

POSITION DESCRIPTION

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| Position Title: | Modelling Scientist, Environmental Water Research |
| Reporting To: | Group Manager, Environmental Research |
| Group: | Environmental Research |
| Location: | Lincoln (or Hamilton) |
| Status: | Permanent Full-time |
| Date: | June 2019 |
| Purpose of Position: | To lead innovative research on the modelling of water and contaminant fluxes in agricultural catchments in a government-funded research programme (2018-2023). In addition, this role will lead or contribute to the development of further research proposals and carry out research-based consultancy work. |

Company Information

Lincoln Agritech Limited (LAL) is a leading edge research and development company with a track record for applying new and innovative engineering and science technologies to support agriculture, industry and the environment. Our five research groups are:

Environmental – water quality. Supplying knowledge and tools that enable regional and central government and other stakeholders in land and water management to manage groundwater quality, nitrogen impacts and water allocation in a manner that safeguards a sustainable future for New Zealand’s water resources.

Sensing Technologies. We develop sensing technologies to improve decision making and attain competitive advantage through reducing costs and realising new revenue streams. There are four broad disciplines within the team:

- Optics and image processing, including artificial intelligence
- Electromagnetics
- Biotechnology
- Robotics, automation and process control

Precision Agriculture. Providing technologies and advice to enable efficient agricultural and horticultural production systems. Precision Ag is an agricultural management concept based on observing and responding to inter and intra-field variation. Applying inputs at the right time, in the right place in the right amounts.

IRRICADTM and Software. Designed by Lincoln Agritech, IRRICADTM, is a world leading computer software for designing pressurised irrigation systems. It is available in eight languages and has been exported globally since 1988. Our software consulting team have expertise in processing complex data to create simple visualisation tools and interactive dashboards.

New Materials. Creating new revenue opportunities for New Zealand’s primary sector and developing new functionalised high value materials for the coarse wool industry.

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LAL is a 100% subsidiary of Lincoln University and are based on campus at Lincoln University, 20 km west of Christchurch, New Zealand. The North Island office is located on the Ruakura Research Campus in Hamilton, New Zealand.

Key Responsibilities

Science and Research & Development

- Conduct own R&D work with a strong focus on the analysis and modelling of water and contaminant fluxes in agricultural landscapes.
- Development of modelling approaches and tools that fit the purpose as well as the spatial and temporal scale of the project concerned.
- Ensure the modelling forms an integral part of the overall project, with iterative steps in the measurement – modelling sequence.
- Ensure close collaboration with other team members with modelling expertise, both within Lincoln Agritech as well as with external team members.
- Scientifically guiding staff of a broader team of motivated scientists and engineers at LAL and other project team members in joint projects that aim to understand and quantify water and contaminant fluxes in agricultural landscapes.
- Support advancing the science on water fluxes and contaminant transport and transformation by publishing research findings in appropriate journals and industry publications or presenting at national and international science events.

Managing Research & Development

- Plan, design and execute research and development and apply good-practice project management in the execution, including monitoring project budgets.
- Work closely with clients and stakeholders to maximise the uptake of research outputs, to effect beneficial outcomes for clients and the application sectors.
- Work collaboratively with project team members and external researchers, contractors and related stakeholders.
- Ensure successful research proposals, contracts and related documents are in place and stored for all projects.
- Contribute to the profitability of the company by completing projects on time within budget, and to the satisfaction of clients.

Research and Commercial Funding

- Identify potential R&D projects and research funding from both public and private stakeholders.
- Work alongside the Group Manager when required to apply for funding.
- Write or assist in writing project proposals and bids for programmes of the New Zealand Ministry of Business Innovation and Employment (MBIE) and other government programmes such as the Ministry of Primary Industries (MPI) to obtain funding for national and international R&D work.
- Actively pursue and maintain informative and collaborative relationships with research agencies, Government and Local Government Authorities/Agencies and potential funders.

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Technical Accountability

- Advance the Environmental Group's technical capability by spearheading the group's aim to develop and apply a wide range of fit-for-purpose software tools and modelling techniques in the realm of land and water management.
- Support and advance the Environmental Group's methods in statistics and data analytics, desirable.
- Assist with the development of research direction and plans to enhance the scientific quality and relevance to New Zealand of the Environmental Group's research and development work.

Reporting and Administration

- Provide reports to the Group Manager as requested.
- Complete all funding applications in the required timeframes.
- Assist with information of the Environmental Group for Board reporting and presentations.
- Participate in and contribute to the development of business plans and annual budgeting processes of the Environmental Group.

Health and Safety (H&S)

- Comply with all Lincoln Agritech Limited and Lincoln University health and safety policies and procedures.
- Report any identified hazard, and all workplace injuries and incidents in a timely manner.
- All legislative requirements in respect of workplace health and safety are complied with.
- Protective clothing/apparatus are used where appropriate.

Treaty of Waitangi

- Support Lincoln Agritech Limited to meet its obligations under the Treaty of Waitangi, an agreement made between Maori and the British Crown in 1840, with the three main principles of partnership, participation and protection underpinning the relationship between the New Zealand Government and Māori.
- Demonstrate, and encourages others to demonstrate, support for the company's commitment to the Treaty of Waitangi.

Other Duties as Required

- Perform other reasonable duties as agreed and requested by the Group Management team or CEO.
- Provide services to an agreed standard.
- The company's common goals are achieved collaboratively.
- Comply with all LAL and Lincoln University policies and procedures.
- Work will be required in other locations within New Zealand and from time to time internationally to perform the duties of the role.

