Social Responsibility & Sustainability

at The University of Edinburgh

THE UNIVERSITY of EDINBURGH

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Social Responsibility and Sustainability

What do we do?

Climate change

Sustainable estates

Sustainable procurement, fair trade and supply chains

Responsible investment

SRS in learning and teaching

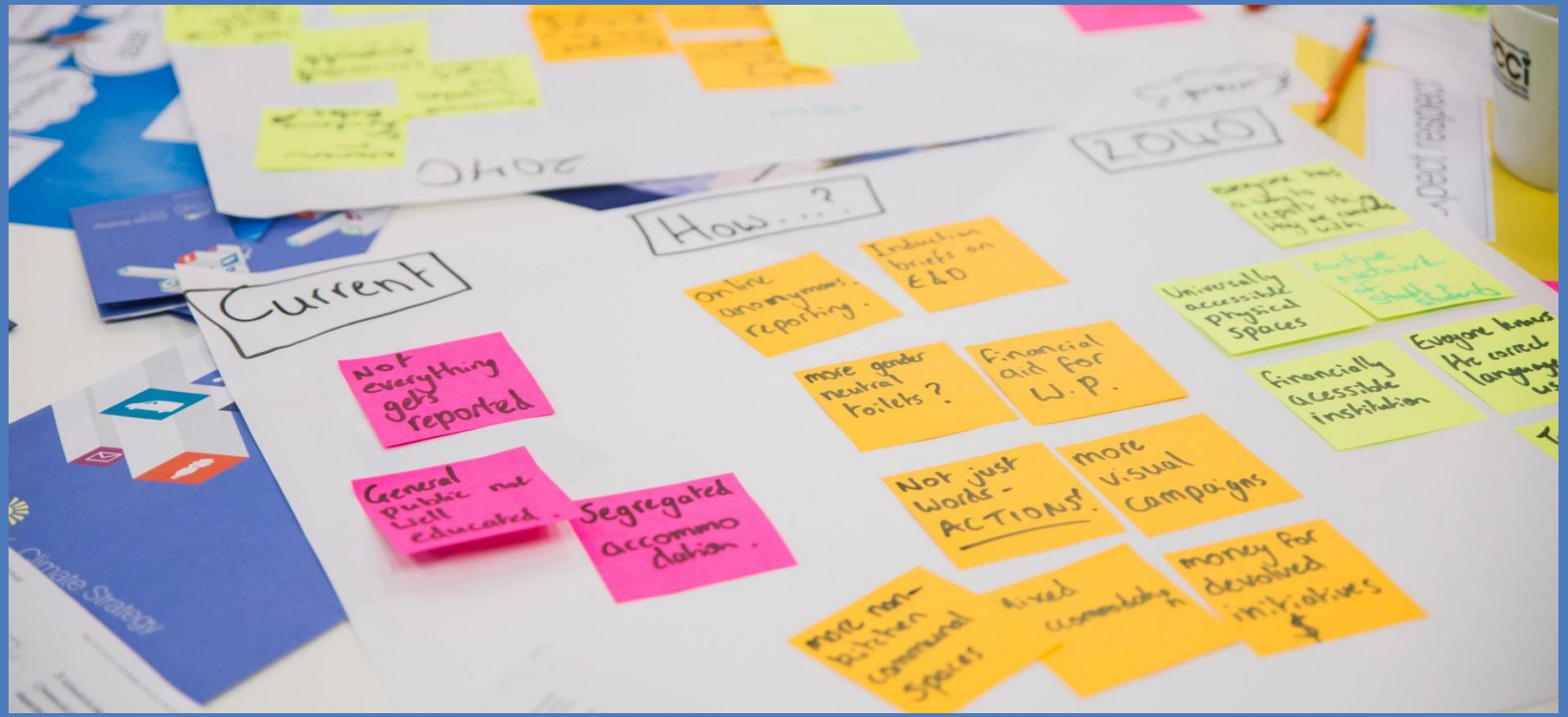
Fair employer and equality and diversity issues

Resource use and circular economy

Community engagement

Public engagement

What is a living lab?



