Wither Regional Advanced University Research?

Considering US & European Sensitive Scientific Research Environments & A Model for Australian University Affiliated Regional Research Centres

As of 20 June 2025

Key words: Australia: DSTG, CSIRO, ARC, ADSUN, DIP, and universities

USA: UARCS, FFRDCs, NIH, NSF and universities

Overview

A spike in geopolitical uncertainty and a surge in requirements for security of sensitive research, coupled with a flux with US research funding, suggests some fresh thinking is required. A comparison between the US and Australian research and education sectors and a quick glance at European arrangements seems appropriate. The contrast is striking.

Careful consideration of available models is required to draw the right conclusions for Australia. This paper reviews the university-affiliated Australian and US research environments, along with a brief look at Europe. What this points to is the need for a new mechanism to enable leading Australian universities to undertake sensitive research with national security implications. The US model offers pointers, but the scale is problematic for Australia. Europe has a largely disaggregated model, but there are indications of increased cohesion and focus.

Overall, this review suggests that, for the Australian university sector at least, the UARC model is the one with the greatest relevance. This appears to be the form that DSTG has modelled its proposed Defence Research Centres (DRC).

This paper endorses the DRC concept but looks for them to be collaborative university-affiliated regional advanced research centres established in capital cities, and fostered by Go8 universities. Drawing in part on the model of the UARCs, these Australian university-affiliated regional research centres, or DRCs, could help significantly enhance and protect sensitive advanced scientific research.

In outline, the paper covers

- Australia's Government Research Environment
- The Australian University Research Environment
- Extant Australian Facilities
- Meggitt's Critique
- The USA's Research and Development Environment
- US Government Agencies Involved
- And the European Model?
- A Way Forward for Australia
- Appendices on US FFRDCs and UARCS

Australia's Government Research Environment

Thinking about Australia's university-related research environment, there are some important points of comparison with the research enterprise in the United States and some important differences. Australia's university sector conducts a massive amount of scientific research which has generated an array of advancements benefiting society. The majority of this is basic research which, often enough, results in applied commercially viable derivatives. This applies to engineering, computer, health & environmental sciences and more.

In addition to the universities, the Australian government has its own scientific research bodies - most notably CSIRO and DSTG. It also has the Australian Research Council (ARC) and more. It is here, particularly in the CSIRO and DSTG, where much of Australia's advanced and sensitive research is undertaken, usually with little direct engagement with university research. This is a missed opportunity to capitalise on cutting edge research occurring in the university sector.

- (1) **CSIRO** the <u>Commonwealth Scientific and Industrial Research Organisation</u> "works with industry, government and the research community to turn science into solutions to address Australia's greatest challenges, including food security and quality; sustainable energy and resources; health and wellbeing; resilient and valuable environments; future industries; and a secure Australia and region".
- (2) **ARC** the <u>Australian Research Council</u> is the Australian Commonwealth Government's funding agency focused on supporting "the research sector to produce excellent and impactful non-medical fundamental and applied research" to achieve "outcomes for Australia's economic, social, environmental and cultural benefit." Originally founded as the Commonwealth Universities Research Grants Committee in 1946, it has supplied \$13 billion in research grants since 2001 and has established 74 "Centres of Excellence" at the cost of \$1.9 billion. The ARC plays "an integral role in supporting the research sector to produce high-quality and impactful research through the delivery of the National Competitive Grants Program (NCGP)."
- The ARC LIEF-Linkage Infrastructure and Equipment Fund scheme is the primary scheme for funding research infrastructure, centred around shared resources to allow researchers access to state-of-the-art research equipment to enhance our national research capability. This is the primary source of funding for Research Infrastructure. It is intended to align with the government priority focus on the adoption, translation and commercialisation of research." It is designed to facilitate collaboration between the university sector, industry, community organisations and the government sector. My understanding is that, so far, this program has not funded the establishment of secure large-scale research facilities of the kind that would enable the kind of advanced and sensitive research that UARCs and FFRDCs undertake.
- (3) **NHMRC** the National Health and Medical Research Council is a longstanding body originally the Federal Health Council (1926), renamed NHMRC in 1937. The Council has consistently supported and stimulated health and medical research, keeping them closely linked to public-health issues and the community's need for health advice. This council s important to defence and has a similar funding profile to the ARC.

