

South Australian Productivity Commission

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Dear sir

Firstly, congratulations on a thorough and insightful report on HMR in South Australia. We think the report goes a long way to identifying areas that can be improved and better resourced to attract more research funding to South Australia.

#### BACKGROUND

By way of introduction, Vaxine Pty Ltd is an 18-year-old Australian biotech company based at Flinders Medical Centre/Flinders University which specializes in immune therapies and, amongst other things, in ultrarapid development of pandemic vaccines. Vaxine has active local clinical programs in infectious disease, cancer and allergy vaccines and through international collaborations Alzheimer's and opioid addiction vaccines. These programs attract regular global media coverage and in the last 6 months alone media generated by Vaxine has reached a total audience of over 25 million equalling over 50 million dollars in free media coverage nationally and internationally for Flinders University and South Australia, as tracked and reported by the Flinders University media office. Vaxine and Prof Petrovsky have been regularly featured in the global media with their many breakthroughs including world's first swine flu vaccine to enter human trials (2009), world's vaccine designed by artificial intelligence to enter human trials (2019), first Southern hemisphere designed COVID-19 vaccine to enter human trials (July 2020).

Since 2005, Vaxine has been continually funded by the US National Institutes of Health across multiple vaccine research and development contracts totalling ~ \$50m, with Professor Petrovsky as Principal Investigator. In addition, Vaxine and Professor Petrovsky have been involved in multiple successful grants bringing income to the state including ARC Linkage, NHMRC project, MTPConnect, DMTC, Global Connections, National Computational Merit Allocation Scheme, Bill and Melinda Gates Foundation, FastGrants, BioSA Bioscience Industry Development, Industry SA Grant, and Innovate UK, equating to another ~ \$10m. This alone makes Prof. Petrovsky once of the most successful SA scientists in respect of attracting large scale grant funding to SA over the last 10 years and to the best of our knowledge the most successful Australian scientist in respect of attracting continuous large-scale research funding from the prestigious US National Institutes of Health.

Over the last 10 years Prof Petrovsky has been invited to give keynote presentations at 70 international conferences (average ~7/year) and has published 100 original research papers (average ~10/year).

Vaxine has collaborations with Universities, both nationally and internationally.

We have listed in "Appendix A" funding Prof. Petrovsky and Vaxine have attracted in the past 18 years. This should make Vaxine a South Australian success story, whereas by contrast for inexplicable reasons this Commission might wish to investigate Prof. Petrovsky and Vaxine have been treated as pariahs by the SAMHRI management who have shunned any attempts at collaboration.

When COVID-19 was first reported in Jan 2020, Vaxine diverted all its team to develop a safe and effective vaccine against the new virus. Using a computer modelling approach, Vaxine predicted the spike protein of the new virus and designed a synthetic gene sequence with which to create a vaccine, based on an earlier successful SARS vaccine. Vaxine then set about manufacturing a range of DNA, MRNA, and protein-based vaccines. These vaccines were screened in mice and monkeys with the protein-based vaccines formulated with Advax-SM adjuvant providing to be the most immunogenic. These were then moved into advanced development with further testing in ferret challenge model which confirmed a high level of protection against COVID-19 infection. Based on these promising results a Phase 1 Clinical Trial was undertaken at the Royal Adelaide Hospital, making this the first Australian-developed vaccine to enter human clinical trials. Vaxine is now planning to conduct a pivotal Phase 3 trial to obtain a marketing authorization and is currently speaking to many overseas countries who are keen to participate. In all these many hundreds of interactions with overseas governments, universities and companies, Vaxine is effectively promoting the excellence of SA Science, and providing yet more free global attention to Flinders University.

SAHMRI (information request 5.2) Incorporate SAHMRI ..... Page 33

In the face of Vaxine and Prof Petrovsky global success, it would be reasonable to assume that the SAMHRI leadership would be keen to engage with Prof Petrovsky and Vaxine as one of the most successful local research groups to find out how this funding and translational research success might be replicated within SAHMRI and to seek to establish collaborations with this.

To the contrary, the SAMHRI leadership have rebuffed all attempts by Prof Petrovsky to engage with them, and by contrast to his many international invitations to speak, SAHMRI has never once invited Prof Petrovsky to give a seminar on his globally acclaimed vaccine research at SAHMRI.

