COOPERATIVE RESEARCH CENTRES

ASSOCIATION

Senator Ursula Stephens
Chair
Senate Standing Committee on Foreign Affairs,
Defence and Trade
Department of the Senate
Parliament House
Canberra ACT 2600

30 July 2012

Dear Ursula,

Defence Trade Controls Bill 2011

I write as Chief Executive Officer of the CRC Association Inc (**CRCA**), in support of the Response to Questions on Notice from Universities Australia, dated 19 March 2012, in relation to the *Defence Trade Controls Bill 2011* (**Bill**).

CRCA represents Cooperative Research Centres (**CRCs**) and promotes the pursuit of science, particularly through the Australian Government's CRC Program.

This letter is intended to be read in addition to the matters set out by Universities Australia, which I have not restated here.

1. CRCA POSITION

CRCA supports the submission made by Universities Australia and further notes that the restrictions and administrative burdens identified by Universities Australia in relation to foreign staff working on research projects will also significantly impact on conduct of research by non-university entities, including research institutions and businesses. This will make Australia a less attractive and less competitive destination for research collaboration.

CRCA requests that the Committee recommend the Bill be amended to:

- enshrine protection for freedom of fundamental research, in the manner of section 8 of the United Kingdom *Export Control Act 2002* (**UK ECA**); and
- adopt a definition of fundamental research which encompasses both basic and applied research, with contextually appropriate applications to research conducted at universities, research institutes and business entities or elsewhere, in the manner of Parts 734.8 and 734.11 of the United States *Export Administration Regulations* (**US EAR**).

2. IMPACT ON THE CRC PROGRAM

The Australian Government's CRC Program is designed to deliver industry-driven, user-centric research results that address significant issues with a global level of impact and

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innovation. CRCs are intended to bring together a critical mass of researchers (fromuniversities and other research institutes) with industry end-users, including attracting international investment and research engagement.

There are two aspects in which the impact of the Bill in its current form is in direct conflict with the intent and operation of the CRC Program, as follows.

(i) **International sharing of intangible 'technology'**

The impact of the Bill on international exchange of intangible 'technology' is of particular significance to CRCs, because of the inherent requirement that information be shared in order for collaboration to occur and because conducting world-leading research requires accessing international expertise. The ability to harness international resources (including foreign researchers working in Australia, foreign research institutions and foreign end-users and investors) can be critical to producing globally competitive results for the benefit of Australia. Under the CRC Guidelines, CRCs are explicitly 'encouraged to engage globally' and 'co-investment with international organisations is particularly encouraged' (section 2.4.1).

Section 10 of the Bill creates offences for engaging with foreign persons through the supply of technologies or provision of services in relation to goods listed on the Defence and Strategic Goods List (**DSGL**). Therefore, the Bill, as it stands, has the potential to stifle the operation of CRCs in fields of research which touch upon goods and technologies on the DSGL, by obstructing collaboration with international researchers and international end-users, making it difficult for Australia to operate at the forefront of these fields of national interest.

(ii) **Goal-oriented research**

The Explanatory Memorandum to the Bill (**EM**) states an intention for an exception to be introduced (under subordinate legislation) that would apply only to 'basic' scientific research, being research which is 'not primarily directed towards a specific practical aim or objective'.

The impact of the Bill on CRCs will not be mitigated by the introduction of this proposed exception, as under the CRC Program, the Australian Government provides funding to 'tackle clearly-articulated, major challenges for... end-users. CRCs pursue solutions to these challenges that are... capable of being effectively deployed by the end-users' (section 1.2.2).

The Bill and proposed subordinate legislation, as they stand, inhibit goal-orientated research conducted through CRCs, obstructing the development of practical solutions to identified challenges of national significance.

CRCA requests the Committee to consider the balance of interests under the legislation in this context.