- (4) **DSTG** the <u>Defence Science and Technology Group</u> brings together interdisciplinary expertise from across Australia and around the world to address Defence and national security challenges. Its role is to" work closely with the Australian science, technology and innovation eco-system to deliver scientific advice and solutions that provide capability enhancement for Defence and the national security community."
- (5) **ADSUN** the <u>Australian Defence Science and Universities Network</u> is described as "the collective of the state-sponsored Defence research and innovation networks". Managed by DSTG, "ADSUN connects Defence with researchers from universities, industry and the broader research community, providing Defence with the best research and development capabilities in Australia and researchers with the opportunity to apply their research to real-world problems."

DIP – the <u>Defence Innovation Partnership</u> is part of ADSUN and is intended as a catalyst for defence-relevant research and development in South Australia. It is intended to foster collaboration and engagement between <u>Defence SA</u>, DSTG, <u>The University of Adelaide</u>, <u>Flinders University</u> and the <u>University of South Australia</u> and industry.

Other states and territory governments sponsor similar arrangements as outlined below.

Applicant		
Location	Facilitation Network	Email Address
Victoria	<u>Defence Science Institute (DSI)</u>	dsi.info@defencescien
		<u>ceinstitute.com</u>
NSW	Defence Innovation Network (DIN)	info@
		<u>defenceinnovationnetwo</u>
		<u>rk.com</u>
South Australia	<u>Defence Innovation Partnership (DIP)</u>	enquiries@
		<u>defenceinnovationpartne</u>
		<u>rship.com</u>
Western	Defence Science Centre (DSC)	dsc@jtsi.wa.gov.au
Australia		
Tasmania	<u>Defence Science Institute (DSI)</u>	dsi.info@defencescien
		<u>ceinstitute.com</u>
ACT	Defence Innovation Network (DIN)	info@
		defenceinnovationnetwo
		<u>rk.com</u>
Northern	Queensland Defence Science Alliance (QDSA)	info@qdsa.au
Territory		
Queensland	Queensland Defence Science Alliance (QDSA)	info@qdsa.au

In its <u>Accelerating Asymmetric Advantage</u> strategy, released in September 2024, DSTG outlines a set of principles for a proposed a **Defence Research Centre (DRC)**:

- Focus on enduring thematic areas that are complex and require interdisciplinary teams to deliver next generation capabilities for the Australian warfighter.
- Facilitate collaboration across the broader IS&T Ecosystem involving participation from Defence, across Government, research organisations, industry and universities.

- Each DRC will be headquartered at a single university campus, with the ability to distribute elements across other locations hub and spoke model with staff from Defence, industry and universities.
- Adopt and maintain a security posture and framework that is commensurate with the risk and sensitivity of the specific theme.
- Have a common governance model, including branding and communications to ensure all DRC's operate as part of a coherent, collective National Defence enterprise.
- A five-year term with comprehensive review in the fourth year to consider continuation.
- Formalised mechanisms to support on- and off-boarding of collaborations / partnering as appropriate.
- Established through a competitive 'expression of interest' and evaluation process.
- Co-design and co-investment with university and industry partners underpins DRCs.
- Each DRC will also explore the potential to deliver dual-use outcomes for sectors beyond Defence as a mechanism to support their sustainability.

Once implemented, this DRC model looks set to go a long way towards overcoming the security shortcomings of open university-based sensitive advanced research. There is a question over the need to generate critical mass for such centres to prove effective. The model proposed by DSTG could be developed further to further foster collaboration, particularly between universities located in the same geographic region.

These government research related entities have a variety of relationships with their Australian university counterparts but none of them quite match at this stage the formal and substantial arrangements associated with US UARCS and FFRDCs. The contrast is explored further below, after we review some of the current Australian university arrangements.

