

## Research Experience Placement (REP) Scheme Project

The REP scheme offers funding to support summer placements for undergraduate students studying quantitative disciplines *outside of NERC's scientific remit*, during which they will undertake research within the environmental sciences.

<b>Project Supervisors:</b>
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<a href="#">Dr Shirley Coleman</a> & Mr Dan Walker, School of Mathematics, Statistics and Physics, Newcastle University
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<b>Project Title:</b>
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Data analytics to support transition to zero carbon in facilities management
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<b>Project Description:</b>
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<p>Shirley Coleman is an academic supervisor and Dan Walker is a research associate in a Knowledge Transfer Partnership (KTP) with Engie. Engie is a large energy and services company with over 17,000 employees in the UK and over 160,000 employees globally. In the UK business unit, Engie has many partnerships with local authorities to manage assets in office buildings, hospitals and schools. One of the company's key objectives is the transition to zero carbon and the facilities management sector must meet short-term and long-term company goals with respect to the conversion of its fleet of vans to electric vehicles. This project will be to support Engie's Data Science and Innovation team in collaboration with the National Innovation Centre for Data (NICD) to produce a scalable model that can advise on the required infrastructure to make this change, based on regional geospatial data.</p>
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<p>The research experience placement student will be analysing existing fleet van data as well as collecting further data where necessary for input into a model. Support is required from the student in exploratory data analysis, including producing dashboards with tables and graphical representations of the data, and basic statistical analysis such as correlations, regression and time series. The student will also assist the data science professionals at NICD in the development of the model as well as communicating results and methods regularly with stakeholders at Engie. The objectives of the project are: to obtain a reliable set of relevant data including distances travelled, fuel consumption, commonly visited sites and purpose of travel; to provide support of data science applications by testing validity of assumptions and interpretations; to produce reports for non-specialists describing the outcomes and recommendations.</p>
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<p>The project is separate from the KTP and stands alone from the KTP work plan.</p>
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<b>Project Timeframe:</b>
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6 weeks in summer vacation. Start date to be agreed.
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