant meets the essential requirements.

Author	Taghread Hudaib	APBP	AH
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