The Australian University Research Environment

Australian universities, notably including the <u>Group of Eight</u> (Go8) universities, are research-intensive academic institutions of higher learning. The Go8 identifies its research as contributing \$24.5 billion each year to the nation's economy. Much of this draws on funding supplied by the ARC. Some comes from other government departments and agencies. This is well and good, but anecdotal indicators suggest this is cumbersome and inefficient in an age of accelerating technological research and innovation.

Despite the advent of the fourth industrial revolution, and the opportunities this presents, the recent <u>Strategic Examination of Australia's Research & Development system</u> identified that Australia's R&D intensity has been in decline for over a decade.

The Go8 has advocated for a bipartisan <u>National Research Strategy</u> to grow R&D and build a more resilient and dynamic economy—a strategy that sets a dedicated framework to support research in Australia for generations to come. It has also recommended the adoption of a target to lift Australia's R&D intensity to 3 per cent of GDP by 2035.

¹ The Go8 includes the following universities: ANU, UNSW, Sydney, Melbourne, Monash, Queensland, Western Australia, and Adelaide.

Universities in the Go8 sometimes also receive research funding from corporations interested in collaborating with university researchers. This paper suggests that this and more needs to be done to corral the disparate efforts aimed at research excellence and innovation on sensitive and advanced technology research across Australia's leading universities. But first a quick survey of the realm.

Extant Australian Facilities

The <u>Australian National University</u>, for instance, is a research-intensive university, with research priorities "aligned with the pressing challenges facing the world today. From climate change and sustainability to health advancements and technological innovation" (https://research.anu.edu.au). ANU also has a range of components of interest:

- (1) The only <u>Heavy Ion Accelerator Facility (HIAF)</u> in the Southern Hemisphere but the HIAF has limited resources.
- (2) The <u>ASD-ANU Co-Lab</u>, where students "conduct complex research into Australia's toughest national security problems"; but the Co-Lab has limited capacity for advanced sensitive research.
- (3) The <u>National Security College</u> is a "joint initiative between the Commonwealth and the ANU "serving as a meeting place for policy, academia, industry and the wider community." It is similarly constrained in terms of its advanced research options.
- (4) The <u>ANU Institute for Climate</u>, <u>Energy & Disaster Solutions</u> addressing "climate change, energy system transitions and disasters".
- (5) The <u>Strategic and Defence Studies Centre</u>, <u>Coral Bell School of Asia Pacific Affairs</u> which "focuses on understanding the complexity of Asia's strategic environment, Australia's place in it, and the analysis of armed force in international affairs."
- (6) The ANU <u>Defence Institute</u>. With a range of disparate elements working on defence and security issues, this institute was recently established to coordinate "a strategic approach to Defence engagement" and "to leverage the University's research quality across science, technology, engineering, mathematics, computer science, health and psychology, social sciences, humanities, policies, regulation and law."

Other Go8 universities have their research specialities as well. While not an exhaustive list, some of these relevant to the issue of sensitive advanced research are described below.

The Sydney University, for instance, has:

- (1) The <u>Eggleton Research Group</u> with its complement of fundamental and applied research on photonics, optical physics and optoelectronics. It is part of <u>Sydney University Institute of Photonics and Optical Science (IPOS)</u>, the <u>NSW Smart Sensing Network (NSSN)</u> and the <u>University of Sydney Nano Institute</u>. The Group also hosts the Jericho Smart Sensing Laboratory (JSSL).
- (2) The <u>United States Studies Centre</u> "a national resource, that builds awareness of the dynamics shaping America, their implications and Australia and critically solutions for the Alliance."

UNSW has its <u>Security & Defence PLuS</u> alliance with Arizona State University and Kings College London. In addition to the basic and applied research undertaken on campus in Kensington and Canberra, this alliance is looking to foster innovative research that, could benefit from arrangements to enable sensitive and compartmented advanced research. UNSW also has a sophisticated <u>Nuclear Engineering</u> program.

Adelaide University has its <u>Defence and Security Institute</u> which "builds and maintains the research skills, infrastructure, commercialisation and knowledge transfer abilities required to continue contributing to the defence of our nation". It capitalises on the DIP and ADSUN arrangements, but this needs to be taken to the next level if UARC-like functionality is to be achieved.

