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I learned that health care has a share of 6 to 8% in our total energy consumption - equal to the aviation sector. Although as health care researchers, we need to face this reality and act.

00;00;25;18 - 00;00;52;26

Welcome to this ninth episode of the BBMRI-ERIC Podcast. My name is Saba Abdulghani. I'm the head of Biobanking Development at BBMRI-ERIC. In my department, we support the national nodes and their Biobank networks in remaining sustainable and getting more return on their investment. To reach this, we are working with various partners to co-create green solutions to help them achieve sustainability goals and thus reduce their carbon footprint.

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Last winter, the war in Ukraine and rising living costs created a major energy crisis across the European Union, and it prompted many biobanks to examine their operating practices. This included the optimum temperature for sample storage. In short, does every sample type need to be kept at -80 degrees? A biobank in the Netherlands have shown otherwise. Located at Amsterdam University Medical Center, eight apartments and labs participated in the International Freezer Challenge this year.

00;01;23;27 - 00;01;54;05

Together, they have saved enough energy to power 381 households. This result got them the top clinical organisation award in the International Freezer Challenge and illustrate just how important sustainability is for the Biobanking community. The Freezer Challenge is organised annually by My Green Lab, a nonprofit organisation that stimulates the sustainability of labs worldwide. Within Amsterdam UMC, the Center for Sustainable Health Care

00;01;54;12 - 00;02;26;17

coordinated participation in the competition for the second time. Three of the eight labs that participated won awards. The Biobank, the research facility with the most freezers, saved more than 650,000 kilowatts hours per year. The average annual energy consumption of 262 households and received the top bio repository award clinical award. As BBMRI-ERIC turns its attention to the climate crisis and how the Biobanking community can reduce energy use,

00;02;26;19 - 00;02;52;24

we thought it would be good to speak with Jörg Hamann, the head of the Biobank, about their when and why sustainability matters. Jörg, welcome and thanks for sparing some time today. Hey Saba, it's my pleasure to talk to you. Jörg, tell us about your biobank and the collections that you store? Our Biobank is one of the core facilities of Amsterdam University medical center.

00;02;52;26 - 00;03;26;12

Our task is to properly register and store bodily materials for research and innovation purposes. This includes biobanks, but also clinical studies. Altogether, we are responsible for more than 200 collections with far more than a million specimens, including DNA, plasma, serum, urine, faeces, tissue and so on. Jörg, describe the purpose of the competition and how you got involved as an entrant? As you said,

00;03;26;26 - 00;03;57;19

the challenge is organised by My Green Lab, a nonprofit organisation, which promotes best practices and cold storage management. We have been aware of this initiative for some years, but participated this year for the first time. The war in Ukraine and the energy crisis of last winter were the trigger, but the deeper motivation was related to sustainability. As Biobank is a core facility, we are responsible for the central freezer rooms in our medical center.

00;03;57;22 - 00;04;27;18

We have several of these rooms and they all become increasingly full. When realising that, we started the discussion; will we continue to expand or do we want to work with the space and energy we have now, and probably even with less? This was the point at which we developed this sustainability plan for our Biobank aiming at zero growth for the future and participation in the Freezer Challenge became the first step of this plan.

00;04;27;20 - 00;05;09;07

Jörg, what measures did your Biobank take to meet and exceed the criteria of the competition? The freezer challenge is about good management of cold storage. This includes having detailed inventories and cleaning up unneeded samples and collections, defrosting and brushing built up ice from the freezers and probably best known tuning the temperature from -80 to -70 degrees Celsius. We are working on all these measures, but focused for this year on setting the temperatures of all our freezers in total, as these are more than 80 to -70 degree. As we had to see how the owners of the collections would react,

00;05;09;09 - 00;05;33;21

we closely worked together with our Center for Sustainable Health Care, who helped us securing support from the board of directors. Although we started this project as a pilot and have evaluated results after six months in fact, and probably to our surprise, we met no resistance and although we did not face any trouble as with -70 degree, you have less time to respond once the freezer breaks down.

