Ecological/Ecotoxicological Modeller (Postdoctoral Research Associate)

Environment and Georgraphy

Closing date: 14 January 2019

Interview date: To Be Confirmed

Vacancy reference: 7171
The Department of Environment & Geography at the University of York is working with NERC’s Centre for Ecology & Hydrology (CEH) in Wallingford to investigate classic and temporal mixture synergism in terrestrial ecosystems. Our UKRI/NERC funded project will use toxicokinetic and toxicodynamic analysis, dynamic energy budget theory and community ecology to develop a new integrated approach for predicting mixture effects of pesticides. The role of this post in the project is to undertake the ecotoxicological modelling. For this exciting collaborative research the University of York are, therefore, seeking an Ecological/Ecotoxicological Modeller to be appointed on a 40 month contract as a postdoctoral research associate. The individual will work at CEH in Wallingford for the duration of the post, alongside a team of ecotoxicologists and ecologists involved in this large multi-partner project.

The aim is to develop state-of-the-art physiological models that will place underlying mixture toxicity mechanisms within a predictive toxicokinetic-toxicodynamic framework linking organism physiology to effects on life-history. Specifically the individual will develop dynamic energy budget (DEB) and associated toxicokinetic-toxicodynamic models and apply them to predict joint effects of multiple pesticides on terrestrial invertebrates.
Main purpose of the role

- To conduct research under the supervision of senior colleagues and to contribute to the production of research.
- To work collaboratively with other project team members in an integrated ecotoxicological research project to develop experimental plans, analyse the resulting data and to produce research articles and other research outputs.
- To specifically develop dynamic energy budget (DEB) and associated toxicokinetic-toxicodynamic models and apply them to predict joint effects of multiple pesticides on terrestrial invertebrates.

Key responsibilities (Role holders will be required to undertake some or all of the duties below)

- Development of ecological and toxicokinetic-toxicodynamic models using experimental data from ecotoxicological studies.
- Quantitative data analysis & integration of experimental data across scales.
- Design of experimental protocols for model parameterisation including working closely with experimental ecotoxicologist to match data requirements to experimental protocols.
- To conduct individual and collaborative research projects, duties to include: analysis and interpretation of research data; use of appropriate research techniques and methods; writing up of research results and dissemination through publications, seminar and conference presentations and public engagement and outreach activities; contributing to the identification of possible new areas of research.
- To participate in project and program meeting and to produce research papers other project outputs that maximise the impacts of the overall research project and NERC Emerging Risks of Chemicals in the Environment program.
- To provide guidance to other staff and students, as required, as well as participate in the organisation of experiments and the integration of project data and outputs.
- To develop and initiate collaborative working internally and externally including: the building of internal contacts and participation in internal networks; collaboration with colleagues on joint projects as required; participation in and identification of external networks in order to share information and identify potential opportunities for collaboration and possible sources of funding; attendance at and contribution to relevant meetings.
## PERSON SPECIFICATION

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<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tr>
<td>First degree in mathematics, physics, biology, chemistry or environmental science</td>
<td>Essential</td>
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<tr>
<td>PhD in Biology, Chemistry, Physics or Environmental Science or equivalent experience</td>
<td>Essential</td>
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### Knowledge

- Knowledge in ecological modelling to engage in high quality research **Essential**
- Knowledge of a range of research techniques and methodologies **Essential**
- Has research expertise in an area that will complement and enhance the department’s research strategy and goals **Essential**
- Knowledge of ecological effects modelling **Desirable**
- Knowledge of toxicokinetic-toxicodynamic modelling **Desirable**
- Knowledge of bioenergetics modelling **Desirable**
- Knowledge of the ecology & physiology of terrestrial invertebrates **Desirable**
- Knowledge of ecotoxicology and chemical effects research **Desirable**

### Skills, abilities and competencies

- Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a range of media **Essential**
- Ability to write up research work for publication in high profile journals and engage in public dissemination **Essential**
- Ability to develop research objectives, projects and proposals for own and joint research, with the assistance of a mentor if required **Essential**
- Competency to conduct individual and collaborative research projects **Essential**
- Competency to make presentations at conferences or exhibit work in other appropriate events **Essential**
- Programming skills (e.g. Matlab) **Desirable**
- Expertise in experimental design and planning to support model parametrisation **Desirable**
- Knowledge of data analysis for ecotoxicological data-sets **Desirable**
## PERSON SPECIFICATION

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<th>Experience</th>
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<tr>
<td>Experience of carrying out both independent and collaborative research</td>
<td>Essential</td>
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<td>Experience of writing up research work for publication</td>
<td>Essential</td>
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<td>Ability to work as part of a team and also to work independently using own initiative</td>
<td>Essential</td>
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<th>Personal attributes</th>
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<tr>
<td>Attention to detail and commitment to high quality</td>
<td>Essential</td>
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<td>Collaborative ethos</td>
<td>Essential</td>
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<td>Interest in and enthusiasm for the subject matter of the project(s)</td>
<td>Essential</td>
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<td>Positive attitude to colleagues and students</td>
<td>Essential</td>
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<td>Willingness to work proactively with colleagues in other work areas/institutions</td>
<td>Essential</td>
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<td>Ability to plan and prioritise own work in order to meet deadlines, including using initiative to plan research programmes</td>
<td>Essential</td>
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<td>Commitment to personal development and updating of knowledge and skills</td>
<td>Essential</td>
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The Department of Environment and Geography at the University of York conducts world-leading research on topics of global environmental importance. The impact of our research in ecology and environmental science is ranked by the Times Higher Education as second in the UK and 17th in the world. Our research is highly interdisciplinary across the natural and social sciences, ranging from atmospheric chemistry to environmental economics and policy analysis. Our funding comes from numerous sources, including research councils, national and international government agencies, charities and industry.