The University of Western Australia has it <u>Defence & Security Institute</u> – "to focus UWA's expertise and build partnerships in defence and security research, policy, engagement and education." UWA also houses the <u>Perth USAsia Centre</u> which aims "to foster stronger connections, educate and empower our government, business, academic and civil community to better understand the critical issues facing the region." Neither of these appear directly involved in sensitive advanced applied research.

Meggitt's Critique

Meanwhile, Major General Hugh Meggitt has been appointed as Head of ASCA - the Advanced Strategic Capabilities Accelerator with responsibility "for leading ASCA in its mission to accelerate the development and transition of asymmetric capabilities to the ADF through innovation in order to meet Defence priority needs." He has been known to be critical of the university sector as "unreliable" and "leaky" when it comes to handling research with dual civil and military applications and with allowing people without security clearances or a heightened security consciousness to access and share valuable and sensitive advanced research.

While there is an element of truth to MAJGEN Meggitt's critique, it fails to recognise that Universities are fundamentally different to industry partners in that their research time scales are longer and higher-risk and their primary purpose is to generate and disseminate knowledge. For this reason, clear guidelines incorporating what should and should not be disseminated need to be agreed upon by both partners as part of the planning of research projects involving university research. Ignoring this need has an adverse impact on researcher employability, University reputation and promotion prospects of researchers who are involved in Defence-relevant research. The ADF and the University sector need to work together to provide an environment where the needs of both groups are met and where secure lines of communication of research outcomes and the ADF's operational needs can be achieved. The concentration on punitive controls such as Defence Export Controls and the Defence Industry Security Program has not proved effective in providing such an environment.

Meggitt's critique echoes a bi-partisan scepticism over the trajectory of university education and research. This scepticism has seen funding for universities significantly curtailed and revenue raising schemes, reliant on foreign student arrivals, curtailed. This approach has not

allayed the fundamental concerns about information security, but it has severely limited Australian Universities' ability to undertake world-class research in Defence-relevant areas. So what is to be done?

The DSTG and CSIRO have secure facilities and employ researchers with security clearances, replicating some of the features of US research and development facilities discussed below. But there is limited overlap and interaction from CSIRO and DSTG with research in the broader university sector on advanced and sensitive research. In part this is because of the concerns Meggitt has raised.

The DSTG model of Defence Research Centres is heading in the right direction, if it can be funded and developed collaboratively on a regional basis. If such a model is adopted, then it needs to be accompanied by support of clearances for academics involved in the research within these Centres and funding for the network and laboratory infrastructure upgrades needed to undertake such work.

While ARC linkage and LIEF grants are widely appreciated, they don't go far enough to build the critical mass for an enduring set of partnerships between the university sector, industry the parts of government that rely on the output of sensitive advanced and applied research.

In addition, historically, Australian researchers have relied extensively on funds associated with the US research sector, either in the form of direct funding or in-kind collaboration with US researchers. So let's quickly review it.

The USA's Research and Development Environment

The United States' R&D environment includes R&D funded by the <u>National Institute of Health</u> (NIH) and the <u>National Science Foundation</u> (NSF) which focuses "on accelerating new technologies and big ideas — from biology to technology". In addition, much of the advanced research is funded directly by industry – including some of the most famous global brands associated with the fourth industrial revolution – including Google, Microsoft, and more.

In contrast to the bifurcated Australian research model described above, the US research ecosystem has supported and facilitated greater crossover from pure university-based research and applied and protected research in secure facilities. While NSF and NIH cutbacks have featured in the news, the broad direction and momentum of these bodies remains largely on track. While the scale of the US enterprise is not easily replicable, it is worthwhile considering how they do it to consider how Australia can draw lessons from that experience and remodel and down-scale it for the Australian context.

Stemming back to the Second World War and the early years of the Cold War, a range of US government agencies invested heavily in university-derived research through Federally Funded Research and Development Corporations (FFRDCs) and, from the US Department of Defense (and subordinate agencies) in a suite of University Affiliated Research Centers (UARCs).