Degree: MSc in Environmental Sustainability

Course: Case Studies in Sustainable Development

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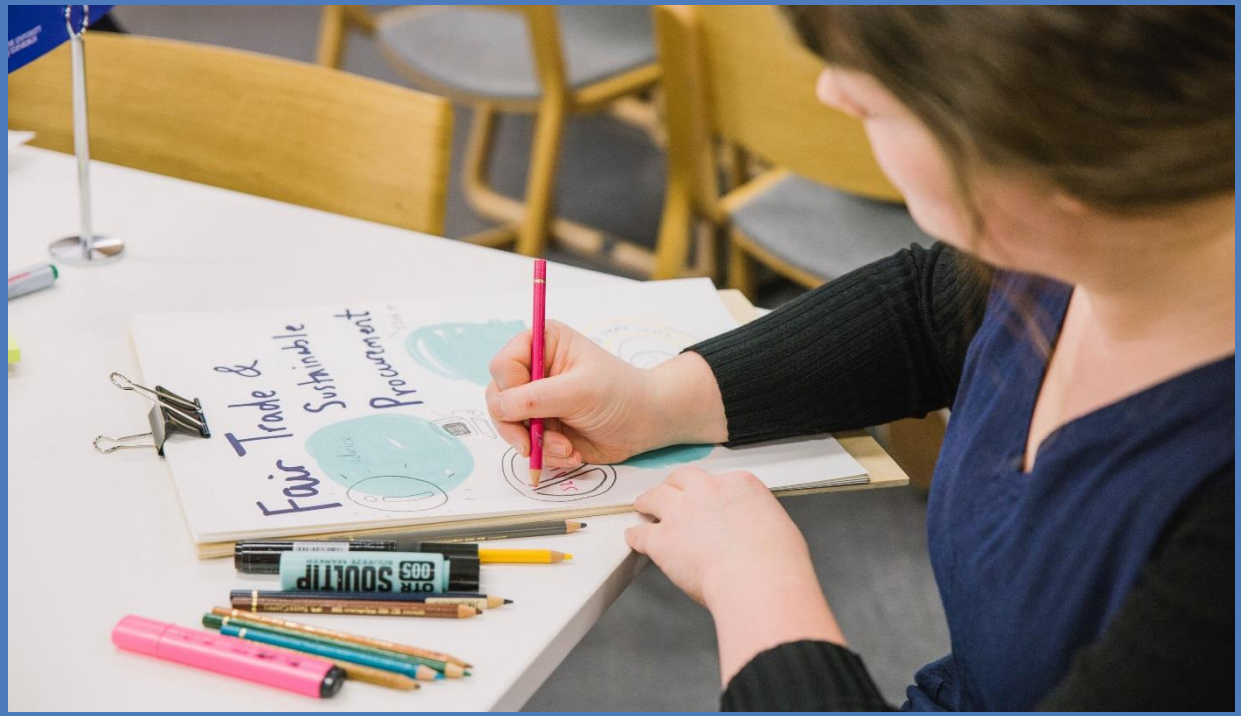
The Living Lab element



