



8<sup>th</sup> May 2020  
Dr Matthew Butlin  
Chair and Chief Executive  
South Australian Productivity Commission  
[sapc@sa.gov.au](mailto:sapc@sa.gov.au)

**Re: Inquiry into Health Medical Research in South Australia**

Dear Dr Butlin,

CSIRO is Australia's national science agency with a national footprint that includes a strong continued presence in South Australia with almost 400 staff located across three sites (Waite, SAHMRI and Adelaide CBD); with ~100 staff focussed on health and medical research through our Health and Biosecurity Business Unit. We would like to specifically address the information request on Collaboration (**Section 5.4**).

**How important is collaboration to securing research funding and to the achievement of HMR outcomes – both between researchers and between research institutions and industry, nationally or globally?**

CSIRO has a strong focus in developing collaborations and partnerships with research, industry and government, in recognition that significant problems cannot usually be addressed by one entity alone. We have been effective in building partnerships between multi-sector participants in the Australian research sector, resulting in a variety of evidence-based, safe and effective programs, products and services to improve and optimise health.

- Clinical Partnerships:

Partnerships between clinicians and researchers are key to ensuring that the research being undertaken is addressing an unmet-clinical need. Examples include two early stage blood-based colorectal cancer diagnostics that have been developed in partnership with Flinders University, SA clinicians and CSIRO researchers. These activities received NHMRC funding and ultimately led to the development of a new start-up for one diagnostic prototype whilst the other diagnostic prototype was licensed to a commercial entity.

- Industry Partnerships:

Partnerships with industry are critical for understanding market-gaps, translating health and medical research and implementing solutions into the marketplace or community. An example of this includes a \$3.77M Hort Innovation funded collaborative project between CSIRO Flinders University and a Victorian entity, to develop new guidelines, products and educational materials for improving children's eating habits through increased vegetable consumption.

- Government partnerships:

Selected examples of partnerships with government include: Commonwealth DIIS funded (now DISER) a Bilateral agreement between Singapore and Australian governments and national science agencies. This has provided a \$2.2M 12month grant to develop innovations in foods for personalised health. The agreement is led in Australia by CSIRO researchers based in South

Australia, where CSIRO's Future Science Platform for Precision Health is based, accessing researchers across Singapore and Australia.

The Australian e-Health Research Centre (AEHRC) is a longstanding joint venture between Queensland Health and CSIRO's national Digital Health Research Program. The AEHRC is the leading national research centre for the transformation of our health system through the adoption of digital technologies. High impact work includes the Australian Digital Health Agency National Clinical Terminology Service that is underpinned by AEHRC technology, world first mobile health trials in areas such as gestational diabetes and cardiac rehabilitation, as well as imaging and genomics technology that is used with research and health department collaborators around Australia. The AEHRC has recently undertaken a number of small projects with the new SA Commission on Excellence and Innovation in Health.

Researchers in the CSIRO Nutrition and Health Program have partnered with Wellbeing SA and the Dieticians Association of Australia to develop video content for consumers to support health and wellbeing in the face of the recent COVID-related restrictions.

- **Research Partnerships:**

Collaborations amongst researchers is essential to building multidisciplinary teams to address significant health and medical problems. To that end, CSIRO has an ongoing strategic relationship with SAHMRI and undertakes collaborative research in health and medicine with all three Universities in South Australia. Since 2014 the Nutrition and Health Research Clinic based at SAHMRI has performed almost 40 clinical trials (over 22,000 hours of patient participant visits). The Australian e-Health Research Centre is also working with researchers at SAHMRI to develop digital health-based solutions to support a number of trials in diabetes and other chronic disease in Indigenous Health.

### **Has the performance of SA Government departments helped or hindered collaboration in the state's HMR sector?**

In 2019, a Strategic Relationship Agreement (SRA) between CSIRO and the SA Government was approved. The objective being to develop collaborative partnerships between CSIRO, the SA government and third parties to support:

- investment in improving, up scaling or developing new facilities,
- investment in supporting and developing new industries, and expanding existing industries,
- encouraging collaboration with SA including universities, research institutes, industry and government.

Sectors mentioned in the SRA include: Space, Defence, Health, Energy and Resources, Agriculture, Food and Wine, Advanced Manufacturing, Data and Digital, Innovation – innovation services, activities and infrastructure. While continuing to mature, currently there are three health and medical related projects underway.

CSIRO is a key partner of SAHMRI, located within The Adelaide BioMedCity Precinct. Since 2014, CSIRO has been an active member of the Research Executive Committee and has established and grown collaborations with the South Australian Health and Medical Research sector. Some key highlights include:

- A research collaboration between CSIRO, University of Adelaide and the QEH led to the development of BARLEYmax™ - a wholegrain with twice the dietary fibre and four times the resistant starch of regular grains, and with clinically substantiated benefits for gut health. The potential value of the improved health outcomes for Australians from widespread, regular consumption of BARLEYmax™ is estimated to be worth \$300M a year.

- The development and clinical substantiation of the CSIRO Total Well Being Diet, a 12-week high protein, low GI eating plan scientifically formulated for weight loss and overall health, was undertaken in South Australia. The program was translated into a successful book, which has since been developed into an on-line Program that has been accessed by over 60,000 Australians.
- An industry PhD program (est. 2019) is currently hosting four health related projects with the University of Adelaide.

**Are there innovative models of collaboration which could be adopted in SA? Please provide relevant supporting examples or case studies, where available**

- Specific constructs such as Joint Ventures or other Collaboration Agreements enable governance arrangements that can support outcomes. The AEHRC unincorporated Joint Venture between CSIRO and Qld Health is now in its 16<sup>th</sup> year, with the AEHRC now a national research program working around Australia and internationally. Its Board structure enables oversight from the JV partners that enables it to deliver on its commitments to Qld Health and grow nationally and internationally.
- Commercialisation through special purpose vehicles and open innovation approaches enable early stage research to move quickly through to a commercial phase. In health and medical research special funding of this nature can accelerate trial outcomes, and lead to a commercial outcome faster.
- The new digital health record provides the opportunity for collaboration at significant scale to create a learning health system where research feeds back into healthcare. Such projects can be undertaken through any number of collaborative structures to enable and support data access.

CSIRO is supportive of the review currently being undertaken. There is a great opportunity to further enhance Australia's Health and Medical Research. In the increasing digital world, science and healthcare are increasingly being driven through the use of digital technologies. CSIRO Health and Biosecurity is at the forefront of digital health innovation, and the use of digital technology in undertaking our research.

CSIRO's purpose as Australia's national science agency is to solve Australia's greatest challenges through innovative science and technology. We are focusing on the issues that matter the most: for our quality of life, for the economy and for our environment. To help solve these challenges we are developing missions – large scale major scientific and collaborative research programs aimed at making significant breakthroughs; a number of these missions have a focus on Health.

CSIRO has a proven track record in facilitating collaboration, technology translation and entrepreneurship, and has a focus on transdisciplinary research and multi-party collaboration. CSIRO, as Australia's national science agency and innovation catalyst, looks forward to working with the South Australian Health and Medical Research sector more strongly in the future.

Kind regards,



**Dr Marcus Zipper**

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