Authorities of the Position

This position does not have responsibility for the supervision of staff.

This position has a delegated authority as per the delegated authority policy of Lincoln Agritech.

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Key Relationships

The appointee is expected to establish effective working relationships with:

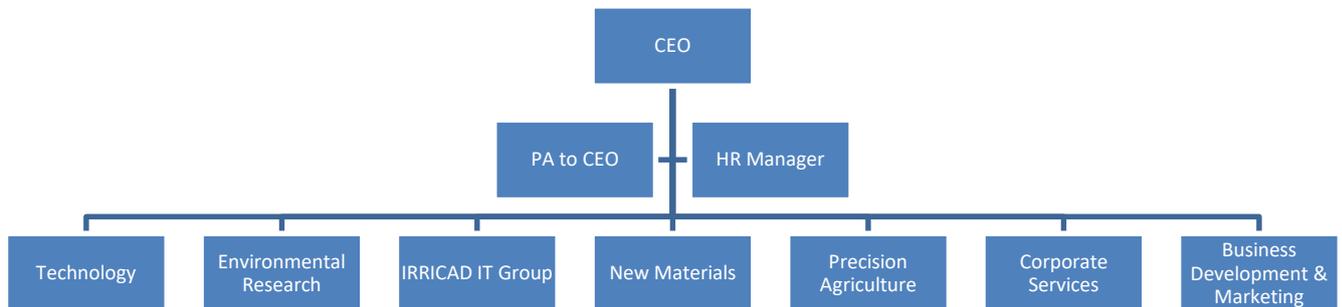
Internal

- The Group Manager Environmental Research
- Staff within the Environmental Group
- The CEO and Group Management team
- The wider Lincoln Agritech team
- Staff at Lincoln University, as required

External

- Research-relevant scientific communities: individuals and organisations
- Funding Organisations
- Clients
- Farmers, growers and other land based stakeholders
- Specialist external agencies and consultants
- Contractors and sub-contractors
- Professional bodies
- Local and regional councils
- Relevant external suppliers

Organisational Context



Key Capabilities

Qualification

- A PhD in Hydrology, Earth Sciences, Environmental Sciences, or similar.
- Proven track record in scientific and technical achievements.
- The ability to legally work in New Zealand.
- Current drivers licence preferred.

Experience

- Five years' proven experience in establishing, conducting and managing independent and excellent research and development.
- Experience working collaboratively in a team environment.
- Experience working in a commercial environment, desirable.

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Technical Skills

- Capability to quantitatively analyse all components of the hydrological cycle.
- Ability to develop conceptual groundwater models based on assessment of various relevant information sources (climate, hydrogeology, geophysics etc.).
- Knowledge to carry out fit-for-purpose soil water balance and vadose zone transport modelling.
- Development, calibration and uncertainty analysis of numerical groundwater models.
- Construction of groundwater models that adequately simulate surface water-groundwater exchanges.
- Techniques to coherently analyse and model water fluxes in the unsaturated zone, saturated zone, or surface water continuum at the catchment and sub-catchment scales.
- Ability to develop or adopt innovative modelling approaches in response to specific hydrological and/or hydrogeochemical research questions.
- Programming/scripting capability (e.g. Python, C++) to enable development of custom-made solutions to research questions.
- Ability to address complex research questions collaboratively in a multi-disciplinary team.
- GIS, databases, statistics, geostatistics desirable.
- Ability to communicate research concepts and results effectively to peers and stakeholders.

Personal Attributes

- Good emotional intelligence.
- Sound attention to detail.
- Commitment to work collaboratively in a multidisciplinary team.
- Acts with integrity and honesty at all times.
- As a technical expert, develop the technical capability of the Group.

Key Competencies

Collaboration

- Provide help and support to others readily.
- Be respectful, courteous and polite towards others.
- Value the opinions and ideas of others.
- State personal opinions and areas of disagreement tactfully.
- Support group decisions following the team consensus.
- Participate in Group meetings and team interactions.

Drive for Results

- Deliver own tasks and work to agreed timescales and quality standards, checking for errors and mistakes.
- Approach tasks and work in a systematic and organised manner.
- Take initiative within scope of authority.
- Demonstrate persistence and perseverance to achieve goals.
- Overcome barriers standing in the way of goal achievement.
- Take personal accountability for delivery against targets and objectives.

Innovation and Change

- Demonstrate an openness to new methods, ideas, or approaches and being positive towards change.
- Improve efficiency and productivity in own work area and role.
- Collaborate effectively in unstructured or dynamic environments.

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- Take on new challenges or tasks at short notice.

Customer-Centricity

- Provide a prompt, professional and timely service to customers, stakeholders and colleagues.
- Listen to customers, stakeholders and colleagues to understand their needs.
- Address questions and feedback from customers, stakeholders and colleagues.
- Use open and probing questions to better understand customer, stakeholder and colleague needs and objectives.
- Build rapport with customers, stakeholders and colleagues, establishing trust and open communication.
- Demonstrate empathy and understanding of customers, stakeholders and colleagues.

Communication

- Communicate clearly and accurately in writing.
- Speak with confidence and clarity.
- Provide clear information and explanations.
- Share a different point of view or perspective.
- Balance speaking and listening, taking care not to interrupt or speak over people.

Decision Making

- Use verbal sources of information making accurate decisions and sound judgments.
- Use numerical sources of information making accurate decisions and sound judgments.
- Identify problems successfully.
- Consider a range of options before making a decision.
- Demonstrate sound judgment based on logic and fact.
- Question assumptions and probe for further information.
- Produce workable solutions to problems encountered in their work.