3. UK AND US PROVISIONS

The EM states that the purpose of the Bill is to give effect to the *Treaty between the Government of Australia and the Government of the United States of America concerning Defense Trade Cooperation* (**Treaty**), and 'strengthen Australia's export controls to align them with international best practice'. However, CRCA submits that the Bill, as it stands, is

more onerous that comparable foreign regimes, going beyond what is required to give effect to Australia's treaty obligations and achieve international best practice.

The UK also entered into an equivalent treaty with the US and has implemented a legislative regime to meet these requirements and control international transfer of intangible 'technology'. Notably, section 8 of the UK ECA explicitly enshrines freedom of scientific research, stating that no controls may be made which have the effect of 'prohibiting or regulating... the communication of information in the ordinary course of scientific research'.

The US EAR and *International Traffic in Arms Regulations* (**US ITAR**) regimes both include control exclusions for 'fundamental research', where this is defined as including both:

> '*basic and applied* research in science and engineering, where the resulting information is ordinarily published and shared broadly within the scientific community' [emphasis added] (US EAR, Part 734.8(a)).

Fundamental research is distinguished from proprietary research and industrial development, but prepublication review to ensure no proprietary or patentable information is compromised is explicitly stated to still fall within the bounds of fundamental research.

The application of the fundamental research exception extends to universities for military goods under US ITAR, and to universities, research institutes and corporate/other researchers for dual-use goods under US EAR.

CRCA submits that there is scope to adopt provisions within the Bill to suitably protect and exempt basic and applied research from trade controls, in line with the above UK and US provisions, and still meet all trade control obligations.

4. CRC EXAMPLES

The Attachment sets out some examples of the impact of the Bill, in its current form, these have been gathered from several sources for the information of the Minister for Agriculture.

5. CONCLUSION

Australia's defence trade controls should not be more onerous than those of equivalent international regimes. The need for Australia to meet its international treaty obligations and safeguard national security through enhanced defence trade controls overs intangible 'technology' must be balanced with the need to ensure that Australia does not become an unattractive research collaboration destination, leading to a loss of globally competitive research outcomes.

CRCA requests that the Bill be amended to achieve this balance, through implementing protection for freedom of research and exceptions for both basic and applied research that are applicable (as contextually appropriate) to research conducted by any entity.

Yours faithfully,

PROF TONY PEACOCK
Chief Executive Officer

POTENTIAL CONSEQUENTIAL IMPACTS OF THE DEFENCE TRADE CONTROLS BILL 2011

Participants at the meeting on 24 July 2012 agreed to consider scenarios to illustrate the potential impact of the Bill. A separate submission to the Senate Committee has been developed by Universities Australia, which fully explores the impacts on their business. An analysis of the potential impact of the Bill on an international cereal rusts breeding program run from the University of Sydney follows the three scenarios.

Scenario 1:

A request is received from the World Health Organization to assist a laboratory in Indonesia with the development, validation and implementation of a PCR test for highly pathogenic avian influenza. This will assist in the accurate diagnosis of human cases of infection and assist in our ability to understand the spread and evolution of the virus.

This would require

- Visits from Indonesian scientists to our laboratory to be trained on the equipment and to be provided with test protocols. These protocols have been developed in our own laboratory and have never been placed in the public domain.
- Visits of Australian scientists to the laboratory in Indonesia to help them with setting up of the tests and establishing a Quality Assurance system. This would include assisting with choice and commissioning of equipment, and advising on laboratory design
- Ongoing training and exchange of knowledge

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- The Indonesian personnel will have access to test protocols that are not in the public domain for an organism on the Sensitive list. This not because they are confidential, only that there is no reason or suitable mechanism for placing them in the public domain.
- The training would include transfer of knowledge about the genetic characterisation of influenza viruses, reassortment processes, and influenza virus culture.
- There would also be training in the setup, design and performance of PCR based tests and sequencing. While this training would be related to influenza, those same techniques would be applicable to many other organisms.