US Government Agencies Involved

US government agencies that directly fund research include the following:

- (1) US <u>Department of Energy</u> (DoE), which has a remit for nuclear security, energy security, cyber security, environmental management and emergency response. They have been a major sponsor for many of the FFRDCs listed in the second appendix below.
- (2) The US Department of <u>Homeland Security</u> (DHS) which is "committed to relentless resilience, striving to prevent future attacks against the United States and our allies, responding decisively to natural and man-made disasters, and advancing American prosperity and economic security long into the future."
- (3) The <u>Department of Health & Human Services</u> (DHHS) with a mission "to enhance the health and well-being of all Americans, by providing for effective health and human services and by fostering sound, sustained advances in the sciences underlying medicine, public health, and social services."
- (4) The <u>U.S. Department of Defense</u>, which funds UARCs and several FFRDCs. The Department recently announced that the "<u>the Minerva University Research</u> <u>Competition</u>", designed to fund social science research with important implications for national security", was being cut.
- (5) NASA is another government entity that funds FFRDCs.

UARCs are housed with established universities (as listed in Appendix 1). In contrast, many of the FFRDCs are administered by spin-off agencies like MITRE (originally the Massachusetts Institute of Technology Research Enterprise), which operates six of the 42 FFRDCs; and RAND (Research ANd Development) Corporation – a "non-profit, nonpartisan research organization that provides leaders with information they need to make evidence-based decisions." Both of these organisations have Australian offices set up as RAND Australia and MITRE Australia.

It is noteworthy that the US involvement in university research is much broader and less cohesive than this description would imply. In addition to NASA, there is the AFOSR for Air Force, ONR for Navy and ARL for Army. These organisations have a range of funding mechanisms for US universities and consortia. Examples include the MURI system for Air Force, where problem statements for fundamental research problems are sent to universities, which form consortia with different skills to approach these problems. For a few years, DST group leveraged that funding scheme to provide a contribution allowing Australian researchers to participate in MURI grants, which would otherwise not be open to non-US entities.

It is also interesting to note that each of the US Armed Forces sponsors research projects on every continent. For example, the USAF has offices in Japan and Australia (AOARD), the UK (EOARD) and South America. These offices provide funding for projects that can be openly bid for by researchers in those countries. For a relatively small outlay, this allows the US Defence Force to get high-quality research done at a reasonable price while simultaneously having access to the state of the art research in each of those continents and being able to monitor important developments occurring outside the US. We understand these to be largely unaffected so far by US DOGE related cutbacks.

In specific research areas, there are also specialist funding schemes run by the US DoD. For example, in the area of hypersonics, there is a University Consortium on Applied Hypersonics (UCAH) based on a similar idea to the MURI but specific to hypersonics.

In addition, there are some university campuses like Texas A&M and the University of Tennessee within the US that have close links to Defence and work on Defence-related applied research problems.

One important difference between the model of interaction between Defence and academia in the US and Australia is that the US trains some of its uniformed personnel to PhD level in strategically important science and engineering areas. This provides them with the ability to interact closely with academics and to direct research in areas that benefit Defence. The Australian Defence Force uses a different working model that relies on DST group to provide the technical expertise to bridge this gap between research and ADF capability.

And the European Model?

Europe has a largely disaggregated model for university-associated research, but there are indications of increased cohesion and focus across Europe. The <u>European University</u> <u>Association</u> is worth examining more closely to consider potential opportunities for learning lessons and fostering additional collaboration.

Then there is <u>Horizon Europe</u>, the <u>EU's funding programme for research and innovation</u> – an organisation to which <u>Canada</u> and <u>New Zealand</u> have already become members. Horizon Europe declares "The EU is the most significant regional science and innovation partner of New Zealand: more than half of New Zealand's researchers have an active collaboration with a European partner."

Similarly, Canadian entities can now join and lead research consortia with European entities "to tackle global challenges together. They can be funded directly from the programme, since Canada contributes to its budget from 2024 onwards."

The imperative for action on this front is accentuated by the news that the European Commission chief and the French president are trying to woo American researchers with a new program called "Choose Europe for Science".

A Way Forward for Australia

Australia's research and university sectors are making advances and yet they have the potential to go much further and faster. The current model seems inadequate for the task ahead. DSTG and CSIRO have specific and constrained mandates with limited overlap with the university sector.