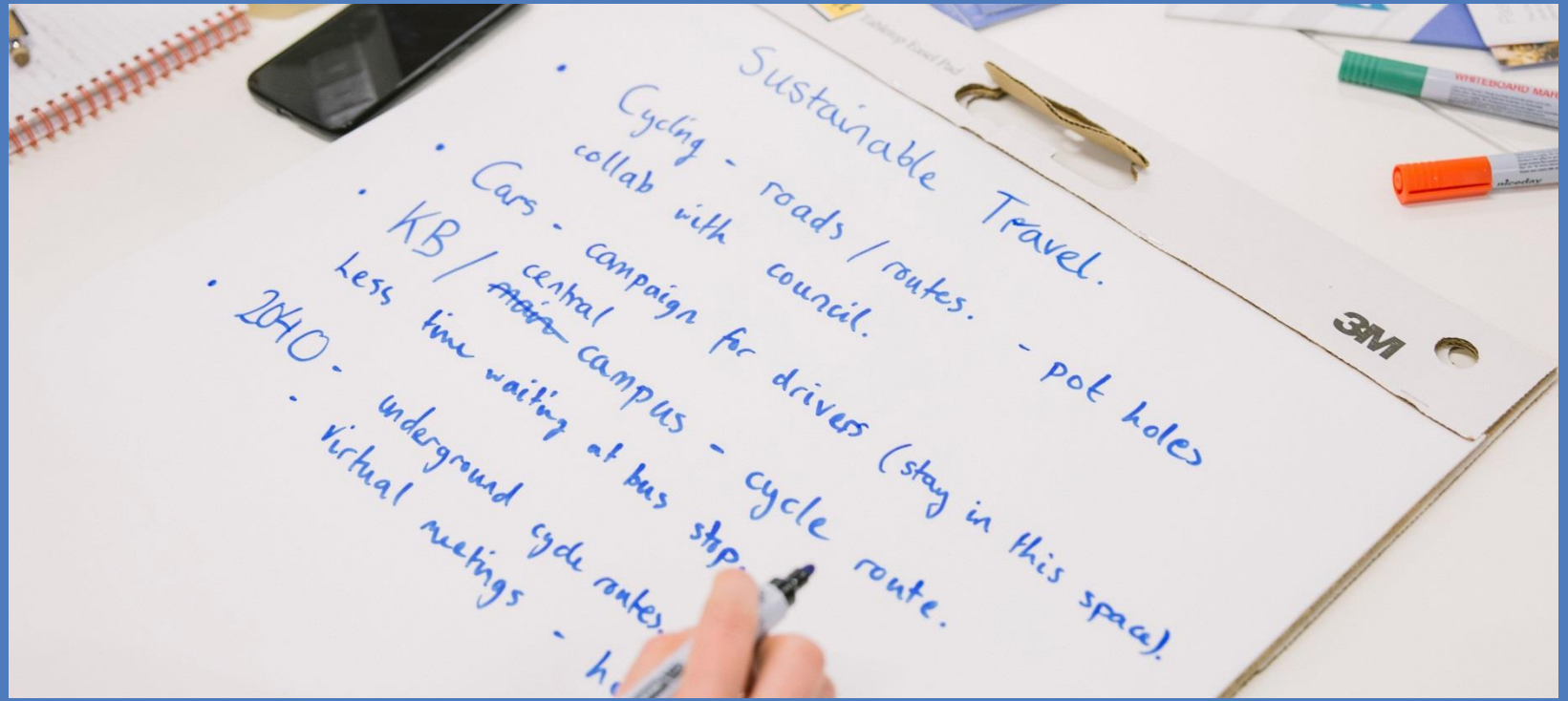
Living Lab topics

2018 research questions

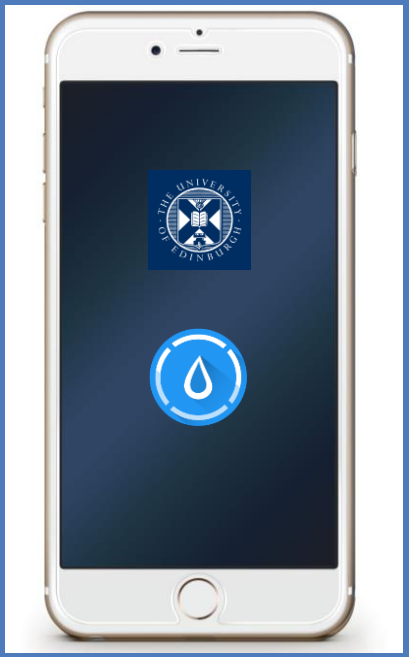
How can we reduce plastic waste in our supply chains?

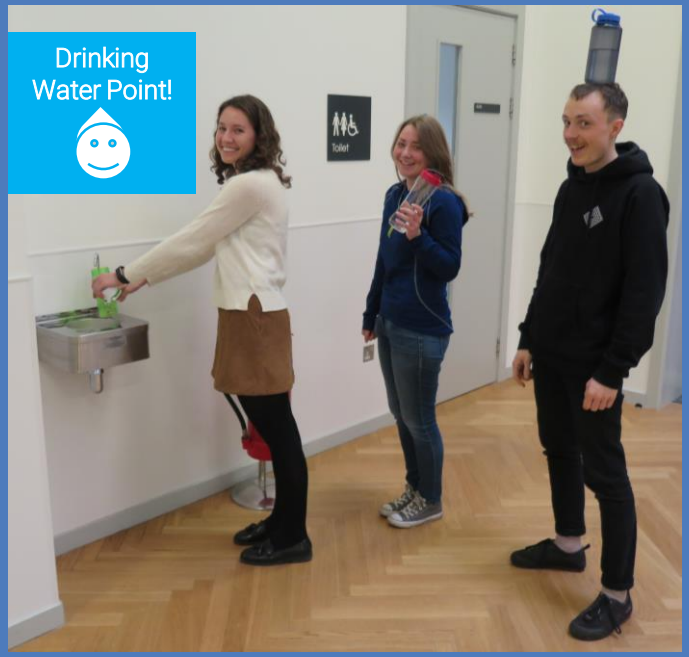
What is best practice when reporting on the carbon emissions of commuting?