00;05;33;24 - 00;06;00;20

This was actually our main concern. I mean, we are talking here about valuable material provided by patients that we need to secure future research. That's really interesting and taken all of this into account, how has preparing for and winning the competition, the first Biobank in Europe to do so, informed your future sustainability practice at the Biobank? In the end, we were surprised how simple it was.

00;06;00;22 - 00;06;28;17

The key point was that we did not try to justify the temperature of -70 degree, but that we asked researchers to justify why their collections should be kept at -80 degree. We just turned it around. If you would hear good reasons for storing material at -80 degree, for example contractual obligations or experimental evidence, we would listen, but otherwise it is -70 degree.

00;06;28;19 - 00;06;50;18

And I expect that this will become common practice for all ultra low temperature freezers within our organisation. But I also foresee is that we will better look at actual usage of collections in the future. We have cohorts that are extremely productive and that should be stored forever or till the last sample is used, but there are also collections that are never used,

00;06;50;21 - 00;07;22;16

And in my view there is no right of spending energy without good reason. That's an interesting point to raise, of course. And may I ask you to explain more the broader sustainability challenges that you face running the Biobank? Yes, of course. Working with bodily materials has become enormously important and is therefore popular in biomedical research. And so we see an endless stream of new collections coming to our facility.

00;07;22;19 - 00;07;47;00

These collections consume space and energy quite a lot, actually, which both are limited. I learned that health care has a share of 6 to 8% in our total energy consumption, equal to the aviation sector. Also, as health care researchers, we need to face this reality and act. Jörg, based on your experience as the head of the Biobank and given the success of this exercise,

00;07;47;01 - 00;08;12;09

do you think this will encourage other Biobanks to adopt similar measures to enhance their sustainability? I very much hope so, and actually I'm quite optimistic when I see how young researchers ask questions about the environmental impact of their own research. So this is where it starts. Okay, wonderful. Thank you. Thank you so much. And we wish you all the best of luck for the future.

00;08;12;12 - 00;08;16;15

Thank you.

00;08;30;12 - 00;08;52;26

At BBMRI-ERIC, we have been working with the National Nodes to consider how to capacity build the community when it comes to carbon reduction and sustainability. This will lead to the launch of the green label. And like the BBMRI-ERIC Quality Label, will be displayed in our Biobank directory as a mark of meeting internationally recognised sustainability standards.

00;08;52;28 - 00;09;20;29

We won't be designing this label alone. Behind it will be a peer learning programme developed with the Carbon Literacy Project. The project helps sectors create relevant carbon literacy learning, covering climate change, carbon footprints, how we can do our bit and why it's relevant to us as a community and our researchers. The Carbon Literacy Project is globally unique. There is nothing else quite like it anywhere.

00;09;21;02 - 00;09;46;25

It was recognised as such by the UN at the COP21 in Paris, where it was awarded as a TAP100 - 1 of 100 worldwide transformative action programemes. Phil Korbel, co-founder and director of advocacy at the Carbon Literacy Project, will be working with us on the Certified Carbon Literacy Toolkit and he's here to explain a bit more about how it works.

00;09;46;28 - 00;10;26;18

Phil, welcome. Tell us a bit more about who Carbon Literacy are and what makes you special? We're a charity based in Manchester in England, and we just do one thing, which is to enable mainly employers, educators too, to get their people on board with climate action in the most impactful way possible. And we do that by enabling these partners to use our framework for climate action training, which involves a day's worth of learning and doing the brings the climate crisis to where you are.

00;10;26;21 - 00;10;51;21

It's explicitly relevant, so your course will be all about biobanks so much so that I don't think polar bears are going to get a look in. I like the sound of this. So at BBMRI, we work with national nodes and their country's biobanks to strengthen the network. How will your train the trainer model suit our kind of structure?