The ADSUN network goes some way towards a co-ordinated Defence-relevant research effort but more is required to ensure a secure, stable, supportable facility emerges to sustain secure sensitive advanced research across the university sector's advanced research ecosystem.

Absent a UARC or FFRDC model in Australia, there are opportunities being missed, it appears, for sensitive advanced research to be undertaken in and with Australia's leading research-intensive universities. Dispersed around the coast of Australia, and with a highly competitive environment between universities, to date there has been little appetite for interuniversity research collaboration. This is an inadequate state of affairs.

Overall, this review suggests that, for the Australian university sector at least, the UARC model is the one with the greatest relevance. This appears to be the form that DSTG has modelled its proposed Defence Research Centres.

The Federal government, working in collaboration with state and territory government counterparts, needs to properly resource the establishment of DRCs. These could look to generate the critical mass for UARC-like Australian university affiliated regional research centres.

Conceivably, these DRCs would help foster collegiality and build on the emerging critical mass in the university sector at the respective universities. This could see centres established, potentially with a Go8 lead, in:

- Perth (covering UWA, Curtin, Murdoch, Edith Cowan and Notre Dame),
- Adelaide (covering Adelaide and Flinders),
- Melbourne (covering Melbourne, RMIT, Monash, Latrobe and Deakin),
- Canberra (covering ANU, UNSW Canberra, Canberra U and Australian Catholic U),
- **Sydney** (covering Sydney, UNSW, Macquarie, Western Sydney, Notre dame, University of Technology Sydney) and
- Brisbane (covering UQ, Griffith etc).
- **Hobart** so far not specifically listed by DSTG, but it could also have an important role to play, given the maritime expertise there and the strategic importance of Antarctica

Given the shift in the *zeitgeist* in Europe, Canada and Australia, there appears to be considerable merit in Australian universities, either as the <u>Group of Eight</u>, <u>Innovative</u>

<u>Research Universities</u> and/or <u>Universities Australia</u>, engaging more closely with Horizon Europe to become a member, corporately, and to explore opportunities for enhancing research collaboration.

I submit this as a draft for consideration and hoping it will evoke not only constructive feedback but additional thoughts about how to "Advance Australia Fair".

Appendices:

- 1. US University Affiliated Research Centers (UARCs)
- 2. US Federally Funded Research and Development Corporations

UARCs - University Affiliated Research Centers						
DoD UARC's	University	Primary Sponsor	Founded			
Georgia Tech Research Institute	Georgia Institute of Technology	Army	1995			
Institute for Soldier Nanotechnologies	Massachusetts Institute of Technology	Army	2002			
Institute for Collaborative Biotechnologies	University of California, Santa Barbara	Army	2003			
Institute for Creative Technologies	University of Southern California	Army	1999			
Applied Physics Laboratory	The Johns Hopkins University	Navy	1942			
Applied Research Laboratory	Penn State University	Navy	1945			
Applied Research Laboratory	University of Hawaii	Navy	2008			
Applied Research Laboratory	University of Texas at Austin	Navy	1945			
Applied Physics Laboratory	University of Washington	Navy	1943			
Space Dynamics Laboratory	Utah State University	Missile Defense Agency (MDA)	1996			
Systems Engineering Research Center	Stevens Institute of Technology	USD(R&E)/ DDR&E(AC)	2008			
Applied Research Laboratory for Intelligence & Security	University of Maryland, College Park	USD(I)	2017			
National Strategic Research Institute	University of Nebraska	STRATCOM	2012			
Geophysical Detection of Nuclear Proliferation	University of Alaska	DASD(TRAC)	2018			
Research Institute for Tactical Autonomy	Howard University	Air Force	2023			

