**Two Early Stage Researcher (PhD Student) positions in ecology and ecotoxicology.**

ESR 9: Linking individual and community level effects

ESR 13: Ecosystem services and risk assessment

Understanding the potentially negative impacts of chemicals on ecosystems is essential to managing them sustainably. In particular, we need to understand the effects of chemicals on the direct and indirect contributions that ecosystems make to human well-being (i.e. ecosystem services). To gain this understanding we need to move from simplistic approaches currently used in environmental risk assessment to more mechanistic and ecologically relevant understanding and approaches. A recent horizon-scanning project identified priority research questions for moving towards sustainable environmental quality, which included: How do sublethal effects alter individual fitness and propagate to the population and community levels? Biodiversity and ecosystem services: What are we trying to protect, where, when, why and how? (van den Brink et al 2018, Environ. Toxicol. Chem. 37, 2281-2295). These two Early Stage Researcher (ESR) positions will address both these priority research questions.

The ESR positions are based in the Department of Animal and Plant Sciences at the University of Sheffield (UK) and are part of PRORISK ([www.prorisk-itn.eu](http://www.prorisk-itn.eu)), a European Training Network funded by the European Union’s Horizon 2020 programme. The University of Sheffield is a research-intensive world top-100 university renowned for the excellence, impact and distinctiveness of its research-led learning and teaching ([www.sheffield.ac.uk](http://www.sheffield.ac.uk)). The Department of Animal and Plant Sciences is an international centre of excellence with world-class facilities and is ranked in the UK top 5 for research quality. The Department’s research focus is on understanding how organisms function, from the molecular level to their role in ecosystems, and it uses this understanding to address major environmental issues including pollution and nature conservation.

The PRORISK consortium comprises of 18 universities, research institutions, enterprises and partner organisations in 9 European countries and Canada creating a novel platform for training a network of ESRs in the field of advanced Environmental Risk Assessment (ERA). Research and training provided through PhD study, the PRORISK training programme and secondments in international multidisciplinary intersectoral teams in academia, industry and regulatory bodies, will enable ESRs to address exposure, ecotoxicology, ecosystem services, as well as assessment and modelling of risks and socio-economic impacts. The ESRs within PRORISK will gain synthetic skills allowing them to develop and implement innovative ERA concepts and tools to link the effects of chemicals at different levels of biological organization to ecosystem services and to determine the socio-economic values of related environmental impacts.

**Individual research project descriptions**

**ESR 9: Linking individual and community level effects**

This PhD project will use energy-budget, population and food-web models to extrapolate chemical-induced changes in feeding rate to population and community-level responses that underpin key ecosystem function and services. The project will apply existing and novel methods to assess the effects of chemicals on ecosystem service providers and their interactions in complex assemblages. The results from this project will contribute to the development of ecological production functions to translate effects measured on ecosystem service providers to ecosystem service delivery. The project will involve international collaboration with RIVM (Netherlands) on trait-based approaches, Aarhus University (Denmark) on dynamic energy budgets and Environmental Institute (Slovakia) on field methods and exposure assessment. The project will be supervised by Professor Lorraine Maltby and Professor Philip Warren.

**ESR 13: Ecosystem services and risk assessment**

This PhD project will undertake a systematic review of the applicability of current ecotoxicological methods for assessing the risk of chemicals and other stressors to ecosystem service delivery. It will explore the potential use of novel empirical and modelling approaches from ecology and ecotoxicology to address the limitations of current approaches. It will apply novel and current approaches to evaluate the risk of case study chemicals to ecosystem service delivery. The results from this project will contribute to the development of ecological production functions to translate effects measured on ecosystem service providers to ecosystem service delivery and to the development of a framework integrating risk assessment, ecosystem services and socio-economic information to inform management decisions. The project will involve international collaboration with the Technical University of Denmark on ecotoxicological damage modelling and the Environmental Institute in Slovakia on field methods and exposure assessment. The project will be supervised by Professor Philip Warren and Professor Lorraine Maltby.

**Eligibility criteria**

1. Applicants can be of any nationality
2. At the date of recruitment, applicants must not have a PhD and have less than 4 years of full-time equivalent research experience from the award of the degree that entitles them to undertake a doctorate.
3. Applicants must not have resided or carried out their main activity (work, studies, etc.) in the UK for more than 12 months in the 3 years immediately before the recruitment date. Short stays, such as holidays, are not taken into account.
4. Applicants must be highly motivated and have a BSc and a MSc or equivalent in ecology, environmental science, biology or a related discipline.
5. A good command of English language, with excellent oral and written skills is essential (i.e. overall International English Language Testing Service (IELTS) grade of 6.5 with a minimum of 6.0 in each component, or equivalent).
6. Applicants will be required to spend part of their project at other institutions in the PRORISK consortium.
7. These eligibility requirements are non-negotiable and ineligible applicants will not be considered.

**What we offer**

ESRs will:

* Receive a contract of employment as a full-time researcher for 36 months.
* Complete a comprehensive personalised career development programme, with targeted training measures and participate in a range of network events.
* Benefit from interdisciplinary cooperation and interaction within the network, providing them with the best preparation for a successful career in either academia or industry.
* Receive a salary in line with H2020-MSCA-ITN-2019 call. Additional allowances for mobility and family (if applicable) are also provided. Further information is available on [www.prorisk-itn.eu](http://www.prorisk-itn.eu).
* Have access to the state-of-the-art research infrastructure
* Become a member of vibrant research community.

**Application and selection process**

Applications must be submitted via the Postgraduate Online Application Form (<https://www.sheffield.ac.uk/postgradapplication/>). The deadline for applications is **February 28 2020**.

Applicants should provide the following information in their application in English:

1. Cover Letter, stating which PhD project you are applying for and detailing your motivation and background for applying for the specific PhD project. Please indicate if you have applied for other PRORISK PhD fellowships (possible to apply up to three positions; indicate the preferences).

2. A detailed CV including skills and publications if applicable.

3. All academic level certificates (BSc and MSc) including university grades itemized by each course. Foreign documents should be sent as certified English translations.

4. A synopsis of the BSc and MSc thesis if applicable, or any previous research project.

5. At least two professional referees (Name, address, telephone & email).

Short-listed applicants complying with the eligibility requirements will be invited for a Skype interview in **March 2020**. Positions are available from **1 July 2020**.