The lack of SAMHRI collaboration and commitment to South Australia was never more evident than with the Rapid Response Report tabled on the 11th May 2020 to the Federal Government. The Federal Government requested the report from The Australian Academy of Science to identify COVID-19 vaccine candidates under development in Australia and internationally. Notably, many of the authors from University of Qld, CSL, CSIRO, Doherty were heavily conflicted. To give the Report authenticity several reviewers were appointed including Prof Steve Wesselingh, SAHMRI Director, and Prof. Helen Marshall from the Women's and Children's Hospital in Adelaide. Both these individuals must have been fully aware of Prof Petrovsky and Vaxine's multiple previous vaccine successes, as well as the fact we were developing a COVID-19 vaccine with stories on these efforts on the front page of the Australian and the Advertiser as well as on local radio and television throughout the period the Rapid Response Report was being reviewed. It would therefore have been very obvious to Steve Wesselingh and Helen Marshall, that the local SA vaccine efforts were completely missing from this report. Nevertheless both these reviewers signed off on this report as being accurate and after their review the Report was then tabled with Minister Greg Hunt by Prof Alan Finkel, the Australian Chief Scientist. Prof Alan Finkel, when presented with our evidence, has

conceded that the report was in error not to have mentioned the SA vaccine development efforts and Finkel subsequently directed the Academy of Science to correct it.

It seems likely that this misleading Report was then used as the basis to award multiple grants and ex gratia payments to interstate institutions in Queensland and Victoria, from whom most of the authors were from, with none coming to SA or Flinders University/Vaxine, because the SA vaccine efforts were not even mentioned in the Report which had been claimed as accurate by these two SA reviewers. This is clear evidence that SAHMRI are not engaged with other SA organisations and see themselves as in competition rather than collaboration with them. This is clearly not in the interests of SA HMR and SAHMRI's goals and leadership needs to be completely realigned if the Government's goal of making SA recognised for its research excellence is to be realised.

Hence, we strongly endorse the view that SAMRI should cease to be a standalone Institute and instead should become a research arm and be controlled by another entity such as University of Adelaide or UniSA thereby allowing a stronger affiliation to CALHN.

We are aware that SAMRI leadership have rebuffed the CALHN human ethics committee who were keen to offer SAMRI these services and instead chose to use a private human ethics committee. This does not communicate a willingness of SAHMRI to collaborate with other local institutions.

The model of SAMHRI contrasts strongly with the successful for the Walter and Eliza Hall in Melbourne which is affiliated with the Royal Melbourne Hospital and the University of Melbourne. Each of these organisations plays a major part in promoting the profile and success of the other. This has not happened with SAMHRI and it must be accepted that the original model on which it was founded has failed to deliver positive outcomes and a complete reform of the model is now needed. Inevitably there will be those within SAMHRI who will resist any attempt to change the current isolationist model, and this resistance will need to be overcome in order to successfully implement any new model.

I have attached a copy of the Rapid Report that lists its authors and reviewers for the Committee's information.

Department of Health Information request 6.1 significant barriers for attracting and retaining clinicians (page 33)

Major problems exist within SALHN Research governance.

In 2009, when Vaxine developed the first Swine Flu vaccine in the world, SA Health placed a gag order on preventing Prof Petrovsky from mentioning Flinders Medical Centre in any press release or interview and severely restricted media from entering Flinders Medical Centre to interview Prof Petrovsky about his successful vaccine. To this day Prof Petrovsky must only use his Flinders University affiliation when talking to the press.

Recently we met with Prof Paddy Philips and Chief of Staff Greg Westenberg, from Minister Wade's office. Our agenda was to rally support from the Government to Lobby Minister Hunt concerning MRFF funding. The response from SA Health was disappointing as they said it wasn't the policy of the SA Health to support any research group no matter how successful as it wasn't their role to pick winners. The overall tenor of the meeting is that SA Health did not in any way support SA medical

research no matter how successful, an attitude to research that is echoed within the management of SALHN who have taken multiple actions in recent years to terminate research projects within Flinders Medical centre and discourage and obstruct the

This policy is clearly not working as we are not getting a fair share of the funding pie.

If the Government and supporting agencies, such as The Office of the South Australian Chief Entrepreneur, SA Health and Department of Industry and Resources work together to spotlight achievements of individual Companies and Institutes the focus is equally on South Australian research and that should benefit other Research activities in our State and draw the positive attention that we so seriously deserve.

We remain frustrated that South Australia hasn't used Vaxine's success to highlight the world-class research that is happening right here in Bedford Park.

#### Appendix A

Funding received to date:

##### ARC Funding:

2008 University of Melbourne and Vaxine

2011 Flinders University & Vaxine

2012 University of South Australia & Vaxine

2012 University of Queensland & Vaxine

2013 University of Melbourne & Vaxine

2013 University of South Australia & Vaxine

2013 University of Queensland & Vaxine

2014 University of Sout Australia & Vaxine

##### Other Funding:

2004 NIH

2007 Bioinnovation Grant

2007 Commercial Ready Grant

2008 Commercial Ready

2011 Gates

2011 IFSA

2013 NIH

2013 Commercialisation Australia

2013 DEFST Catalyst Grant

2017 DMTC

2017 MTP Connect

2017 NIH

2018 NIH

2018 Researcher in Business

2019 NIH

2020 Fast Grants

2020 Innovate UK

2020 MTP Connect