Scenario 2:

A new strain of Rift Valley fever virus (RVFV) has emerged in Africa and is spreading through Asia towards Australia. It has adapted to new mosquito species, including those commonly present in Australia. The virus has never been present in Australia and we have no capacity to detect it in humans, animals or mosquitoes. In order to prepare for this we design some PCR tests that we think will detect the new virus, but we have no material that we can test it on. As RVFV is a Biosafety Level 4

pathogen we can neither import it nor use live virus in our laboratory. However, we could safely use a plasmid with RVFV genetic sequences inserted into it to validate our tests. Therefore we contact a colleague in an African laboratory that has the virus. The African laboratory will send a scientist who we can train in cloning so that he can go back to his laboratory and create the plasmid we need and send it to us. This all needs to be done urgently

Defence Trade Control implications

- The African personnel will have access to test protocols that are not in the public domain for an organism on the Sensitive list.
- The training would include transfer of knowledge about the genetic manipulation of viruses.
- There would also be training in the setup, design and performance of tests and sequencing.
- The same techniques would be applicable to many other organisms.
- There is limited time for an exemption process.

Scenario 3:

Australia carries international obligations with respect to reference laboratories (in animal health and human health). These laboratories provide regional reference services to countries in the Asia–Pacific, including identification of isolates from these countries and research on the agents involved to develop better diagnostic tests.

- For animal health, Australia hosts FAO/OIE reference laboratories ('collaborating centres') for a number of diseases including avian influenza, bluetongue, bovine viral diarrhoea, Hendra virus, Newcastle disease, Nipah virus, paratuberculosis, ranavirus and yellowhead (see: http://www.scahls.org.au/ref_labs/reference_laboratories
- For human health, Australia hosts a WHO Collaborating Centre for Reference and Research on Influenza (at the Victorian Infectious Diseases Reference Laboratory). This is one of five such centres worldwide that constitute the WHO Global Influenza Surveillance and Response System (GISRS): others are in Atlanta, Beijing, London and Tokyo (see: http://www.influenzacentre.org/ — David Smith/PHLN will likely flag this issue).

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- There are existing well-established protocols for moving isolates of such pathogens between countries (covering biosafety, biosecurity and for security sensitive biological agents, bioterrorism issues). The proposals in the new Bill appear not to add anything more except additional costs and delays (plus the potential expansion of the number of agents under scrutiny).

- Clearly the range and number of countries that might be listed is of potential concern to ACIAR, which has collaborative research programs in many of the countries that are listed in the equivalent US legislation. However, this concern is well described in the Universities' submission.

THE *DEFENCE TRADE CONTROLS BILL 2011 (CTH)* (THE "BILL") AND FOOD SECURITY

Professor Robert F. Park, The University of Sydney Plant Breeding Institute. 26 July 2012
(robert.park@sydney.edu.au).

Eight million people die from lack of food and nutrition every year – about 24,000 deaths each day [*World Bank, FAO, International Fund for Agricultural Development*]

"When people are starving there is no peace" [*Dr. Charles Muscoplot, Dean of the University of Minnesota College of Agriculture, Food and Environmental Science*]

The importance of defence in a nation's security cannot be understated; the supply of adequate quantities of safe food is, however, arguably of equal importance. The role played by food security in world stability is best underlined by the 1970 Noble Peace Prize- awarded to Dr Norman Borlaug for his work in the Green Revolution. This revolution began in earnest in the late 1960s and involved the development of high yielding cereal cultivars and adoption of a range of improved agronomic practices.

While 15% of people (ca. 1 billion) still live in extreme poverty, this is significantly less than the 40% of people in such circumstances prior to the Green Revolution. Dr Borlaug bred wheat cultivars that were high yielding, and importantly, resistant to one of the most feared plant diseases, stem rust. This disease, along with another wheat rust disease, stripe rust, continue to impact significantly on global wheat production. At a meeting I attended in Kenya in 2005, Dr Borlaug stated "The prospect of a stem-rust epidemic in wheat in Africa, Asia, and the Americas is real and must be stopped before it causes untold damage and human suffering" (http://www.sciencenews.org/articles/20050924/food.asp).

