I’m very proud to represent the South Australian Health and Medical Research Institute this morning. Are you aware of our building on North Terrace? The really odd-shaped building next to the new Royal Adelaide Hospital? The cheese grater some people call it; the mothership the trekkies call it; the beehive for the agriculturalists, but we call it just a 22nd Century building in which some great research is carried out across a number of themes.

Aboriginal health, cancer, heart research, infection and immunity, healthy mothers, babies and children, mind and brain, and nutrition and metabolism. And all those themes have been selected because they touch on the human condition and they represent all the major diseases that people around the earth are suffering from today as we meet here. And so that’s the focus of our attention. The unique thing about SAHMRI is that we have seven themes of research in one building. So we’ve got: prostate cancer people speaking with stem cell researchers; we’ve got infection specialists talking to epidemiologists who to talk to prostate cancer people who talk to heart researchers. Then we’ve got genetic data analysers who talk with people across all those themes and so having everybody in the one building has already led to a number of particularly interesting breakthroughs in the area of prostate cancer for example. And so here we are just 18 months old and SAHMRI is really punching above its weight and getting some great runs on the board.

So that’s the building, next time you’re up North Terrace, have a look at it. It really is a very interesting one. The reason it’s got a like a cheese grater finish is because outside on the external there are individually-sized and placed hoods to maximize sun-retention absorption depending on the season and the angles of the sun. It’s got a seven-star rating in terms of its ecology and eco-friendliness and we’re on track to win an international award for the low emissions and the low energy usage of the building.

It’s not just about research; it’s a great institute for South Australia. It will create wealth as we patent therapies and sell them around the earth. As we create career paths for graduates, as we attach to the community and as worldwide teams collaborate with what we’re doing, it all means a great future for South Australia which is extremely important.

It was established in 2008, it’s a partnership model, we are founded by the three universities, the state government and we have two research partners – the CSIRO and EMBL which is European Molecular Biology Laboratories. It’s the first time EMBL has come into the Southern Hemisphere and they are providing us with some fantastic research in the area of Bioinformatics. To have European expertise and a cross-pollination between our scientists and those scientists has been a great addition right across our themes. The work they do touches each one of those of research areas. So it makes it really exciting.

Currently we have room for more than 600 researchers so when you graduate or commence your PhD in your research career, come and join us, we’ve got room for you. At the moment, there’s just over 400 researchers and a number of those are current PhD candidates at particularly Adelaide University and Flinders University. And they’re able to join a research team and carry out their research, be mentored by star researchers with, who are mid-career or even towards the end and the maximum of their career. So there’s tremendous mentoring opportunities, tremendous practical opportunity to explore and express ideas and carry out the research and see where it takes you.

SAHMRI has just one tagline and it is – we translate research into health. So if research isn’t demonstrably able to produce treatments, therapies and interventions for people suffering major disease, then we don’t do it. It doesn’t have a practical application.

So it’s extremely important that we continually monitor the research to make sure that it’s on track and doing what we say it will do. There’s a few things involved in the infrastructure at SAHMRI. Down in the underground of the building, we have a cyclotron for the first time in South Australia, which is a particular beam accelerator capable of cellular fusion. And we can produce and are producing for the very first time in this state, radioisotopes that can be injected into the body as biomarkers. So for example today some people suspected of having cancer will receive our radioactive sugar biomarkers, it’ll trace around the body and because when cancer appears in the body it multiplies quickly, it soaks up all the glucose and energy in the body so when it finds the hot sugar, it soaks it up immediately and on a scanning screen it gives itself away. And so clinicians can then say we know what the cancer is and we know where it is, which immediately reduces cost of treatment, less experimentation resulting in less side effects and a far more accurate - from the beginning - regime of treatment for the patient.

Until now, radioisotopes were flown in from interstate every second day. By the time they took the lid off, there was a two-hour shelf life so the hospitals had to act quickly. But now we run it at 3am and produce the radioisotopes, they send out to the hospitals and the various clinics and can be used well within the timeframe effectively and efficiently. So it makes it very exciting in terms of putting ourselves ahead in being able to treat illness and also conduct research quickly.

So we have a human imaging, we’ve got mass spectrometry, cryogenics, which is minus 196 degree freezing of samples and tissue and then almost like a library researchers can ring up that section, order that piece of tissue or whatever it is that they want. The histology people prepare it on slides, it goes up to the lab and the research project continues as it needs those samples delivered.

That just gives you an outline of our themes, there’s, you can see in the blue, there’s 6 of the particular themes I’ve mentioned. Aboriginal health really flows through all of our research themes; Aboriginal people suffer horrendously from rheumatic heart disease, kidney disease, liver disease, eye disease, you name it and they just suffer from these terrible diseases and what you may not know is that Aboriginal people when they contract those kinds of diseases that we as white Australians might contract, it accelerates faster in their bodies than in ours. And so that’s a very key point of our research to find out why that happens. And so we’ve got equipment out in the remote APY lands and into the Northern Territory, conducting massive research across many thousands of Aboriginal people to begin to deal with these issues and not disappear with the research data but to come back with treatments, therapies and interventions that help save Aboriginal lives. So that’s why that theme weaves through all the other themes at SAHMRI.

Currently the South Australian Government is in the middle of building the largest biomedical precinct in the Southern Hemisphere so you’d be familiar with the new Royal Adelaide Hospital that is being built on North Terrace. Our building is next to that. Ultimately the Women’s and Children’s Hospital will relocate the other side of the RAH. The Flinders University will build a second building together with SAHMRI and we’ll have a massive proton-therapy clinical unit. The Adelaide Uni is building a new school of health sciences and the UniSA is building a massive research building as well. If ever you come down that end of town, it is really exciting. When it’s all done they’ll be about 15,000 people on a daily basis moving through that precinct. So your future career in science and research whether it be medical or scientific or biological or physical or technology, there’ll be room for you at SAHMRI in years to come.

Since inception just over 18 months ago more than 800 scientific publications have been produced by SAHMRI researchers and some of our key partners. A scientific publication is not just saying what you know but a scientific publication shows what you did, how you did it and what you’re doing from here, what the way forward will be. So which one of those 800+ scientific publications represents a way forward across research in those seven themes?

The momentum is building and there are people in their first and second years of their PhD candidacy who are involved in this ground-breaking research. When the Prime Minister opened the South Australian Health and Medical Research Institute in November 2013, he said in the end SAHMRI doesn’t even belong to Adelaide or South Australia, it belongs to humanity because of all of humanity will benefit from the work done in SAHMRI.

There’s a huge amount of work to be done in medical and health research and SAHMRI’s existence means that young people can go through their secondary education, go into tertiary, get their masters, candidate for a PhD and not leave the state to complete that PhD or even to commence their research but to do it here in Adelaide, South Australia. We invite you to go and do some science and come and see us as soon as you’ve graduated.