Research process = skills development



E.g. Encouraging the use of drinking water points on campus





E.g. Glass vs Plastic in labs

Making recommendations

Exam no. B100908, April 2018

Glass vs. Plastic

Examining sustainability in University of Edinburgh laboratories

Key Points

- Single-use plastics in research laboratories are a significant source of emissions and waste for the University of Edinburgh
- Barriers to reducing single-use items include communication issues, need for further data, concerns over safety, and general lack of interest
- These barriers can be addressed through further research and outreach undertaken by the Department for Social Responsibility and Sustainability (DSRS)

Introduction

There are over 1000 research laboratories in the University of Edinburgh[1]. Each laboratory has an opportunity to contribute to the sustainability of the University through ordering, usage, and waste disposal behaviors. However, most laboratories are currently using large amounts of single-use plastic, thereby creating a significant source of waste and emissions within the University.

Single-use plastics – items packaged and intended for disposal after one use – are increasingly common and have been identified as important targets for improving environmental impacts of laboratories[2]. These items, which replaced traditional reusable plastic and glass, have greatly increased the carbon dioxide equivalent (CO_2e) emissions connected to research laboratories. While there are many variables, such as type of plastic or glass and location of manufacture, generating 1 ton of plastic emits approximately 3.5 times more CO_2e than generating the same amount of glass[3]. Further, single-use plastic generates exponentially larger amounts of emissions due to the lack of re-use and continuously growing demand.

This brief will examine the barriers for reducing single-use plastic in University laboratories and provide recommendations for the DSRS to promote reusable alternatives.

Methods

Initial research was conducted through a comprehensive literature review to compare plastic and glass lifecycles. This was followed by interviews with four laboratory managers and four building managers to better understand current glass and plastic usage and disposal. This project also utilized a "case study" of a laboratory at University College London which has successfully reduced single-use plastic consumption.

WHERE HAVE ALL THE FOUNTAINS GONE?

The Need for Signposting Drinking Water Points at the University of Edinburgh

Persuasive Brief • April 2018

Background

The UK uses an average 7.7 billion plastic water bottles per year. Approximately half of these bottles become litter, landfill, or are incinerated every day[1]. This generation of waste contributes to the global plastic pollution problem. Moreover, the production of plastic water bottles requires the consumption of finite resources and causes CO_2 emissions. Processing, packaging, and transportation of a single plastic bottle use 3 liters of water and ¼ liter of oil, and release over 160g of CO_2[2]. Recent reports have also suggested that potential microplastic contamination in water bottles can lead to health risks for humans[3].

Universities across the UK are addressing this plastic water bottle issue through the provision of drinking water points. These fountains are a cheaper, safer, and more sustainable source of water. This brief presents an overview of the University of Edinburgh's water policy and current trends in drinking water fountain use. It then provides recommendations for increasing the use of fountains to support the objectives of the water policy.

Drinking Water Policy (2017)

The University is required under the Workplace (Health, Safety, and Welfare) Regulations 1992 to provide an adequate supply of clean drinking water. In accordance with this regulation, the University has developed a water policy to deliver accessible and sustainable drinking water. The policy commits to establishing a sufficient number of drinking water points across campus that are convenient in location and clearly identifiable.

Trends in Drinking Water Fountain Use

Staff and students were surveyed to gather data on drinking water habits at the University. Of the 71 respondents, 62% felt that there was not adequate access to free water on the University premises. Furthermore, 32% of respondents indicated that they did not typically use the drinking water fountains on campus. They attributed difficulties in locating the drinking water points as the primary barrier to using them (Figure 1).

Key Messages

- Annual consumption of plastic water bottles in the UK continues to threaten the condition of the global environment and potentially human health.

