

Newsletter February 2015

It is some time since we wrote to you all. We have been busy and there is a lot to report.

We have now received over 200 proposals from researchers who want to work with Generation Scotland on a very wide range of health research projects.

Many researchers are particularly interested in working with us because of the very detailed information we were able to collect from you all at interview, in the clinic and by linking to the routine medical records collected by the NHS in Scotland. This has allowed us to address questions that many other studies can't. We also put extra effort into collecting information about mental as well as physical health, which is unusual, but paying off.

When we last wrote to you, all the samples were in place, but we did not yet have the funds to do all the analyses we wanted to perform. Now, with substantial support from the UK Medical Research Council and the Wellcome Trust, we are close to obtaining a detailed genetic picture of all the participants in Generation Scotland. This will allow us to ask precise questions about genetic risk factors and how these combine with how we choose to rest, work and play, and what life throws at us – to influence our health and well-being.

Here are just a few examples of major research undertakings where Generation Scotland is playing a key role.

MRC Centre for Cognitive Ageing and Cognitive Epidemiology (CCACE) (www.ccace.ed.ac.uk)

Ian Deary (Director) and colleagues at CCACE are showing that how our brain ages is a key factor in many common conditions affecting the elderly. They have been greatly helped in this by working with members of the Lothian Birth Cohorts of 1921 and 1936. They are now adding to this world-leading research by working with the much larger Generation Scotland study.

Stratifying Resilience and Depression Longitudinally (STRADL)



Andrew McIntosh and colleagues in Edinburgh and Aberdeen have won a major award from the Wellcome Trust to study depression and reclassify the condition into more

useful diagnoses for research and treatment. The team are very interested in why some people react well to unfortunate and unhappy life events that frequently cause mental health problems in others. In other words – they want to know why certain people are resilient so that they can (one day) help people with depression to boost these reserves. How much of people's resilience is due to the genes we inherit and how much the environment in which we are brought up is not known – and the STRADL team will be trying to find this out. We will write to you separately to tell you more about this study and hope that you will consider helping us with it.

Putting the Gene into Generation Scotland

The Scottish Government funding for Generation Scotland paid for the cost of recruitment and for banking all the samples, but not for their analysis. The analysis is being done project by project with our many collaborators. One type of analysis that many collaborators are looking for is genetic analysis. It makes sense to do this once and well so that Generation Scotland can act as a safe guardian of the data and only provide it in an anonymised form, as we promised we would. The Medical Research Council and the Wellcome Trust, the two leading UK organisations that sponsor genetics research, have jointly made this possible. Very soon we will have completed a genetic reference map of 20,000 participants in Generation Scotland. The costs of doing this type of analysis are still high, but fall year on year. It is getting to the stage when we can consider going one step further and looking at your genetic makeup in very precise detail. We have started to do in small steps at first, but we hope to be able to apply this exciting method to the whole of Generation Scotland in the near future. This is

important as it has become very clear that in many instances we will need to sift carefully through all of a person's genetic material to be sure which genes are involved and how they are altered. Once we know this, we can start thinking about how to predict who is most at risk, and which of the alternative forms of treatment for say diabetes or stroke might work best – so called precision medicine.

Collaboration with Pfizer in Pain Research

When we asked if you would be willing to participate in Generation Scotland we said that we would want to collaborate widely with the Life Science industries including pharmaceutical companies. This was important because although NHS Scotland and the Scottish Medical Schools can carry out ground breaking research, developing, testing and formulating new medicines depends on the biopharmaceutical industry. Academic-industry partnerships will help decrease the time it takes new treatments to get to patients. We are delighted about our recent collaborations with Pfizer to test genes that might be involved in chronic pain.

Other projects and ways to collaborate

You can find out more about other projects on our web site (www.generationscotland.org).

Keeping in touch

We like to keep in touch by post but, as you can imagine, to do so for 24,000 people each time is costly. If you would prefer to receive Newsletters by email please click on the **Contact** page of our web site (www.generationscotland.org) and complete the form. In our letter to you all about the STRADL project, we are specifically asking if you would be willing to provide your email address so that we can keep in touch that way. We promise to keep your contact details safe and confidential. We never share contact details with unauthorised persons. The NHS provides the secure link between the participants and the study team.

Good bye, good luck and many thanks!

Our support from the Chief Scientists Office came to an end in March 2014, so we had to say “goodbye and good luck” to three of the team who have been instrumental in managing Generation Scotland. All have found excellent opportunities elsewhere.



Dr Shona Kerr has moved to a Science Manager's role in the MRC Institute of Genetics and Molecular Medicine at the University of Edinburgh, where she is

co-ordinating various genetics projects including support for a major initiative to conduct whole genome sequencing of patient groups in Scotland.



Pamela Linksted (*right*) has been seconded to the Chief Scientists Office for an initial 2 year period. She is bringing her Generation Scotland experience to

bear on the CSO's wider investment, organisation and oversight of Biorepositories.

Dr Robin Morton (*centre*) now has a full time post with the University of Edinburgh using his knowledge transfer and communications expertise to support CCACE (see above) and related work.

On the positive side and thank goodness, NHS Lothian R&D has picked up the salary support for the GS Data Manager, Archie Campbell (*left*), who now is formally a member of their Tissue Biorepository team. We are as dependent as ever upon the time given freely by the Generation Scotland Executive, the Access Committee and Expert Working Groups to ensure that it is 'business as usual' at this exciting and productive time in Generation Scotland.