Both of the pathogens that cause these diseases, *Puccinia graminis* and *P. striiformis*[1], will by their inclusion in the Defence and Strategic Goods List (DSGL; http://www.comlaw.gov.au/Details/F2011L02061), be subject to regulation under the proposed Bill.

Wheat accounts for a fifth of humanity's food. Australia has been a world leader in finding and providing genetic protection against rust diseases in this vital crop. We have played a crucial part in training foreign students in this field who have gone on to make huge contributions at the global level. Two of Dr Borlaug's most important successors in wheat breeding at the International Wheat and Maize Improvement Centre in Mexico (CIMMYT), Dr Sanjaya Rajaram and Dr Ravi Singh, both Indian nationals at the time of their studies, completed PhDs at the University of Sydney in wheat rust resistance breeding and genetics. Indeed, based on acreage sown to cultivars developed, Dr Rajaram is regarded by many as the most successful wheat breeder ever. Meeting future increases in demand for wheat, predicted to increase by more than 1.5% annually up to 2020, will require much work and substantial innovation in devising new strategies to protect our crops against yield robbing pathogens like the rust diseases.

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[1] Incidentally, these pathogens as listed in both the Australia Group (http://www.australiagroup.net/en/plants.html) and DSGL lists are incorrect and not in accordance with internationally accepted scientific nomenclature

The impact of the Defence Trade Controls Bill on Australian agricultural research is uncertain due to a continuing lack of clarity about how the proposed controls on 'intangible supplies' of technology listed on the DSGL will be applied. What we do know is that because the two rust pathogens that form the basis of much of our research appear on the DSGL, our research activities are likely to be subjected to the control regime that the Bill will establish.

Background

At the request of the Senate Foreign Affairs, Defence and Trade Committee, the University of Sydney has been engaged in negotiations with Defence and Universities Australia since March 2012 to try to ensure that the reforms strike an appropriate balance between the need to protect national security and ensuring that the conduct of Australian public good research, and the dissemination of outcomes from such research, is not impacted unreasonably.

As stated by Professor Stephen Garton in relation to the Bill in his capacity as Acting Vice Chancellor of the University of Sydney in a letter to Senator The Honourable Chris Evans earlier this year, "*The University of Sydney is deeply committed to securing Australia's national security, as we all are, by working with Defence to address its concerns. We also appreciate that the negative impacts outlined above are not intended by the authors of the legislation*".

We understand that the CRC Association has recently been provided with the a 'Community Consultation' letter prepared by the University of Sydney's Deputy Vice-Chancellor Research, Professor Jill Trewhella in June 2012, and circulated widely within the Australian research community. Professor Trewhella has been leading the university sector's engagement with these issues on behalf of the Deputy Vice-Chancellors Research of Universities Australia and the Group of Eight Universities, respectively. The letter provides detailed background on the Bill, the approach that the University has taken to its negotiations with Defence, and a summary of its continuing concerns with Defence's preferred option for implementation.

The Australian Research Council and the National Health and Medical Research Council have recently provided submissions to the Senate Committee supportive the university sector's positions. These are available through the Committee's website: http://www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=fadt_ctte/trade_controls/submissions.htm

We understand that the Committee is scheduled to table a preliminary report by 15 August and plans to hold further hearings in relation to these unresolved matters in August and/or September 2012.

We would encourage DAFF to consider these issues closely and to engage with Defence, ARC, NHMRC, DIISTRE, the university sector and the Senate processes as it considers appropriate.

I understand that the best contact point at Universities Australia is Dr Pamela Kinnear, Deputy Executive Director, p.kinnear@universitiesaustralia.edu.au , 02 6285 8108.

Alternatively, at the University of Sydney, the contact point is Mr Tim Payne, Director, Policy Analysis & Communication in the Office of the Vice-Chancellor, tim.payne@sydney.edu.au , 02 9351 4750.