CLOSING THE LOOP

TOWARDS A PLASTIC-FREE UNIVERSITY

Social Responsibility and Sustainability

KEY RECOMMENDATIONS

- Set a target to phase out all single-use plastic within the university
- Implement circular scheme, as opposed to choosing compostable alternatives
- Implement a dishwashing system across the entire University

Each year, more than 8 millions tonnes of plastic waste end up in the oceans, with significant environmental implications. Hundreds of thousands of marine animals are killed every year by plastics, and it is expected that by 2050, there will be more plastic than fish in the oceans. In addition, plastic is produced from oil, accounting for 6% of global oil consumption, equivalent to the global aviation sector.

Every day, large amounts of highly polluting single-use plastics are utilised within the University of Edinburgh, contributing to global plastic pollution and waste of resources. This is of particular concern in Scotland, given the country's historical efforts and ambitions in terms of waste and emissions reduction..

THE CIRCULAR ECONOMY MODEL

A circular economy is a system of waste management agenda. According to the latter, waste prevention and reuse strategies should be implemented to reduce recycling and recovery rates, along with the amount of waste sent to landfill.

FIGURE 2.
The waste hierarchy

In fact, reusing is much more energy and resource efficient than recycling and recovery. Nonetheless, the percentage of total waste that is reused within the University currently amounts to only 0.4%. In fact, the current main means of diversion from landfill used by the University is recovery (38.7%), which is the least sustainable option before disposal. This is indeed a suboptimal waste management strategy.

IT'S MORE SUSTAINABLE

Two main strategies can be followed to tackle single-

Carbon Emissions from Commuting

The importance of measuring and reporting

KEY POINTS

- The university plays a major part in achieving Scotland's emission

BACKGROUND

The Scottish Government aims to reduce carbon emissions 80% by 2050 to mitigate global climate change. The public sector is a main contributor to Scotland's emissions, which gives it a key role to play in reducing emissions[1]. Additionally, the Scottish Further and Higher Education (FHE) sector represents 29% of the public [illegible]re in emissions[1]. This requires strong dedication from [illegible]ty of Edinburgh, as the largest university in Scotland, to [illegible]rship and innovation towards mitigating climate change [illegible]ucing carbon emissions.

"[illegible]hrough our carbon and sustainability reporting, [illegible]g the need to move beyond merely operational carbon reporting"

Box 1: Zero by 2040 statem

WHY MEASURE EMISSIONS FROM COMMUTING?

Although commuting only represents around 3% of the total 453,632 tCO_2e emitted from the FHE sector, it is suggested that this may be due to the difficulty of measuring these emissions[1]. By taking the lead and making significant moves to improve measuring and reporting of carbon emissions from commuting, the university would establish best practice methods for the whole FHE sector and make important strides towards mitigating climate change. The university's climate change strategy "Zero by 2040" states that they aim to show leadership in sustainability reporting (box 1)[2]. Emphasising the need for consideration of all emissions sources, including staff and student commuting, regardless of the challenges involved in measuring and reporting.

HOW TO BETTER REPORT CARBON EMISSIONS FROM COMMUTING?

Lessons from other Universities

POLICY BRIEF
APRIL 2018
B123052

Key recommendations

- Do not outsource the survey.
- Report annually.
- Use social media to increase survey awareness.
- Use parking permits data.
- Increase online accessibility of reports.
- Do a pilot test with a reduced representative sample and compare it with current results.

First, conducting the research will give the University the possibility of tailoring it to its particular needs, modifying the survey design or the report format. Access to all data and methodology will provide more transparency and make it easier to identify critical areas for further improvement. Finally, it will show leadership to the rest of Universities and increase the in-house knowledge of calculating and reporting carbon emissions, which will be necessary to achieve the zero by 2040 objective.

Report annually

56% of the studied Universities report their carbon emissions from commuting every year[1], whereas the University of Edinburgh does it every three years.

