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The great coffee breakthrough

by Katherine Nightingale on June 6, 2013



(Image credit: Flickr/JenK)

Tea rooms and canteens have long been popular places for scientists to mingle and swap ideas. Katherine Nightingale explores how a chat over a coffee can lead to unexpected discoveries.

In the bright and airy canteen of the MRC Laboratory of Molecular Biology's new building, Dr Richard Henderson is demonstrating his habit of drawing on saucers, taking a — water soluble — pen from his pocket and sketching a neat blue graph on a saucer's rim.

He's not doodling but rather trying to get across the idea that the canteen, while a place to get a cup of tea or coffee, is also

a place to share ideas, sometimes on the very crockery provided.

It's not a new concept. The tea room in the Physics Department at the Cavendish Laboratory in Cambridge inspired Max Perutz to persuade the MRC to build a canteen open to everyone when the MRC unit moved to the 'old' LMB building in 1962. As the LMB's chairman, he was keen to create a space where people from different disciplines and career stages could get together.

Perutz's son Robin, a Professor at the University of York, says: "He persuaded a large proportion of the lab to take the time out to do this, and not to put on the coffee makers in their rooms and do things over their sandwiches but go up and relax and talk science."

"He just led by example. Creating a pleasant environment where people could talk informally — a place where you'd want to spend time, with good, cheap food and drink."

It is this informal atmosphere that many people say has played an important role in the LMB's success, with 13 researchers sharing nine Nobel prizes in its history.

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Making time to mingle

The LMB has three allotted refreshment slots — coffee in the morning, lunch, and tea in the afternoon — where researchers and support staff are encouraged to get together. While the LMB could be seen as one of the most successful places for 'coffee culture', many research organisations encourage researchers to spend time together, even if less frequently.

Professor Marcus Munafò, an MRC-funded researcher in the School of Experimental Psychology at the University of Bristol, sees informal time as crucial to the process of research.

"We have quite a tradition of everyone from undergraduates to senior faculty intermingling in lots of different contexts, including coffee time and going to the pub on Friday nights."

"It's pot luck who you end up talking to. Talking to people in different areas can sometimes generate a new direction for your research that you wouldn't have thought of alone. It's important to recognise the creative aspect of talking with colleagues — and science has a strong creative dimension to it."

One example of Marcus's research came directly from a Friday night in the pub. He researches tobacco and alcohol use and was chatting to Dr Nick Scott-Samuel, another researcher in the department who works in visual perception.

"We got to talking about whether the shape of your glass influences the rate at which you drink. We did [the research](#) and it turned out it was harder to accurately judge the halfway point on a curved glass than on a straight glass, making you drink faster, which has implications for public health."

Whether it helps to add alcohol to informal conversations is less clear. Sir Peter Medawar, Director of the National Institute of Medical Research (NIMR) between 1962 and 1971, ensured that a common room and bar was installed at the Mill Hill site in north London, knowing that providing a space to relax and chat would lead to the generation of ideas. "It's all the same basic idea — creating unstructured time where people can chat and think and there are no deliverables. Something will always come out of that," says Marcus.

Chance encounters

Professor Dario Alessi, Director of the MRC Protein Phosphorylation and Ubiquitylation Unit in Dundee, has his own example of a coffee-room realisation.

Informal discussions with his colleague Professor Grahame Hardie made both men realise they were working on two halves of the same problem. Dario's team were looking for the target of an enzyme called LKB1, while Grahame's wanted to know what activated their enzyme of interest, AMPK. It turned out they had each other's answers.

"It was a kind of eureka moment. Grahame's lab had spent 20 years trying to find the enzyme that activated AMPK, and it was the thing that we were working on," says Dario.

Dario's enzyme was known to be involved in cancer, and Grahame's to be targeted by a cheap diabetes drug called metformin. Their chats led to the proposal that metformin might treat cancer, and there are now almost 60 trials investigating it for cancer prevention or treatment.

"You can't underestimate the importance of a chance discussion and it is money well spent to create spaces for chance encounters," says Dario.

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Max Perutz (centre) began the tradition of people getting together at coffee, lunch and tea (Image copyright: MRC LMB)

Some researchers plan their day around opportunities to interact with colleagues. "I remember during my PhD at NIMR, you planned all your experiments so you could go to all the coffee breaks," says Dario.

So a few hours a week in the canteen can save many more hours in the lab. "We plan experiments, discuss ideas and overall come away with technical details that save us time in the long-run," says LMB group leader Dr Lori Passmore.

But given the increasingly collaborative nature of some areas of science — bioinformatics, for example — is it possible to achieve this kind of interaction for people who don't work in the same building? Not yet, says Professor Richard Baldoock of the MRC Human Genetics Unit (HGU). In 2008 he discussed linking the coffee room at HGU with that of the systems biology group at the University of Edinburgh. His plans were thwarted by the cost of bandwidth and equipment, but he's not convinced it would have worked anyway.

"I can't see it happening until it's affordable for us to have a screen that almost covers a wall, and makes you feel like you're in the same room. Until then I think it'll be very difficult to engineer the feeling of just bumping into someone or striking up a conversation," he says.



A coffee break outside the LMB's canteen (Image copyright: MRC LMB)

Continuing traditions?

Back at the LMB, it's just a couple of months since most of the research groups moved into the new building, so it's too early to tell whether the new canteen will be able to hold on to its role as a central meeting place for the lab.

"There are lot of little kitchens and break-out areas so I did wonder whether people would use them instead but so far it seems pretty similar. Of course, they did have free coffee in the beginning!" says Richard

Henderson.

He's hopeful though. "It's about the people, and the way the institution starts out. We had Max Perutz starting this tradition, and we have a culture of interaction outside the coffee room too."

"In a big lab it's even more important to make sure that people get to know one another, rather than being a set of little islands," says Robin Perutz. "It'll be challenging, I'm sure, but possible by all means."

And as Henderson says, with an excellent new chef, the chances are pretty good.

Katherine Nightingale

A version of this article is also published in the [Summer 2013 issue of Network](#).

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