00;10;51;23 - 00;11;24;10

We don't know your level of expertise about what you do, but we provide a framework into which your expertise goes. So it's a very, very collaborative course design process where your expertise about what you do is applied to the climate crisis in such a way that at the end of every training programme we ask every learner to devise the best thing that they can do.

00;11;24;12 - 00;11;52;13

They can apply their expertise, whether it's as a scientist or someone involved in facilities or finance, whichever aspect of the project. But they can apply that to minimizing the footprint. They can also explore the co-benefits of this - the relationship between your work, the broad sector of health, why is the climate crisis a health crisis? Where does research come into this?

00;11;52;13 - 00;12;16;20

So some of this is about the very, very practical work of how do we reduce our footprint. But there's also an aspect of being able to talk about it and break down those barriers for when some people see climate action as a niche, as a specialism. Whereas our take on this is that

actually we all need to be in on this and to be able to do our best thing.

00;12;16;25 - 00;12;40;23

So to reiterate, what we do is work alongside you, provide you with as many tools as possible into which your expertise as a sector goes. And we also insist that colleagues collaborate with each other in the learning as well. So there's an element of active conversation between colleagues, particularly at that time when you,Äôre saying, well, what can we do?

00;12;40;25 - 00;13;11;05

So you get a good flow of ideas, a rare space in which to talk climate within your sector. That sounds very interesting. Of course, our expertise is biobanking, and I know that carbon literacy has in the past worked with all kinds of organisations, including the National Health Service in the UK. Tell us what you did there and how this will inform your approach with adapting a programme for the Biobanks that we work with.

00;13;11;07 - 00;13;48;22

First, we had to explore the connection between the work of the National Health Service. It's huge, huge footprint and climate and what you can do about it. So we developed a partnerships with a very large range of the different disciplines within the health service. The health service in the UK, I think it employs 1.3 million people. It's a crazy amount and as I say, a huge, huge footprint and very, very strong targets.

00;13;48;29 - 00;14;33;24

They've got a target to be net zero by 2030, so you've got a huge target and very, very busy people and yet a will to act on this. So we had to first explore learner needs, learning culture, so that this fitted into all the other time pressures both in the job and in training to make sure it would fit so appropriate partners, appropriate disciplines, enthusiasts that were willing to give some time into exploring how the footprint of an operating theatre could be unwrapped, for example, within the course.

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Or is it the buildings or is it leadership or is it the fleet, you know, your vehicle? So all these different aspects of how the NHS impacts on climate had to be unwrapped as content, edited down and fitted into our course framework, which dictates a certain amount of learning outcomes, methodologies and the like. So partnership was absolutely essential.

00;15;04;13 - 00;15;43;12

And in terms of how it fitted into their existing training, there's a very strong bias towards e-learning within the NHS, whereas we insist on some live learning as well. Live taught learning and the compromise that we came up with is that anyone with an NHS email can now access the first half of this course, which is the generic, the science, the exploration of the climate crisis as a health crisis and some good general ideas.

00;15;43;17 - 00;16;14;19

And then once they've completed that, they can access a live workshop which enables them to discuss this with colleagues, look more into their specialisms and at the end do those actions that I've mentioned. So that was about partnership, building, exploring the territory, acknowledging that we are not health people, at the carbon literacy project, but to work with the right health people to devise actually a range of courses that can fit across the health service.

00;16;14;26 - 00;16;45;22

And that's just starting its rollout now. The great thing that we're hearing is how popular it is. It lands really, really well. And you could imagine these are clinicians and people running hospitals, very, very busy people who you might think have more important things to be doing. But no, the feedback on the training has been extremely positive because there are people that want to do the right thing and here's their employer, their organisation saying, ‚Äúyeah, we're going to help you‚Äù.

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So it lands really, really well. That sounds really interesting, Phil. And thank you so much for your time today and we are really looking forward to co-developing this toolkit as we know it will make a real difference. Thank you very much. You're very welcome. We will keep you updated about the progress of the toolkit over the next few months via news stories on our website:

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