National Higher Education STEM Programme

Summary of successful Outreach Projects

(Developed on the learning of the London Engineering Project)

1 Engineering Education Scheme

Region	Wales
Project Leader	Alison Braddock
Institute	University of Swansea/EESW
Academy Advisor	Jenny Young, Project Manager – National HE STEM Programme (Engineering), The Royal Academy of Engineering

Summary of the project:

This 1-year project builds on previous successes in the region, such as the Engineering Education Scheme Wales. It seeks to extend and add value to existing activities, such as EESW and Primary Bloodhound Challenge, to increase interest in engineering. It also aims to provide better progression and continuity through the various phases of education into HE. HE student ambassadors and staff will be directly trained and involved in increasing and widening participation in STEM subjects, whether through STEM events, school support or employer visits.

The main outcomes will be to:

- Show students that taking STEM, specifically engineering subjects, is important to the future prosperity of Wales
- Ensure engineering is a subject that is of strategic importance to universities in Wales
- Encourage more pupils into HE engineering courses
- Widen the participation of pupils from all socio-economic backgrounds
- Encourage more females into engineering as a career

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2 Building capacity of engineering lecturers to take part in engineering outreach from HEIs in the region

Region	Midlands & East Anglia
Project Leader	David Dyke
Institute	University of Wolverhampton
Academy Advisor	Jenny Young, Project Manager – National HE STEM Programme (Engineering), The Royal Academy of Engineering

Summary of the project:

This 2-year project will encourage engineering lecturers to engage with or lead engineering outreach within their HEI. This will be approached in 2 ways: firstly through focus groups to look at existing success within the regional HEIs, identify effective practice, current motivators and capture baseline status; secondly to develop, pilot and rollout an outreach support package and staff development resource pack that can be used in all HEIs. Ultimately the HEIs will deliver outreach activities to schools and colleges.

This project will be led by University of Wolverhampton but will involve a number of HEIs within the region as well as other organisations such as STEMNET, local EBPs and relevant commercial organisations. As well as the outreach support pack and staff development resource pack, tangible project outcomes will be an increased number of trained and registered STEM Ambassadors and a greater level of outreach delivery.

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3 Using student ambassadors and HEIs to support local STEM clubs

Region	South East and London
Project Leader	Prof. Averil McDonald
Institute	University of Southampton
Academy Advisor	Jenny Young, Project Manager – National HE STEM Programme (Engineering), The Royal Academy of Engineering

Summary of the project:

This 2-year project aims to disseminate effective practice of the LEP's club leader training to encourage local schools to set up their own Science and Engineering Club. This will be tackled by LSBU offering a train the trainers' event, for regional HEIs to learn how to run club leader information sessions, then HEIs in turn offering information sessions to interested local teachers. Student ambassadors will be recruited, trained and utilised to support clubs in schools. Clubs will further be encouraged to enter their projects to future Big Bang Fairs and/or submitted for CREST nomination.

The project will be led by the University of Southampton. LSBU will lead the 'train the trainers' element and a number of regional HEIs will be involved. Tangible outcomes will include increased numbers of HEIs holding club leader information sessions, more student ambassadors and more STEM clubs established and supported in local schools.

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4 Disseminating student ambassador top-up training within region

Region	Yorkshire and North East
Project Leader	Nazira Karodia
Institute	University of Bradford
Academy Advisor	Jenny Young, Project Manager – National HE STEM Programme (Engineering), The Royal Academy of Engineering

Summary of the project:

This 2-year project focuses on increasing the effectiveness of student ambassadors through improved training. It builds on the findings of the LEP, which showed that student ambassadors were particularly effective in challenging school students' preconceptions of engineering, especially within under-represented groups. The LEP-developed training specifically extends an ambassador's skills to engage with under-represented groups effectively.

The project outputs will be:

- A 'train the trainer' event for HEIs to attend, addressing effective top-up training
- Annual top-up training for ambassadors within each HEI
- This project will be led by University of Bradford, with a number of regional HEIs taking part. UKRC will also provide support and expertise around gender awareness training.

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5 Primary Engineering Outreach – Professor Fluffy Explores Engineering

Region	North West
Project Leader	Patricia Conning
Institute	University of Liverpool
Academy Advisor	Jenny Young, Project Manager – National HE STEM Programme (Engineering), The Royal Academy of Engineering

Summary of the project:

This 2-year project builds on the success of the National Primary Network and the LEP-funded 'Professor Fluffy Explores Engineering' module, using the wide experience within the University of Liverpool in delivering primary outreach. By rolling out effective practice, and by involving more HEIs in the region, a greater level of primary school intervention (ages 9-11) can be achieved. Staff within HEIs (academic or WP staff) will be trained and supported by University of Liverpool to run the Prof. Fluffy module for their local primary schools.

The project outputs will be:

- 'Train the trainer' event for Professor Fluffy module
- Ambassador recruitment, training and support at each HEI

The University of Liverpool will lead the project, with involvement from a number of HEIs in the region. Other organisations such as STEMNET and the local SLC may also contribute.