The current reporting frequency misses key changes in commuting trends, which should be properly understood to address the emissions problem in the most effective way. One example was the introduction of new trams in 2014, whose effects were considered for the first time in the 2016 report. Variations in the number of students

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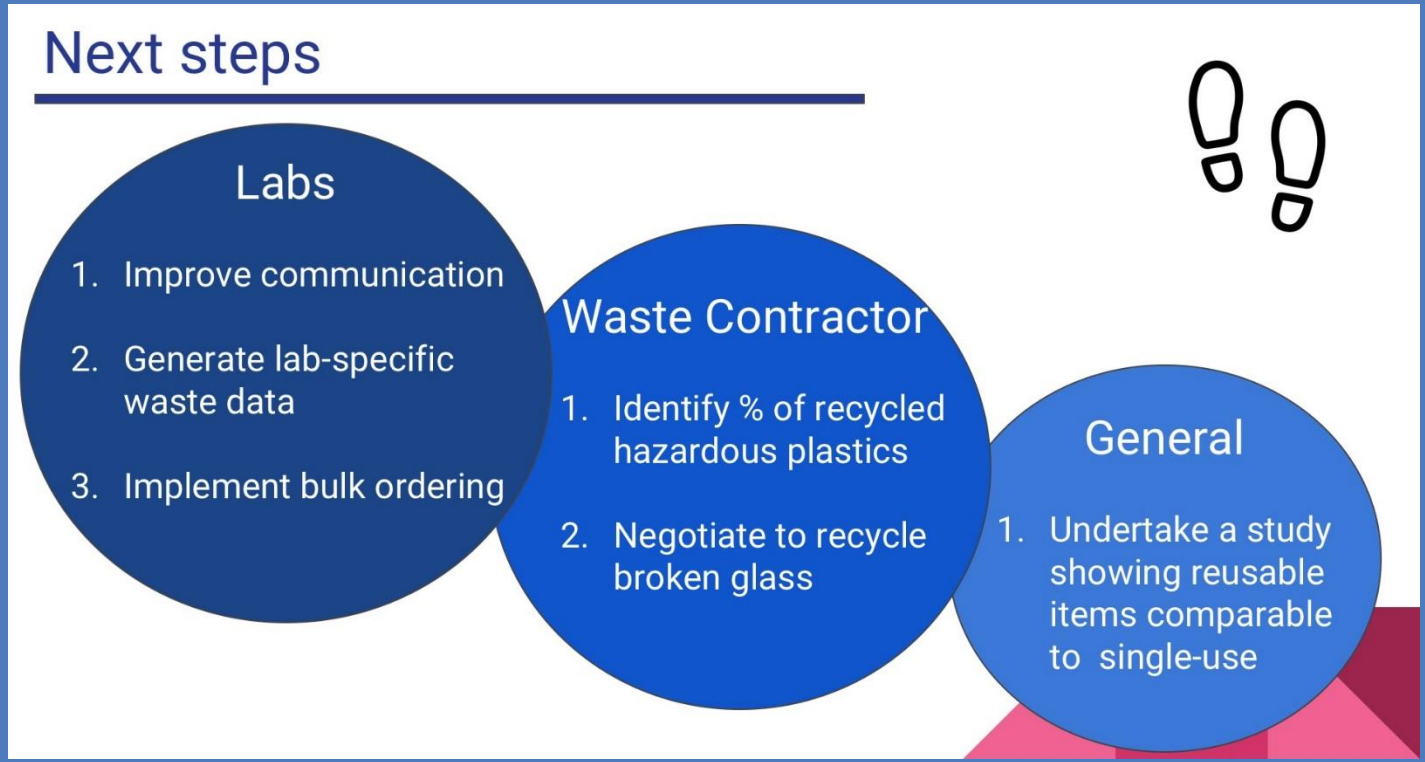
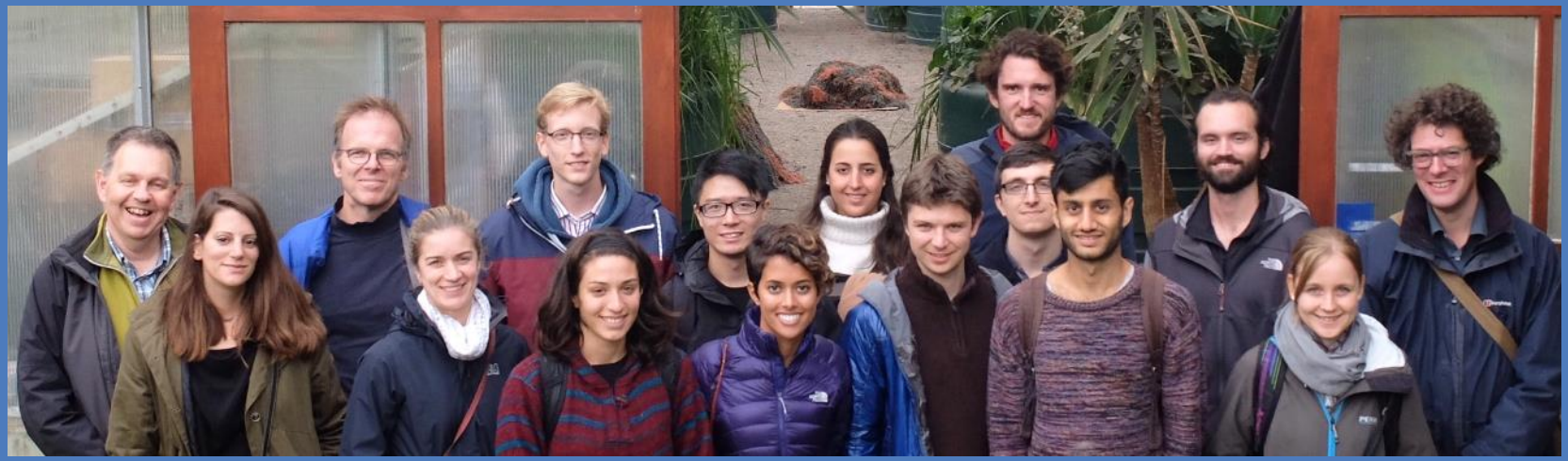
Recommendations: Encouraging the use of drinking water points on campus