The Postdoctoral research associate will be working on a NERC funded multi partner project in the Emerging Risks of Chemical in the Environment project and will be based at the Centre for Ecology & Hydrology (CEH) in Wallingford for the full duration of the post. CEH is a world-class research organisation focusing on land and freshwater ecosystems and their interaction with the atmosphere. Uniquely, CEH integrates UK-wide observation systems and curiosity driven research, from the smallest scale of genetic diversity to large-scale, whole-Earth systems. We work across disciplines and facilitate academic, public, private and voluntary sector partnerships. CEH’s extensive, long-term monitoring, analysis and modelling deliver UK and global environmental data,
THE UNIVERSITY

Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2018 it is the home of more than 17,000 students across more than 30 academic departments and research centres. Since opening over fifty years ago, we have become one of the world's leading universities and a member of the prestigious Russell Group.

We are consistently recognised as one of the leading Higher Education Institutes and are ranked 16th in the Times & Sunday Times league table (2017). The University of York has won six Times Higher Education (THE) Awards and five Queen’s Anniversary Prizes.

The University is proud of its association with Athena SWAN, holding 12 awards in support of gender equality, representation and success for all, with gold awards for Chemistry and Biology and a University-wide bronze award.

Of 154 universities that took part in the Research Excellence Framework (REF) in 2014, The University of York ranked 14th overall and 10th for the impact of our research. The University is consistently in the top ten UK research universities and attracts over £60m a year of funding from research alone.

Our vision is to make the University of York a world leader in the creation of knowledge through fundamental and applied research, the sharing of knowledge by teaching students from varied backgrounds and the application of knowledge for the health, prosperity and well-being of people and society.
Attractive workplace

Centred around the picturesque village of Heslington on the edge of the city of York, our colleges are set in an attractive landscaped campus. York enjoys a safe, friendly atmosphere with facilities including bars, shops, theatres and concert halls all within easy walking distance.

The University has undergone an unprecedented period of expansion and renewal since 2000. We have invested in twenty new buildings on the original campus and have completed the first and second phases of a £750m campus expansion. Our investment in new colleges, teaching and learning spaces, laboratories, research facilities and a new sports village mean there has never been a better time to join us.

During this period of change we’ve worked hard to retain our friendly, informal and collegiate atmosphere, which is important to our core values of inclusivity and interdisciplinarity.

We have a thriving international community and are committed to providing staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University is committed to promoting a diverse and inclusive community - a place where we can all be ourselves and succeed on merit. We offer a range of family friendly, inclusive employment policies, flexible working arrangements, staff engagement forums, campus facilities and services to support staff from different backgrounds.

For further information please visit our employee benefit pages
THE CITY AND THE REGION

The City of York

Internationally acclaimed for its rich heritage and historic architecture, York’s bustling streets are filled with visitors from all over the world. Within its medieval walls you will find the iconic gothic Minster, Clifford’s Tower and the Shambles - just a few of the many attractions.

But York isn’t just a great place to visit - it’s also a great place to live and work. While nourishing a vibrant cosmopolitan atmosphere, York still maintains the friendly sense of community unique to a small city.

Visit www.visityork.org for more information on the city of York.

Shopping, culture and entertainment

York boasts specialist and unique boutiques but also all the high street stores on its busy shopping streets. Alongside them you will find cinemas, theatres, an opera house, art galleries, a vast range of restaurants, live music venues and clubs. York is particularly renowned for its multitude of pubs and bars, from the modern to the medieval.

Housing and schools

Whether you choose to live close to the city, in one of the surrounding villages or further afield, you will find a wide range of housing within comfortable distance of York and the University. For families, the area has a range of excellent schools both in the state and independent sector.

Great location

York is one of Britain’s best-connected cities. Halfway between London and Edinburgh on the East Coast mainline, on intercity trains you can reach London King’s Cross in less than two hours and Edinburgh in two and a half hours. York is also well served by road links, and it is easily accessible from the A1, M1 and the M62.

For those travelling from overseas, Manchester Airport is two hours away and Heathrow Airport just three and a half. Flights from nearby Leeds Bradford Airport provide easy access to mainland Europe. By Eurostar from London St Pancras, Paris is just over six hours away.

Yorkshire

The Lonely Planet guide recently declared Yorkshire the third best region in the world to visit. There is something to cater to every taste, whether it be the rugged landscapes of the Moors or the Dales, the picturesque seaside towns of Scarborough and Robin Hoods Bay, the gothic architecture of Whitby or the vibrancy of cosmopolitan Leeds.
Apply online

- Go to https://jobs.york.ac.uk
- Find this job using reference 7171
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 14 January 2019

What will I need?

You will need to upload:

- your CV
- a letter describing how you meet the requirements of the job

You will also need details of 2 referees.

Help and assistance

Direct any informal queries to Dr Roman Ashauer (roman@ecotoxmodels.org) and Dr Dave Spurgeon (dasp@ceh.ac.uk)

If you have any questions about your application, contact the HR Services team:

recruitment@york.ac.uk
+44 (0)1904 324835