Federally Funded Research and Development Center (FFRDCs)					
Name	Administrator	Location	Sponsor(s)		
Aerospace FFRDC	The Aerospace Corporation	El Segundo, CA	DoD/DoAirForce		
Ames Laboratory	Iowa State University	Ames, IA	DoE		
Argonne National Laboratory	RAND Corp	Santa Monica, CA	Dod/DoArmy		
Brookhaven National Laboratory	Brookhaven Science Associates, LLC	Upton, NY	DoE		
Center for Advanced Aviation System Development	MITRE Corp.	McLean, VA	DoT/FAA		
Center for Communications and Computing	Institute for Defense Analyses	Alexandria, VA	DoD/NSA/CSS		
Center for Enterprise Modernization	MITRE Corp	McLean, VA	DoTres/IRS/DVA/SocSecAdmi n/ DComm		
Center for Naval Analyses	The CNA Corporation	Arlington, VA	Dod/DoNavy		
Center for Nuclear Waste Regulatory Analyses	Southwest Research Institute	San Antonio, TX	Nuclear Regulatory Commission		
CMS Alliance to Modernize Healthcare	MITRE Corp.	Baltimore, MD	DHHS/ Center for Medicare and Medicaid Services		
Fermi National Accelerator Laboratory	Fermi Forward Discovery Group, LLC	Batavia, IL	DoE		
Frederick National Laboratory for Cancer Research	Leidos Biomedical Research, Inc.	Frederick, MD	DHHS / NIH		
Homeland Security Operational Analysis Center	RAND Corp.	Arlington, VA	DHS S&T Directorate		
Homeland Security Systems Engr.and Dev. Instit.	MITRE Corp.	McLean, VA	DHS S&T Directorate		
Idaho National Laboratory	Battelle Energy Alliance, LLC	Idaho Falls, ID	DoE		
Jet Propulsion Laboratory	California Institute of Technology	Pasadena, CA	NASA		
Lawrence Berkeley National Laboratory	University of California	Berkeley, CA	DoE		
Lawrence Livermore National Laboratory	Lawrence Livermore National Security, LLC	Livermore, CA	DoE		
Lincoln Laboratory	MIT	Lexington, MA	DoD USD Rsrch & Eng		
Los Alamos National Laboratory	Triad National Security, LLC	Los Alamos NM	DoE		
National Biodefense Analysis and Countermeasures Center	Battelle National Biodefense Institute	Frederick, MD	DHS S&T Directorate		
National Center for Atmospheric Research	Univ. Corp. for Atmospheric Research	Boulder, CO	NSF		
National Cybersecurity Center of Excellence	MITRE Corp.	Rockville, MD	DComm, Nat Instit of Standards & Tech		
National Defense Research Institute	RAND Corp.	Santa Monica, CA	DOD USD for Acq & Sust		
National Radio Astronomy Observatory	Associated Universities, Inc.	Charlottesville, VA	NSF		
National Renewable Energy Laboratory	Alliance for Sustainable Energy, LLC	Golden, CO	DoE		
National Security Engineering Center	MITRE Corp.	McLean, VA	DoD USD Rsrch & Eng		
National Solar Observatory	Assoc of Unis for Rsrch in Astronomy, Inc.	Boulder, CO	NSF		
NSF's National Optical-Infrared Astronomy Rsrch Lab.	Assoc of Unis for Rsrch in Astronomy, Inc.	Tucson, AZ	NSF		
Oak Ridge National Laboratory	UT-Battelle, LLC	Oak Ridge, TN	DoE		
Pacific Northwest National Laboratory	Battelle Memorial Institute	Richland, WA	DoE		
Princeton Plasma Physics Laboratory	Princeton University	Princeton, NJ	DoE		
Project Air Force	RAND Corp.	Santa Monica, CA	DoD/DoAirForce		
Sandia National Laboratories	National Tech. and Engr. Solutions of Sandia, LLC	Albuquerque, NM	DoE		
Savannah River National Laboratory	Battelle Savannah River Alliance, LLC	Aiken, SC	DoE		
Science and Technology Policy Institute	Institute for Defense Analyses	Washington, DC	NSF		
SLAC National Accelerator Laboratory	Stanford University	Menlo Park, CA	DoE		
Software Engineering Institute	Carnegie Mellon University	Pittsburgh, PA	DoD USD Rsrch & Eng		
Systems and Analyses Center	Institute for Defense Analyses	Alexandria, VA	DOD USD for Acq & Sust		
Thomas Jefferson National Accelerator Facility	Jefferson Science Associates, LLC	Newport News, VA	DoE		

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