Recommendations: Glass vs Plastic in labs

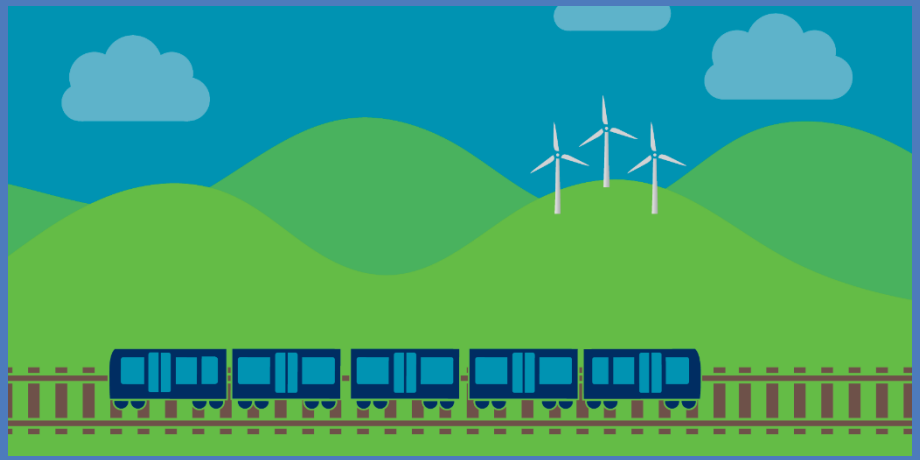


Benefits to the students



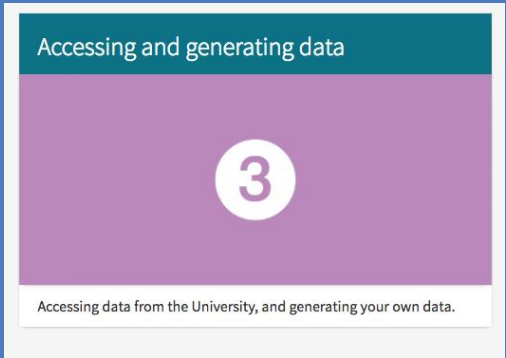
Things to consider

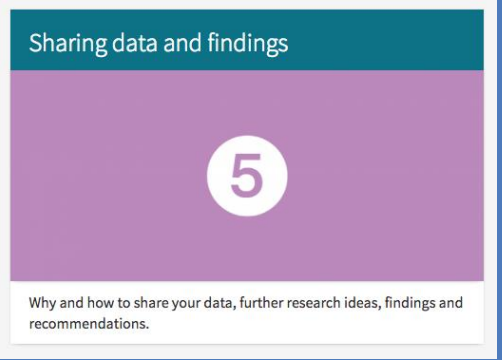
Other Living Lab successes



Benefits to the University

Living labs: what next?





Final thoughts