

WELCOME TO THE S-LABS NEWSLETTER,
A LOOK AT SUSTAINABILITY IN LABORATORIES AT THE UNIVERSITY OF BRISTOL.

S-LABS

WELCOME to the S-Labs newsletter. This is a monthly newsletter highlighting sustainability in and around laboratories in the University of Bristol. We are a research intensive organisation and correspondingly the impact of our labs is substantial. **40%** of the University's environmental impact is from labs, whereas they only account for **6%** of our space. There are lots of opportunities to improve upon this and I've been appointed as the Sustainable Labs Officer with the ambition of implementing the S-Labs initiative.

S-Labs stands for safe, secure, sustainable laboratories and aims to improve our labs through collaboration within and beyond UoB. By reducing our energy consumption and wastage from labs we can significantly reduce our environmental footprint and align ourselves with the ethos of our great city, the European Green Capital 2015!

How can we do this?

- 1) By adapting our **behaviour**, which is essentially free. This can result in safer, organised and more successful research.
- 2) By **changing our surroundings**. We can upgrade old, inefficient equipment with less energy intensive modern versions. We can design labs that are future-proof, flexible and maximise sustainable solutions.

We understand that time is scarce and everyone is busy, so we want to work alongside you to develop and implement solutions that are realistic and achievable.

Fume Cupboards and Biological Safety Cabinets are energy greedy!

Did you know that one fume cupboard can cost £2,000 per year and Biological Safety Cabinets are over £75,000/year in energy costs in Biomedical Sciences alone? There's lots we can do to reduce the amount of wasted energy.

- ◆ Shut the sash whenever not in use, this can save a massive 50-76% in energy.
- ◆ Avoid storing chemicals in the hoods.
- ◆ Do not keep any equipment near the opening as this causes turbulence. This causes the hood to intake more air and use more energy.
- ◆ Turn off when not in use for a period of time.

MAKE A GREEN IMPACT AND BECOME AN S-LAB CHAMPION

Green impact is an environmental accreditation scheme where teams of staff and students are empowered to take an active role in reducing environmental impacts. The University of Bristol pioneered this initiative and it has since taken off across the country. Last year we had **23 teams** take part across the university and savings of 129,552kg of CO₂ and £25,109 were made, across the areas of Waste & Energy.

Anyone can get involved whether you're a whole department, a small team or a couple of people. There is plenty you can do in labs without taking up too much of your time. You will have access to an online workbook and can achieve bronze, silver or gold awards at the end of each year. If this is something that might interest you please take a [look](#) or contact the S-Labs officer, Anna Lewis.

Key projects and players

Sustainability has been fortunate enough to already collaborate with some members on staff who are helping to make a difference. A special thanks goes to:

Paul Newcomb (*Chief Technician, DHB*) is setting up a cold sample storage inventorying and tracking system, Pro-Curo which will help to revolutionise and streamline the process.

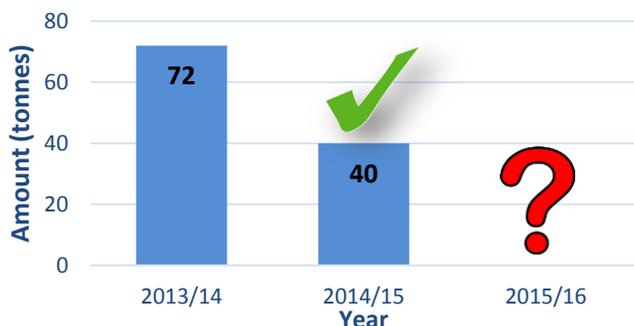
Natalie Griffiths (*Senior Research Technician*) and Steve Gaze (*Technical Manager*) in Biomedical Sciences are keen to catalogue and improve all inefficient equipment. They're also pioneering the switch from -80°C to -70°C in their ULT freezers, which will save energy and increase freezer lifespan.

Chris Glinski (*Synthetic Chemistry Technician*) has great ideas for S-Labs and is currently helping us improve fume cupboards through upgrades and behaviour change.

Waste

Our environmental impact doesn't stop at the energy we consume in our labs. We need to think about the **life cycle** of our consumables and equipment. From the manufacturing process, transportation costs, packaging, in-house efficiency and how we will dispose of them. Where do they go after they leave the lab? Most of the waste generated in our labs: metals, plastics, cardboard, paper, Pyrex, polystyrene are recyclable and chemical waste is particularly costly to get rid of. In 2013/14 we disposed of 72 tonnes of chemical waste and in 2014/2015 we disposed of 40 tonnes.

UoB Chemical Waste



This is great progress and has been largely due to some significant lab clear outs. Now that we have made a considerable dent doing that, we hope to continue to reduce our chemical waste. We can do this through:

- ◆ Sharing
- ◆ Sensible purchasing decisions
- ◆ Correct storage
- ◆ Chemical Inventories

If you have chemical waste you can book a collection [here](#).

We consume so much in labs it is important that we recycle as much as we can. We have free caddies available for you so that you can recycle:

- ◆ Glass
- ◆ Pyrex
- ◆ Plastics (including polystyrene)



Please contact anna.lewis@bristol.ac.uk or rose.roonery@bristol.ac.uk for caddies. If you notice a lab without them, drop us a line.

Ultra-low Temperature Freezer Incentive

Lab equipment uses a considerable amount of energy. It can be expensive to replace equipment so we are offering financial incentives to upgrade to efficient models. If you're thinking of purchasing new equipment please contact us as there may be more sustainable alternatives that do not have a significant cost impact. ULT (ultra-low temperature) freezers are a prime example where we can make a difference. Most new ULT freezers use between 15-22kWh/day of electricity. To put that in perspective, the average UK household consumes 11kWh/day of electricity. As freezers age, inevitably their energy consumption increases. Some of the units we've been measuring across UoB have measured as high as 30-50kWh/day. By replacing an old inefficient unit with a newer version, we are equivalently saving an entire household worth of energy. Our offers can be viewed [here](#).

The models we currently offer are the High Efficiency Freezer New Brunswick which uses 6-7kWh/day and the Panasonic ECO VIP which consumes around 10-11kWh/day. These units are using 20-30kWh/day less than the old units. This is a saving of up to £1,062 or an equivalent of 5.9 tonnes of carbon per year per unit. This is like driving your car for an extra 11,014 miles per year.

CHOOSE TO REUSE

Before purchasing new equipment, consumables or furniture, take a look at our [RE-STORE](#) page. We encourage you to trade, re-use and share equipment which will reduce waste and costs.

IF YOU HAVE ANY QUESTIONS RELATING TO S-LABS OR HAVE ANY IDEAS OF YOUR OWN THEN PLEASE FEEL FREE TO CONTACT US:

ANNA.LEWIS@BRISTOL.AC.UK

Telephone: 0117 33 17110